

The Nature of Collections:  
A Photographic Exploration of Collected Materials  
&  
The Photographic Exhibition:  
*'herbarium imaginaire'*

by

Susan Hawkins  
B.A., University of Victoria, 2005

A Thesis Submitted in Partial Fulfillment of the  
Requirements for the Degree of

MASTER OF ARTS

In the Department of History in Art

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### ABSTRACT

Curiosity, it can be said, alerts us to the interface between art and science, with the ‘object’ being suspended somewhere between the two. Curiosity interfaced with photography and collections are the main components of this thesis.

This thesis is organized around two principle outcomes: a written component and an artistic component. The written component investigates how the use of photography as a method of inquiry into the secondary manipulation of ready-made material results in objects that become sites of new meaning and encourage new interpretations. The artistic component was comprised of a photographic installation titled ‘*herbarium imaginaire*’ (imaginary herbarium), which featured hand-built pinhole cameras and auxiliary photography equipment used in the production of a photographs, as well as featuring an open-house and presentation of botanical specimens and plant collecting processes that was held in the University of Victoria Herbarium.

## TABLE OF CONTENTS

|   |          |
|---|----------|
| Supervisory Committee.....  | ii       |
| Abstract.....   | iii      |
| Table of Contents.....  | iv       |
| List of Illustrations .....   | v        |
| <br>  |          |
| <b>Chapter One:</b> Introduction .....  | 1        |
| <br>  |          |
| <b>Chapter Two:</b> The Nature of Collections .....   | 6        |
| Early Collections.....  | 9        |
| Cabinets for the Curious.....   | 12       |
| <br>  |          |
| <b>Chapter Three:</b> From Systems of Order to Surrealism .....                                       | 21       |
| Early Modern Collections: Museums, Plant Collectors and the Age of Gardens.....                       | 21       |
| Art and Curiosity: Surrealism and the Readymade.....  | 31       |
| <br>  |          |
| <b>Chapter Four:</b> Early Photography – Cameras Obscura and Pinhole Photography .....                | 38       |
| Vermeer and the Camera Obscura.....   | 45       |
| Pinhole Photography.....  | 49       |
| <br>  |          |
| <b>Chapter Five:</b> Reframing the Collection: Dioramas and the Photography of Hiroshi Sugimoto ..... | 52       |
| Dioramas.....   | 53       |
| Hiroshi Sugimoto.....   | 56       |
| <br>  |          |
| <b>Chapter Six:</b> The Exhibition: ‘ <i>herbarium imaginaire</i> ’ .....                             | 68       |
| Concept.....  | 69       |
| Production.....   | 71       |
| Presentation.....   | 72       |
| <br>  |          |
| <b>Chapter Seven:</b> Conclusions .....   | 74       |
| <br>  |          |
| Illustrations .....   | 77 - 106 |
| Bibliography .....  | 107      |

## LIST OF ILLUSTRATIONS

|              |   |    |
|--------------|---|----|
| Figure 1.1   | Brueghel and Peter Rubens, ‘The Sense of Sight’, from Patrick Mauries <i>Cabinets of Curiosities</i> , 9. ....  | 77 |
| Figure 1.2   | <i>The Museum of Ferrante Imperato</i> , from Patrick Mauries, <i>Cabinets of Curiosities</i> , 20. ....  | 78 |
| Figure 1.3   | <i>The Stoke-Edith Tapestry</i> , from Penelope Hobhouse, <i>Plants in Garden History</i> , 107. ....   | 79 |
| Figure 2.1   | <i>Andre Breton in his Flat</i> , from, Patrick Mauries, <i>Cabinets of Curiosities</i> , 214. ....   | 80 |
| Figure 2.2   | <i>The Surrealist’s Exhibition of 1936</i> , from Patrick Mauries, <i>Cabinets of Curiosities</i> , 217. ....   | 81 |
| Figure 3.1   | Descartes, <i>La Dioptrique</i> (1637), from M. H. Pirenne, <i>Optics, Painting &amp; Photography</i> , 2. ....   | 82 |
| Figure 3.2-3 | Camera Obscuras, 18 <sup>th</sup> century & 1646, from Jonathan Crary, <i>Techniques of the Observer: On Vision and Modernity in the Nineteenth Century</i> , pp. 31 & 39. .... | 83 |
| Figure 3.4   | Johannes Vermeer, <i>The Girl with the Red Hat</i> , c. 1666-67, from Arthur K. Wheelock, JR., <i>Vermeer &amp; the Art of Painting</i> , 120. ....                             | 84 |
| Figure 3.5   | Johannes Vermeer, <i>The Lacemaker</i> , c. 1669-1670, from National Gallery of Art, Washington, <i>Johannes Vermeer</i> , 177. ....  | 85 |
| Figure 3.6   | Johannes Vermeer, <i>The Milkmaid</i> , c. 1658-1660, from National Gallery of Art, Washington, <i>Johannes Vermeer</i> , 109. ....   | 86 |
| Figure 3.7   | Johannes Vermeer, <i>Girl with a Pearl Earring</i> , c. 1665-1666, from National Gallery of Art, Washington, <i>Johannes Vermeer</i> , 167. ....                                | 87 |
| Figure 3.8   | Glen Pinhole Camera (1891), from Eric Renner, <i>Pinhole Photography</i> (second edition), 50. ....   | 88 |
| Figure 4.1   | London Diorama, 1823, from Jonathan Crary, <i>Techniques of the Observer: On Vision and Modernity in the Nineteenth Century</i> , 114. ....                                     | 89 |

|            |  |     |
|------------|--|-----|
| Figure 4.2 | Hiroshi Sugimoto, <i>Polar Bear</i> (1976), from Takaaki Matsumoto, <i>Hiroshi Sugimoto</i> , 70. ....                         | 90  |
| Figure 4.3 | Hiroshi Sugimoto, <i>Earliest Human Relatives</i> (1994), from Takaaki Matsumoto, <i>Hiroshi Sugimoto</i> , 64. ....           | 91  |
| Figure 4.4 | Hiroshi Sugimoto, <i>Cro-Magnon</i> (1994), from Takaaki Matsumoto, <i>Hiroshi Sugimoto</i> , 73. ....                         | 92  |
| Figure 4.5 | Hiroshi Sugimoto, <i>The Electric Chair</i> (1994), from Takaaki Matsumoto, <i>Hiroshi Sugimoto</i> , 163. ....                | 93  |
| Figure 4.6 | Hiroshi Sugimoto, <i>Anne Boleyn</i> (1999), from Takaaki Matsumoto, <i>Hiroshi Sugimoto</i> , 225. ....                       | 94  |
| Figure 4.7 | Hiroshi Sugimoto, <i>The Music Lesson</i> (1999), from Takaaki Matsumoto, <i>Hiroshi Sugimoto</i> , 32. ....                   | 95  |
| Figure 4.8 | Hiroshi Sugimoto, <i>Helicoid, minimal surface</i> , from Thomas Kellein, <i>Hiroshi Sugimoto, Conceptual Forms</i> , 35. .... | 96  |
| Figure 4.9 | Hiroshi Sugimoto, <i>Regulator</i> , from Thomas Kellein, <i>Hiroshi Sugimoto: Conceptual Forms</i> , 95. ....                 | 97  |
| Figure 5.1 | ‘herbarium imaginaire’ exhibit poster .....  | 98  |
| Figure 5.2 | ‘herbarium imaginaire’ exhibit didactic panel .....  | 99  |
| Figure 5.3 | ‘herbarium imaginaire’ botanical images .....  | 100 |
| Figure 5.4 | ‘herbarium imaginaire’ botanical images close-up .....   | 101 |
| Figure 5.5 | ‘herbarium imaginaire’ mural photographs .....   | 102 |
| Figure 5.6 | Pinhole cameras & equipment .....  | 103 |
| Figure 5.7 | UVic Herbarium Collections Manager, Heidi Guest .....  | 104 |
| Figure 5.8 | Herbarium open house and display .....   | 105 |
| Figure 5.9 | Herbarium interior .....   | 106 |

## Chapter One

### Introduction

*“Systems of order are no longer rational but are imaginary...the age of simulation thus begins with a liquidation of all referentials...it is rather a question of substituting signs of the real for the real itself.”* Jean Baudrillard<sup>1</sup>

There are three main concerns that unify the issues that this thesis examines. All of these are drawn from my background and personal predilections and passions. One is that of an artist/photographer investigating and building historically based photography equipment and the practice of picture making with pinhole cameras. The second is that of an art historian and my fascination with human/object relationships. And the third is that of an ongoing and evolving interest in horticulture and ecology and the exploration of human/nature relationships. All combined with an artist's response to materials, to organic matter, and to relationships of meaning and interpretation, resulting in an artistic exhibition along with an academically researched inquiry that have merged in this work.

A number of artists from the early twentieth century up to the present day, have explored the use of 'ready-made' material in their art making. This thesis uses the photographic works of Hiroshi Sugimoto as a case study to examine the present day tradition of using pre-produced material as photographic 'ready-mades' and seeks to explore new avenues of interpretation. Further, I use the creation and delivery of an exhibition titled '*herbarium imaginaire*' as a method of inquiry into the value of the experiential as an important methodology for investigating and creating new ways of knowing and of inspiring new understandings and potential inquiries.

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<sup>1</sup> Jean Baudrillard, "Simulacra and Simulations," from *Selected Writings*, 167.

The main objective of this thesis is to explore the significance of particular photographic images, derived from collected material, and consider how they create alternative meanings. As well, I posit that multiple narratives are produced from collections and displays and it is through these multiple, complex narratives that we envision and understand constructed systems of order and hierarchies of knowledge. From a postmodern perspective, knowledge is founded on the concept of the **sign**, thus, Saussure urged us to consider that “words are but signs, and not of languages, but of sign systems.”<sup>2</sup> We can also include many other sign systems such as natural history museum dioramas, herbarium plant collections and photographs, for example, anything that embodies a message can be defined as a sign of a system and systems represent beliefs of order. In turn, beliefs in hierarchical systems of order have served to shape our relationships with art, science and, importantly for this inquiry, ‘nature’. Using an interdisciplinary approach to this research, I combined the literature and methods of Art History, Cultural Studies, Botanical Studies, Art Theory, and Photography. I study the history of collections to suggest ways of thinking about relationship and representation, and consider ways in which meaning is created and constructed when objects are removed from their natural environments and juxtaposed in collections. Further, I consider how understanding was affected during the time of the ‘Enlightenment’ when objects, once valued for the curiosity and wonder they inspired, were divided, catalogued and categorized into systems of science and art. I enter these inquiries through the application of the photographic process and consider ways in which artists, by means of artistic intervention, inspire a reinterpretation of historically constructed systems. In this

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<sup>2</sup> Callum G. Brown, *Postmodernism for Historians*, 34.

study, I have chosen to investigate and emphasize a consistent focus on photography, museum displays, and scientific collections. In this respect I have found the following studies particularly helpful: Eilean Hooper-Greenhill's book, *Museums and the Interpretations of Visual Culture*, provides a rich interdisciplinary and postmodern approach to museum culture. Michel Foucault's pivotal work, *The Order of Things: An Archaeology of the Human Sciences*, provides the analytical framework for my examination, Patrick Mauries' book, *Cabinets of Curiosities*, provides an in-depth historical overview of the history of collections, specifically the 'cabinets of curiosities' from their early history to their application in the twentieth century, and Takaaki Matsumoto's book *Hiroshi Sugimoto* offers a rich interpretive look at the photographic works of Hiroshi Sugimoto.

Chapter one introduces the history and philosophy of collections, museums and 'cabinets of curiosity' and the primary theme that these, notably Western cultural institutions, have served to construct and inform the past as well as contemporary culture. I review recent research into the production and use of visual culture that questions many of the pedagogic functions of collections and museums such as: *what* is said, and *how* it is said. I cite evidence that supports the idea that the institutional nature of the museum has encouraged the construction of narratives that favour orderly, informative meaning formation. I approach this concept through an examination of the rise in popularity of 'cabinets of curiosities' throughout the early modern period and their eventual transformation into the systematic scientific collections of museums and herbariums. Further, I consider how the development of systems of order corresponded with an analogy of symmetry that served to reinforce the illusion of a universal cohesion. I look

at the heritage of collections such as those of ‘cabinets of curiosities’ in this essay in order to clarify its applicability to individual art of the present period.

In chapter two I examine the rise of beliefs that supported the existence of a mystical relationship (transcending human understanding) between things and ideas that could be expressed by the classification of the physical world, primarily into artificial things and natural things and then into systems of order. The seventeenth-century collector saw the world as an elaborate series of divinely-ordained relationships, in the ordering of which, ‘man’ might sometimes play an active part. The concept of a universal, hierarchical worldview based on categories of reason was one of the fundamental principles of the seventeenth-century Enlightenment. It marked the rise of gardens and plant collectors like the Tradescants and the development of the science of botany. In 1735 Linnaeus published the first edition of *The System of Nature*, establishing a new structure of reality based on systems of order.

In the second part of chapter two I discuss the resurgence of the ‘theatre’ of imitation between art and nature that was characteristic to cabinets of curiosities as it occurred in the twentieth century. This was expressed most dramatically through the Surrealist artists, notably Andre Breton and Marcel Duchamp. The Surrealist theme of questioning the status of reality served to reunite borderline areas such as art and science that had been separated by history. The correspondence between the assemblage artist and the cabinet of curiosities affirms the “two major principles that govern relations between man and the world – the sense of continuity and that of discontinuity.”<sup>3</sup> This premise is highlighted by Surrealist’s identifying the found object as a point of infinite

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<sup>3</sup> Patrick Mauries, *Cabinets of Curiosities*, 236.

transformation. This chapter serves as a bridge to the discussion in chapter four of the photographic works of Hiroshi Sugimoto, specifically his use of objects housed in formal collections such as wax museums and the natural history museum dioramas that were the focus of his *Dioramas* series that serves as my case study. Chapter three introduces the history of photography specifically the development of the early camera obscura and pinhole cameras. From its earliest beginnings in the fifth century BCE in China, throughout the developments made by Leonardo da Vinci and the insights of Kepler's and Descartes's optics and their models of vision, the camera obscura has been a vital instrument of scientific inquiry. The camera obscura was defined as an instrument of 'reason', able to create a semblance of reality, in particularly through the relationships of tone, light, and colour. In this chapter I discuss the influential role played by the camera obscura in the paintings of early modern Delft artist Johannes Vermeer and his use of the camera obscura as a tool of scientific investigation and an artistic tool for the expression of the phenomena of light, as he sought to make real the vision of the inaccessible. This chapter serves as a foundation for chapter four which focuses on Hiroshi Sugimoto and Vermeer's influence on his photographic explorations, as well as chapter five which discusses the photography exhibition '*herbarium imaginaire*' which uses historically based pinhole photography equipment.

In chapter four I examine some of the diverse issues surrounding contemporary museum pedagogy specifically how it is defined through the narratives constructed by museum displays such as natural history dioramas. As well, this chapter features the photographic works of Hiroshi Sugimoto, who represents the artist case study for this research. Chapter five features the photographic exhibition, '*herbarium imaginaire*'.

## Chapter Two

### The Nature of Collections

*“There is nothing more tentative, nothing more empirical (superficially, at least) than the process of establishing an order among things...”* Michel Foucault<sup>4</sup>

*“The collection is the unique bastion against the deluge of time.”*  
Jean Baudrillard<sup>5</sup>

What is collecting? Why are collections created? How does a permanent collection operate, and what is the end result given the context of changing technologies and postmodern interpretations? Do collections and the inherent concerns associated with them – ownership, value, status, history, identity, religion, science, and memory, to name but a few – tell us something about our shared ‘humanity’? It is argued that the collective past of contemporary Western culture is molded and preserved in museums, scientific storehouses, and heritage architecture. In turn, our collective memory is constructed by the collections molded and preserved in these institutions. Recent research into the production and use of visual culture examines many of the important questions regarding the pedagogic functions of collections and museums such as: *what* is said, and *how* it is said. In *Museums and the Interpretations of Visual Culture*, Eilean Hooper-Greenhill considers museum pedagogy to be based on the idea of the possibility of the realization, through objects, of universal laws that could be taught in the same way at all times and in all places.<sup>6</sup> Recently a considerable amount of interest has developed in the history of

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<sup>4</sup> Michel Foucault, *The Order of Things: An Archaeology of the Human Sciences* (1970; repr. London: Tavistock, 1986), xix.

<sup>5</sup> Jean Baudrillard, ‘The System of Collecting.’ In, *The Cultures of Collecting*, (Ed.), John Elsner and Roger Cardinal, 1.

<sup>6</sup> Eilean Hooper-Greenhill, *Museums and the Interpretation of Visual Culture*, 126.

collections and museums, resulting in new bodies of research and discussion yielding a far richer understanding of the social, cultural, and institutional significance of this history than had previously existed.

Collecting, classifying, and displaying ordered, especially sequential and evolutionary material, was fundamental to the development of museums, as well as a variety of disciplines including anthropology, archaeology, natural history, and botany. By the nineteenth-century the institution of the museum had become emblematic of the modern period. One of the characteristics of the modern period has been the construction of master narratives, grand narratives, and universal stories, that were intended, Hooper-Greenhill argues, to “enable mastery of the messy and complicated real world.”<sup>7</sup>

Museums and their counterparts are among the most publicly visible “performances of the classifications” produced representing what Sharon Macdonald, in *A Companion to Museum Studies*, describes as “externalized forms of collective memory.”<sup>8</sup> According to Susan Crane, museums, in a theoretical sense, “represent an organizational principle for the content of cultural identity and scientific knowledge.” According to Crane we all share a “museal consciousness” that is defined by a shared understanding of the “significance of collecting, ordering, representing, and preserving information in the way that museums do,” a sensibility, Crane states, that has become more common in modernity than previously.<sup>9</sup> Thus, it is understood that museum objects are never *just* things, but are bound up with the understanding of objects outside the

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<sup>7</sup> Hooper-Greenhill, 24.

<sup>8</sup> Sharon Macdonald (ed.), *A Companion to Museum Studies*, 14.

<sup>9</sup> Susan Crane, *Museums & Memory*, 2.

museum and of the “nature of the subject and subjectivity.”<sup>10</sup> Museums inform not just the way in which the objects they contain are interpreted, but also what is outside of them.

It is generally thought that the processes of collection and display is an early modern phenomenon originating in cabinets of curiosities and culminating in the galleries and museums mostly attributed to contemporary Western culture. However, it is known that these practices are actually a cross-cultural phenomenon found in many times and places.<sup>11</sup> The intention here is not to provide an in-depth history of collecting but to address how acts of collecting, displaying, and the resulting systems of order, have had the effect of “abstracting objects from the overall flow of life”<sup>12</sup> resulting in the construction of modes of subjectivity. As well as examining how the establishment of the ‘theatres’ of curiosity and wonder known as ‘cabinets of curiosities’, led to the development of museums, herbariums, and gardens as primary institutions for housing and codifying the objects held within their collections and how this characterized the sense that there exists a unified culture that embodies a shared collective knowledge and understanding about nature and our environment.

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<sup>10</sup> Crane, 15.

<sup>11</sup> Chris Gosden, ‘Making and Display: our aesthetic appreciation of things and objects,’ From, Renfrew, Colin, De Marrais and Gosden (Eds.), *Substance, Memory, Display, Archaeology and Art*, 35.

<sup>12</sup> Marjorie Swann, *Curiosities and Texts: The Culture of Collecting in Early Modern England*, 8.

## *Early Collections*

Susan Pearce characterizes that practice of collecting is a basic urge or instinct, a practice that is a fundamental, although widely varied, human activity. Well-known modes of collecting such as ‘hoards,’ ‘grave goods’ and accumulations of all kinds is an activity that is considered to be deeply imbedded in our collective prehistory and can be traced in detail through the Iron and Bronze Ages back as far as the Neolithic communities of around 3000 BCE.<sup>13</sup> This practice eventually led to accumulations connected to temple sites and then religious houses, whose role as repositories was understood throughout the classical world. With the ‘barbarian infusions’ from northern Europe around 400 CE came the ideas of hoarding and depositing treasure, which generated the establishment of treasure houses across Europe, some belonging to churches and religious houses, and others in a quasi-religious way, to royal and princely families.<sup>14</sup> The early practices of collecting became the prologue to the origins of the established collections and the museums that were to follow, contributing powerful ideas about the status of objects as treasure, relics as being able to connect the living with the dead, objects as dedications, and accumulation as a way of manipulating social capital, all of which have served to shape the thinking about the nature of museums.<sup>15</sup> This was the inheritance of the Renaissance nobility and their associates, beginning primarily in Italy and then developing in many areas of Europe where the inauguration of the ‘collection-

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<sup>13</sup> R. Bradley, *The Passage of Arms: An Archaeological Analysis of Prehistoric Hoards and Votive Deposits* (Cambridge UK: Cambridge University Press, 1990), quoted in Susan M. Pearce, *Museums, Objects and Collections: A Cultural Study* (Leicester and London: Leicester University Press, 1983) 91.

<sup>14</sup> Susan M. Pearce, *Museums, Objects and Collections: A Cultural Study*, 91.

<sup>15</sup> *Ibid.*, 91.

holding mechanism' of that age came to be crudely lumped together under the term 'museum'. To Pearce, the modes of collecting that stem from the early phases of human history continue to be the staples for much of the collecting activity up to and including the present day.<sup>16</sup> One simple definition of collecting put forward by P. Alsop and quoted by Susan Pearce states that: "to collect is to gather objects belonging to a particular category the collector happens to fancy...and a collection is what has been gathered."<sup>17</sup> This, however, does not explain the variety and important differences and motives for the different practices of gathering or the accumulation of material things. Importantly, this does not shed light on the specific cultural manifestations of museums and related forms of collecting practices, such as herbariums, that emerged in Western culture.<sup>18</sup> "Collecting," states Sharon Macdonald, "is as much about creating a rationale as filling it." To which, museums play an important role in institutionalizing this conception of a "collection as being more than – and different from – the sum of its parts."<sup>19</sup> By forming collections museums recontextualize objects by virtue of removing them from their original contexts and placing them in the new context of the collection.<sup>20</sup> It is this recontextualization of objects primarily in terms of other objects that is a fundamental aspect of the collecting legitimized by the museum. In a collection, objects are given additional significance specifically by virtue of being part of the collection and are

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<sup>16</sup> Pearce, 92.

<sup>17</sup> J. Alsop, *The Rare Art Traditions: A History of Collecting and Its Linked Phenomena* (New York: Harper and Row, 1982), 70. Quoted in Pearce, *Museums, Objects and Collections*, 48.

<sup>18</sup> Macdonald, *Museum Studies*, 81.

<sup>19</sup> *Ibid.*, 82.

<sup>20</sup> *Ibid.*, 82.

notably transformed in meaning from their pre-collection existence.<sup>21</sup> Collecting is considered to be an activity that is charged with cultural and moral significance. Macdonald describes this activity as “the performance of a certain form of human-object relations: a particular approach to the material and social world.”<sup>22</sup>

Another important and illuminating aspect of collecting to be considered is that of the collector’s aesthetic disposition engaging in an “artist’s play with his world.”<sup>23</sup> Pearce makes particular reference to this aspect of collecting noting that “the kind of object collected is not important, what matters is the reframing of the object within the collection, as an act of formal admission from one state to another.”<sup>24</sup> In a certain sense objects have rites of passage and this comes when they enter the collection system. This process of dividing, comparing and contrasting, in whatever kind of collection, can be either rational or idiosyncratic.<sup>25</sup> Crane describes the museum as an archive that stores memories and holds the material manifestations of cultural and scientific production as records. A storehouse, Crane argues, of “articulated memories removed from the mental world and literally placed in the physical world.”<sup>26</sup> Similarly, like an archive, it has its own sense of organization and potential to foster myriad random encounters with the objects of knowledge rather than the singular linear narratives that tend to be formed from it. Susan Crane, citing Wolfgang Ernst, argues that the institutional nature of the

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<sup>21</sup> Macdonald, 82.

<sup>22</sup> Ibid., 83.

<sup>23</sup> Pearce, 52.

<sup>24</sup> Ibid., 52.

<sup>25</sup> Ibid., 52.

<sup>26</sup> Crane, 2.

museum has encouraged the “construction of narratives that favour orderly, informative meaning formation.”<sup>27</sup>

Systematic collecting is a specific form of collecting that depends upon principles of organization which are perceived to have an external reality beyond the specific material under consideration.<sup>28</sup> This form of collecting is derived from general principles deduced from the broad mass of related material derived through the operation of *observation* and *reason*; these general principles influence ideas about the nature of the physical world and of the nature of humans. Systematic collecting, therefore, works not by the accumulation of samples, as other forms of collecting does, states Pearce, “but by the selection of examples intended to stand for all the others of their kind and to complete a set.”<sup>29</sup> The emphasis is upon classification “in which specimens are extracted from their context and put into relationships created by seriality.”<sup>30</sup> This is the fundamental difference that emerges between systematic collections housed in museums and herbariums and other modes of collecting.

### *Cabinets for the Curious*

The image most associated with the museum is that of storehouse, repository of memory, and the location of collections that represent the basis of scientific and aesthetic value and cultural or national identity. The image of the storehouse also draws on the medieval and early modern treasure troves and curiosity cabinets that prefigured the museum in their

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<sup>27</sup> Wolfgang Ernst, cited in Susan Crane, *Museums & Memory*, 4.

<sup>28</sup> Pearce, 87.

<sup>29</sup> *Ibid.*, 52.

<sup>30</sup> Macdonald, 87.

assemblages of valuable objects. Curiosity cabinets of the early modern period sought comprehensiveness, striving to encompass “the macrocosm in the microcosm” of a cabinet, so that scholars could learn from firsthand contact with their objects of study. The changing sensibilities of the Enlightenment and Romantic thinkers, who added historical value to economic, scientific, and aesthetic values in their consideration of objects, prompted the construction of museums for the preservation of the past.<sup>31</sup>

Throughout the history of collecting those involved in the act of collecting were basically motivated by wonder and curiosity and applied themselves to a considerable range of research activities and adventures in that pursuit. More recently, the study of collecting has become an activity that investigates this cultural and social practice as a medium through which individuals and communities created and create self-identity.<sup>32</sup> Collecting, in contemporary Western culture, is described as the process through which objects are put into meaningful relationships that are seen as producing knowledge, value, aesthetic and prestige. Some of the earliest collections were housed in what came to be known as cabinets of curiosities. The very term ‘collection’ and ‘collector’ as we now use them were specifically products of late Elizabethan and Stuart England. According to Marjorie Swan by 1651 the word ‘collection,’ used since the mid-fifteenth century to refer to gathered historical or literary materials, had also come to designate an assemblage of physical things (scientific specimens, objects of interest, works of art), while the term ‘collector,’ first used in 1582 to refer to a literary compiler, similarly came to refer to an individual “who collects works of art, curiosities, etc.”<sup>33</sup> This expanding

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<sup>31</sup> Crane, 4.

<sup>32</sup> Ken Arnold, *Cabinets for the Curious: Looking Back at Early English Museums*, 2.

<sup>33</sup> Swann, 1.

range of signification reflected the proliferation of forms of collecting in early modern England. Ambitious courtiers purchased large quantities of foreign art, employing agents on the continent to procure paintings and statues for their burgeoning collections. Lower down the social scale, collectors in seventeenth-century England assembled cabinets of curiosities rather than collections of art.<sup>34</sup> Sir Francis Bacon famously described the scope of such a cabinet:

First, the collecting of a most perfect and general library, wherein whosoever the wit of man hath heretofore committed to books of worth... may be made contributory to your wisdom. Next, a spacious, wonderful garden, wherein plant the sun of divers climate, or the earth out of divers moulds, either wild or by the culture of man brought forth, may be... set and cherished: this garden to be built about with rooms to stable in all rare beasts and to cage in all rare birds; with two lakes adjoining, the one of fresh water the other of salt, for like variety of fishes. And so you have in small compass a model of the universal nature made private. The third, a goodly huge cabinet, wherein whatsoever the hand of man by exquisite art or engine has made rare in stuff, form or motion; whatsoever singularity, chance, and the shuffle of things hath produced; whatsoever Nature has wrought in things that want life and may be kept; shall be sorted and included. The fourth such a still-house, so furnished with mills, instruments, furnaces, and vessels as may be a palace fit for a philosopher's stone. Francis Bacon, *Gesta Grayorum* (1594) (quoted in Hooper-Greenhill, 1992:78)

The seventeenth-century painting *The Sense of Sight* (Figure 1.1), by 'Velvet' Brueghel and Peter Paul Rubens, is one of a series titled *The Five Senses*, which was commissioned in 1617 by, then governors of the Netherlands, Albert and Isabella. Archduke Albert was the brother of Rudolf II and his wife Isabella the daughter of Philip II of Spain. Although their collection has long been dispersed the paintings remain in the Prado in Madrid. Frank Mauries describes these paintings as "great allegorical canvases... a sort of pictorial equivalent of the cabinets, representing the same desire to

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<sup>34</sup> Swann, 1.

bring all knowledge into a single space.”<sup>35</sup> *The Sense of Sight* contains *naturalia*, shells, scientific instruments (a globe, armillary sphere, compasses, and telescopes), coins, jewels, antiquities, Roman statuary, and works of art.<sup>36</sup> Similarly, in the catalogue frontispiece of *Dell’historia naturale* (1599), for Ferrante Imperato’s museum in Naples, are found books, botanical and zoological specimens, as well as jars that are crowded together in carefully arranged profusion, shells and marine creatures, and an enormous stuffed crocodile that is suspended from the ceiling (Figure 1.2). Imperato was known as an apothecary and he used his collection, which is considered to be one of the earliest representations of cabinets of curiosities, for research and for the manufacturing of medicines. In the woodcut from Imperato’s *Dell’historia naturale*, a guide, possibly Imperato himself, points out particular items to visitors.<sup>37</sup>

The aim of the earliest cabinets of curiosities was threefold: accumulation, definition, and classification. A treasure such as that of the abbey church of St. Denis offered the image of an ordered universe in miniature, with the most prominent relics placed at the centre and surrounded by those of secondary importance.<sup>38</sup> The founding principles at the heart of cabinets of curiosities was not merely to define, discover and possess the rare and the unique, but also, and at the same time, to inscribe them within a special setting which would instill in them layers of meaning.<sup>39</sup> The display panels, cabinets, cases, and drawers were a response not only to a desire to preserve, or to conceal from view, but also to a parallel impulse to slot each item into its place in a vast

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<sup>35</sup> Patrick Mauries, *Cabinets of Curiosities*, 1.

<sup>36</sup> Mauries, 1.

<sup>37</sup> *Ibid.*, 10.

<sup>38</sup> *Ibid.*, 25.

<sup>39</sup> *Ibid.*, 25.

network of meanings and correspondences. In time the collections became spaces that were progressively more fragmented and kaleidoscopic, states Mauries, “where every element from the central table to the cabinet doors, from the window surrounds to the ceiling design, was pressed into service in the pursuit of a single and all-embracing scheme of interpretation and aesthetics.”<sup>40</sup> Every aspect of the cabinet of curiosities was to become codified and invested with meaning, with analogy and symmetry serving to reinforce the illusion of cohesion. Its history began with the notion of a *correspondence*, often magical in nature, between man and nature, and between the microcosm and the macrocosm. This idea started to disintegrate when this correspondence was revealed as an impossibility, when, states Mauries, “the ordered space of the cabinets lost their claim to reflect the multiplicity of the real world, but could merely boast that it contained a few remnants of it.”<sup>41</sup> The term ‘cabinet of art and curiosities’ came into use gradually most often designating an enclosed space, often cramped and sometimes hidden, characterized by the singular use it made of the space available and its scholarly array of objects which were brought together primarily to be studied rather than put on display. In fourteenth-century France, the precursors of these cabinets were known as *estudes*, and in Italy in the fifteenth and sixteenth centuries they became known as *studioli*.<sup>42</sup> By around 1550, the *kunstkammer* (chamber of art) appeared in Germany, to be joined soon afterwards by *wunderkammer* (chamber of marvels).<sup>43</sup> Upon entering a cabinet of curiosities the first impression was often one of a “world in miniature, an accumulation of objects in such profusion that it was difficult to find one’s way around it, there was no beginning and no

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<sup>40</sup> Mauries, 25.

<sup>41</sup> *Ibid.*, 35.

<sup>42</sup> *Ibid.*, 50.

<sup>43</sup> *Ibid.*, 50.

end.”<sup>44</sup> Collections were usually organized according to what were (and in many ways still are) regarded as fundamental distinctions, and these formed the basis upon which the catalogues, which most collections possessed, were arranged. Beyond the unrestrained eclecticism of acquisition, a quest for unity emerged that was strongly attributed to the works of Samuel Quiccheberg.<sup>45</sup> This early publication has been described as the earliest museological tract, which set out the correct system of museum classification as it was seen from the mid-sixteenth to the early eighteenth-century. Quiccheberg identified five main courses of collection which relate to the whole universe: “paintings and sacred objects; objects made of inorganic material; organic materials representing the three realms of earth, water and air; and material glorifying the founder.”<sup>46</sup> Or, as Samuel Quiccheberg described in c.1560:

A person of moderate fortune will thus, through the nature of the place where he finds himself and through his intentions and interests, most profitably accumulate different kinds of seeds, or metal, or small creatures, or old coins, or a collection of pictures, all without incurring great costs. The impression is not to be given that there is a lack of space, either broad or narrow, for all this to be stored. There is much that can be rolled up or folded and stowed away in slim cabinets, small cupboards or boxes, but for which, when they are otherwise stretched out over the broadest walls or exhibited on the widest tables or on measured display stands, there would scarcely be room enough. But here, in addition to these cupboards, chests, wall cabinets, tables and display stands, one must also call to mind that for these practical purposes storage magazines may be of great use, as well as portable boxes with square compartments, and small cupboards with folding doors, and likewise books with folding covers, and finally stacked chests containing sundry works of art and prominently labeled.<sup>47</sup>

These collections of curios were assembled to act as microcosms representative of an ideology of a universal nature, through the combined activities of assembly and

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<sup>44</sup> Ibid., 69.

<sup>45</sup> Mauries, 166.

<sup>46</sup> Pearce, 95.

<sup>47</sup> Samuel Quiccheberg, quoted in Patrick Mauries, *Cabinets of Curiosities*, 167.

contemplation which were considered to be acts of discovery and definition as well as ‘mystical’ exercises. Although these collectors considered the nature of the world to be an intricate series of divinely ordained relationships, it was considered that mankind had the ability to play an active part through the activities of alchemy and esoteric wisdom of which the philosopher’s stone is so emblematic.<sup>48</sup> The act of collecting was seen as a means of bringing together newly accumulated objects for enjoyment and discovery.<sup>49</sup> These collections were not merely randomly accumulated things.<sup>50</sup> While the specific organizing principles by which objects were brought together might vary, these were themselves governed by ideas of objects as having intrinsic meanings that had been laid down during the Creation, and of the collection as ideally constituting a ‘mirror of nature’ that would aid in the interpretation of the divine text.<sup>51</sup> According to Foucault, various notions of “resemblance” now unfamiliar to us were central to sixteenth-century epistemology; and collections of objects allowed for the bringing together of things that could be arranged according to notions of meaningful proximity, juxtaposition, or alignment that might indicate underlying symbolic resemblance.<sup>52</sup> Curiosities, which became a special interest of collectors in this period,<sup>53</sup> were those things “new, unknown or unseen, that needed to be integrated into the existing perception of the world.”<sup>54</sup> They were also seen, primarily within the confines of Western Christian culture, as “evidence

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<sup>48</sup> Pearce, 95.

<sup>49</sup> Macdonald, 84.

<sup>50</sup> Hooper-Greenhill, *Museums and Shaping Knowledge*, 137.

<sup>51</sup> Macdonald, 84.

<sup>52</sup> Foucault, *The Order of Things*, 130.

<sup>53</sup> Pomian, K. *Collectors and Curiosities: Paris and Venice, 1500-1800*, 27.

<sup>54</sup> Prosler, M. *Museums and Globalization* (1996), 28.

of God's power to alter the course of nature,"<sup>55</sup> and thus "as potentially particularly telling signs of divine logic."<sup>56</sup> The "cult of curiosities," states Mauries, "was a cult of summation, of the sum total of things, of juxtaposition and addition repeated *ad infinitum*."

The desire of the early collectors was to grasp and catalogue all that was known, establishing collections that continue to influence the way in which the world is perceived. These collectors, states Pearce, "sought to make manifest the link between the physical reality understood in the light of the other," by adopting the "compelling pomp of classical iconography, glorified by art."<sup>57</sup> It was believed that a mystical relationship, that transcended human experience, existed between things and ideas that could be expressed by the classification of the physical world, primarily into artificial things and natural things, and then into sub-groupings. These groupings were such things as "the music of the spheres in the compass of a single room, giving a visible presence to a transcendent reality."<sup>58</sup> Pearce describes the later eighteenth-century as a neo-Platonist world seen through "Christian stained glass" where "the coloured lights will drop away and the vision of understanding clarify...where it had become possible to see the world in a properly curated grain of sand."<sup>59</sup>

In this chapter I have introduced the history and philosophy of collections from the early church reliquaries to those housed in the 'cabinets of curiosities', which were

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<sup>55</sup> Shelton, A. 'Cabinets of Transgression: Renaissance Collections and the Incorporation of the New World,' (pp. 184-85). In J. Elsner and R. Cardinal, (Eds.), *The Cultures of Collecting*, Pp.177-203.

<sup>56</sup> Macdonald, 84.

<sup>57</sup> Pearce, 98.

<sup>58</sup> *Ibid.*, 98.

<sup>59</sup> *Ibid.*, 98.

mainly the domain of European royalty and aristocracy. I have examined the idea that, although founded on principles of curiosity and wonder, collections grew to reflect the rationality of the Enlightenment, whose philosophy was grounded in a concept of a universal, hierarchical system of order. My examination of the rise in popularity of cabinets of curiosities throughout the early modern period and their eventual evolution into the systematic scientific collections of museums and herbariums relates to later chapters. The early modern collectors believed that a mystical relationship existed between things and ideas, and that the nature of ideas could be expressed by the classification of the physical world. I have discussed how the development of systems of order corresponded with an analogy of symmetry that served to reinforce the illusion of a universal cohesion, and how this development served to establish an anthropomorphically based philosophy of the human/nature relationship that is still the mainstay of Western contemporary culture. My examination of the rise in popularity of cabinets of curiosities throughout the early modern period and their eventual evolution into the systematic scientific collections of museums and herbariums relates to later chapters. In chapter two I briefly discuss one of the most noted artistic movements of the twentieth century, Surrealism, which reintroduces important aspects of the whimsical nature of cabinets of curiosities, as well, the topic reinforces issues in the chapters discussing the photographic works of Hiroshi Sugimoto and the photographic exhibition, '*herbarium imaginaire*'.

## Chapter Three

### From Systems of Order to Surrealism

#### *Early Modern Collections: Museums, Plant Collectors and the Age of Gardens*

During the Renaissance the passion for collecting continued to develop among the educated classes extending the sites of collections away from the specifically royal (the regal treasure) or religious (collections of saint's relics), a fact which reflects both the Renaissance stress on the importance of the individual and the development of a mercantile economy, the precursor to contemporary capitalism, with which it was linked. At this time aristocratic collections were also influenced by the ideology and scope of Renaissance humanism. The humanists held that European society and culture should be modeled on the ideas and values of Greek and Roman antiquity.<sup>60</sup> In early modern England this humanist idealization of the past coexisted with an insatiable thirst for novelty and wonder.

Throughout Renaissance Europe, the desire for new goods had led to commercial contact with Asia, the Middle East, Africa, and the Americas, resulting in an influx of foreign objects that served to whet the cultural appetite for exotica from distant lands.<sup>61</sup> By 1674, John Evelyn wrote of the profound effect of non-European objects on English material culture stating: "Asia refreshes us with Spices, recreates us with Perfumes, cures us with Drougs, and adorns us with Jewels: Africa sends us Ivory and Gold; America,

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<sup>60</sup> Swann, 20.

<sup>61</sup> Ibid., 23.

Silver, Sugar and Cotton.”<sup>62</sup> During this era of burgeoning international trade, collecting was an important way of making sense of, and gaining capital from the exploration and exploitation of far off lands. Assembled and displayed, objects from distant places “substantiated relations of knowledge and power that were distinctive to the period of exploratory voyages.”<sup>63</sup> Collections that contained objects from foreign lands were to some degree “exhibitions of what [was] to be effaced, repressed, or subjected to new and more rigorous mechanism of control,” a representation, states Swann, of “the inclusiveness of the European view of the world and its facile ability to incorporate and domesticate potentially transgressive worlds and customs.”<sup>64</sup> The accelerated rise of museums during the early modern period corresponded to the decline of the intellectual and institutional power of religion to provide adequate narratives or shed understanding on the abundance of new knowledge.

According to Foucault, “during the classical age signs became a way of organizing things... during the seventeenth century, history became natural.” He states:

The documents of this new history were not other words, or texts, but unencumbered spaces in which things were juxtaposed; herbaria, collections, gardens. The place of history was a non-temporal rectangle in which, stripped of all commentary, of all enveloping language, creatures presented themselves one beside the other, their surfaces visible analyzed, bearers of nothing but their own individual names.<sup>65</sup>

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<sup>62</sup> John Evelyn, *Navigation and Commerce*, p. 9-10. Quoted in Swann, *Curiosities*, 23.

<sup>63</sup> Nicholas Thomas, *Entangled Objects: Exchange, Material Culture, and Colonialism in the Pacific*, 141; quoted in Swann, *Curiosities*, 23.

<sup>64</sup> Steven Mullaney, *Strange Things, Gross Terms, Curious Customs: The Rehearsal of Cultures in the Late Renaissance*,” pp.77-78; Anthony Alan Shelton, *Cabinets of Transgressions: Renaissance Collections and the Incorporation of the New World*, p. 203. Amy Boesky similarly suggests that early modern collections signified “the West’s capacity to tame and culture the exotic” (Outlandish – Fruits: Commissioning Nature for the Museum of Man,” 310) cited in Swann, *Curiosities and Texts*, 24.

<sup>65</sup> Foucault, *The Order of Things*, 131; quoted in Hooper-Greenhill, *Museums and the Shaping of Knowledge*, 137.

The concept of a universal, hierarchical worldview based on categories of reason was one of the fundamental principles of the seventeenth century Enlightenment. These concepts of order and reason were manifest in the proliferation of collections, botanical gardens and menageries among the nobility and bourgeois intellectual classes of England and Europe. The collection of *naturalia* developed in England during the seventeenth-century beginning with, among others, John Tradescant who served as gardener to various members of the aristocracy including King Charles I. Tradescant traveled widely in Europe and North Africa collecting plants and bringing many new species back to England. He is known to have established a *physic garden* at Lambeth, in south London. Around 1625 his son also called John, who traveled as far as Virginia in the search for specimens for the garden, joined him. The Tradescants also collected curiosities such as minerals and shells and their entire collection was known as ‘the Ark,’<sup>66</sup> which was considered to be one of the most impressive private collections in Europe. Towards the end of his life Tradescant founded a museum of curiosities, which he opened to the public. His son compiled the catalogue in collaboration with Elias Ashmole (1617-92), who was to inherit the collection; expanding it with items he had himself collected before offering it as a gift to the University of Oxford. The university constructed an elaborate and expensive building to house it, which was inaugurated as the Ashmolean Museum in 1683.<sup>67</sup> In the introduction of his catalogue, published in 1656, John Tradescant makes a simple distinction between *natural* and *artificial* (man-made) material:

Now for the *materialls* themselves I reduce them into two sorts; one *Naturall*, of which some are more familiarly known and named amongst us, as divers sorts of Birds, foure-footed Beasts and Fishes, to whom I have given usual

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<sup>66</sup> Mauries, 141.

<sup>67</sup> *Ibid.*, 144.

*English* names. Others are less familiar, and as yet unfitted with apt *English* termes, as the shell-Creatures, Insects, Mineralls, Outlandish-Fruits, And the like, which are part of the *Materia Medica*; (Encroachers upon that faculty, may try how they can crack such shells). The other sort is Artificialls, as Utensills, Householdstufte, Habits, Instruments of Warre used by several Nations, rare curiosities of Art, etc. These are also expressed in English (saving the Coynes, which would vary but little if Translated) for the ready satisfying whomsoever may desire a view thereof.<sup>68</sup>

Sir Thomas Browne had established a *Musaeum clausum, sive bibliotheca abscondita*, which may be considered as the literary equivalent of the cabinet of curiosities. It was described in its subtitle as “containing some remarkable books, antiquities, pictures and rarities of several kinds scarce or never seen by a man now living.”<sup>69</sup> Like Browne, but half a century earlier, the first collectors of curiosities were chiefly physicians, apothecaries, surgeons and druggists. In Italy in the second half of the sixteenth-century, collectors in Bologna, Naples and Verona, were inspired by a passion for cataloguing and classification, and an obsession for the meticulous description and precise understanding of nature.<sup>70</sup> During this time the collectors did not forfeit their connections to the realms of superstition and embraced with eagerness the taste of the spectacular, the freakish and the bizarrely unique. There was a constant vacillating between scientific ambition and aesthetic nostalgia, a striving towards a discriminating approach while constantly lapsing into the world of imagination. “The world is to me but a dreame, a mockshow,” declared Sir Thomas Browne in *Religio Medici*, and “wee all therein but Pantalones, and Anticks to my severe contemplation.”<sup>71</sup> Paradoxically, argues Mauries, this passion for objects, for the tangible and material, “tended to induce a sense

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<sup>68</sup> Tradescant (1656: a2-a3). Quoted in Pearce, 95.

<sup>69</sup> Mauries, 148.

<sup>70</sup> *Ibid.*, 148.

<sup>71</sup> *Ibid.*, 165.

of *loss of reality*, a heightened awareness of the largely fugitive, illusory nature of appearance and reality,”<sup>72</sup> and that “the cult of curiosities was imbued with melancholy.” Browne, like Francesco de Medici before him, was “*saturnine* of temperament” and “prey to leaden *humours*, meditative by nature and obsessed with the passage of time and the pursuit – as futile as it was unending – of knowledge.”<sup>73</sup>

Initially the word ‘cabinet’ referred to a cupboard with shelves and drawers that held small physical objects, but eventually the field of curiosity became extended to encompass a new domain of collecting. No longer just a matter of rarities, novelties, or superfluous decoration, it acquired a broader space. In seventeenth-century England the meaning of the word was used more broadly referring to the architectural space that contained the curiosities such as that of a summerhouse or bower in the garden. In 1671 John Evelyn described in detail his reaction to the home of physician Sir Thomas Browne, “whose whole house and garden [is] a paradise and cabinet of rarities, and that of the best collection, especially medals, books, plants, and natural things.” This close relationship of house and garden, which was so admired in England in the late seventeenth century, had first made its appearance as part of the ‘cabinet of the world’ in Renaissance Europe, and especially in Italy. The garden was a ‘potent metaphor’ in Renaissance Italy. Charles VIII, on conquering Italy after the fall of the Medici, had this to say of the gardens that he saw in Naples. “You could not believe the beautiful gardens which I saw in that town for, on my faith, it seems that the only thing missing was Adam and Eve to make an earthly paradise, they were so beautiful and full of good and

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<sup>72</sup> Mauries, 165.

<sup>73</sup> *Ibid.*, 165.

remarkable things”.<sup>74</sup> The gardens of the sixteenth-century had come to signify a new sense of possibilities inherent in a leisured and cultivated existence, living life with a sense of style. The harmonies of nature were evoked in new plans for gardens, which embodied a change from closed to open planning.<sup>75</sup> The gardens were filled with classical antiquities and statues that acted as ‘memory images’ for the classical past, and plants and animals were used as an earthly representation of the lost world of the Garden of Eden.<sup>76</sup>

The palace gardens of Lorenzo de Medici at Poggia Cajano were known to have contained not only rare plants but also buildings to display natural rarities and curiosities, along with peacocks, parrots, apes, and a giraffe among other ‘exotic beasts’. In these gardens and palace buildings there was an emphasis on unity, harmony, and completeness, an identifiable effort to articulate a unity with art and nature by representing both symbolic and physical links between different material elements and different spheres of creation. The example of the palace-garden was followed in Elizabethan England at Theobalds. Elizabeth’s Lord Treasurer, Burghley, planned a “conspectus of the universe, the nations, of England and her governors, considered as a setting for England’s Queen.”<sup>77</sup> The royal receiving room of the palatial house was described as a “grotto, with water streaming out of a rock, the zodiac with sun and moon on the ceiling, and on the wall, six trees hung with the heraldic shields of England’s nobility.” The regal presentations of Theobalds were “embodied in its transformations of the natural world, which were presented as the perfected cosmos that encapsulates all the

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<sup>74</sup> Swann, 128.

<sup>75</sup> *Ibid.*, 128.

<sup>76</sup> *Ibid.*, 128.

<sup>77</sup> Comito, 1971: 498, quoted in Swann, *Museums*, 130.

greatness of history”<sup>78</sup> (Figure 1.3). The Renaissance world, states Foucault, with its “centripetal universe folded in upon itself” was pictured and represented as a view which simultaneously included and represented the subject.<sup>79</sup>

After 1750, the collector of curiosities, as had been represented by Sir Thomas Browne, was to give way to the *Encyclopaedists*, who dismissed, what was deemed to be, the naivety and archaic approach of their predecessors. The collectors of the past were now relegated to the past and Linnaeus, whose first edition of *The System of Nature* had been published in 1735, Cuvier and Buffon took their places.<sup>80</sup> Within the context of this *new structure of reality*, objects that had previously been positioned together or juxtaposed in the cabinet of curiosities now had to be reconsidered. It became necessary to sort, arrange, and catalogue objects to a new scale of values. The first was to abandon the confusion of *naturalia* and *artificialia*, and to separate works of art from works of science. Then to create a distinction within the category of works and between what constituted ‘fine’ and ‘decorative art’, the former being considered a superior form of craftsmanship distinguished by the excellence and virtuoso skill of its execution. The first thing to vanish was the *syntax* of the cabinet. With the disintegration of the “impure space of the cabinet of curiosities in the second half of the seventeenth-century,” states Mauries, “there emerged the topography of art... as well as a new nomenclature and bounds of taste which were to remain unquestioned for the two following centuries.”<sup>81</sup> This emergence of the compartmentalization of disciplinary boundaries gave rise to an

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<sup>78</sup> Swann, 130.

<sup>79</sup> Foucault, 17.

<sup>80</sup> Mauries, 189.

<sup>81</sup> *Ibid.*, 196.

increased interest in botanical studies, plant collecting, and the development of botanical gardens and herbariums.<sup>82</sup>

In his investigation on classifying, Foucault states that the histories of ideas or of the sciences credit the seventeenth and eighteenth centuries “with a new curiosity.” This curiosity caused them, if not to discover the sciences of life, at least to give them a new scope and precision. There are a number of causes and several essential manifestations that are traditionally attributed to this phenomenon. On the side of origins or motives, states Foucault, is placed the new privileges accorded to observation and the technical improvements introduced by the invention of the microscope and the development of the physical sciences, which provided a model of rationality by means of experimentation theory. Foucault follows a line of thinking that identifies a Cartesian mechanism being used as an instrument of transference that led mechanical rationality to the ‘discovery rationality’ based on the living being.<sup>83</sup> Further, states Foucault, the ‘historians of ideas’, identify a variety of new interests as the influence for this development such as: the changing economics of agriculture and agronomy, the increased desire for exotic plants and animals that fueled voyages of exploration and acquisition, and the “ethical valorization of nature by Rousseau, at the heart of the eighteenth century, who was also a student of Botany.”<sup>84</sup> Old theoretical questions gave rise to new solutions such as “the possibility of classifying living beings,” with the early scientists such as Linnaeus,

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<sup>82</sup> The history of plant collecting and the development of collections both for medicinal, and ornamental purposes is an extensive area of study that, unfortunately, could not be covered in this paper. For further reading, *The Naming of Names: The Search for Order in the World of Plants*, by Anna Pavord (London UK: Bloomsbury Publishing Plc.) 2005, is an extensively researched and comprehensive book.

<sup>83</sup> Foucault, 126.

<sup>84</sup> *Ibid.*, 126.

devising the premise that “all of nature can be accommodated with taxonomy.”<sup>85</sup> Foucault argues that before the development of Biology, “life itself did not exist.”<sup>86</sup> “All that existed,” he elaborates, “was living beings, which were viewed through a grid of knowledge constituted by *Natural History*. It was necessary...for history to become natural.”<sup>87</sup> It was the living being itself that embodied its history and connected it to the world through what Foucault describes as the “whole semantic network,” resulting in the possibility of naming what one sees.<sup>88</sup> The first form of history constituted in what Foucault refers to as the “period of purification” was the history of nature because its construction requires only words to be applied to things themselves. “What is new,” he states, “are the spaces in which things are juxtaposed such as herbariums, collections, and gardens.”<sup>89</sup> The locus of this history is what Foucault describes as “a non-temporal rectangle” in which creatures are presented as one beside another, grouped according to their common features, bearers of nothing but their own individual names. The idea that the establishment of botanical gardens and zoological collections expressed a new curiosity about exotic plants and animals is challenged by Foucault who argues that what had changed was the space in which it was possible to see and describe them.<sup>90</sup> In time, the natural history room and the garden replaced the once circular procession of the ‘show’ with the arrangement of things on a ‘table’. What came surreptitiously into being between the age of theatre and that of the catalogue was not the desire for knowledge, argues Foucault, “but a new way of connecting things both to the eye and to discourse...a

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<sup>85</sup> Foucault. 126.

<sup>86</sup> Ibid., 128.

<sup>87</sup> Ibid., 128.

<sup>88</sup> Ibid., 128.

<sup>89</sup> Ibid., 131.

<sup>90</sup> Ibid., 131.

new way of making history.”<sup>91</sup> “Among all the mutations that have affected knowledge of things and their order,” states Foucault, “the knowledge of identities, differences, characters, equivalences, words, etc., the most important was the effect of a change in the fundamental arrangements of knowledge.”<sup>92</sup>

The museums rose steadily as physical depositories, stretching the boundaries of theology and developing systems of knowledge that would later be called science.<sup>93</sup> During this period, new collecting technologies, such as the inventory and the catalogue, had been devised. Fueling this new collecting was the empirical explosion of materials that the wider dissemination of ancient texts, increased travel, voyages of discovery, and more systematic forms of communication and exchange had produced.<sup>94</sup> New ideas about how to organize and order objects into meaningful collections began to supersede some of those that had informed earlier practices. The concept of the cabinet of curiosities began to change when systems of ordering and classification by differences became more important than ones of association by similarities or novelty. As a result, by the early nineteenth-century, the breaking up of the great collections and their re-allocation to specialized institutions, the *naturalia* to natural history museums and the *artificialia* to art galleries had occurred.<sup>95</sup>

In *The Order of Things*, Michel Foucault describes order as: “that which is given in things as their inner law, the hidden network that determines the way they confront one another, and also that which has no existence except in the grid created by a glance, an

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<sup>91</sup> Foucault, 131.

<sup>92</sup> Ibid., 387.

<sup>93</sup> Pearce, 92.

<sup>94</sup> Findlen, P. *Possessing Nature: Museums, Collecting, and Scientific Culture in Early Modern Italy*, 3.

<sup>95</sup> Mauries, 185.

examination, a language, and it is only in the blank spaces of this grid that order manifests itself in depth as though already there, waiting in silence for the moment of its expression.”<sup>96</sup> Thus, explains Foucault, in every culture, between what is called the ordering codes and reflections upon order itself, there is the pure experience of order and of its modes of being. In these systems natural creatures are grouped together in accordance to how they are perceived. To Foucault, archaeological inquiry has revealed two great discontinuities in the episteme of Western culture: the first inaugurates the classical age (approximately mid-seventeenth century) and the second, at the beginning of the nineteenth-century, marking the beginning of the modern age.<sup>97</sup> According to Foucault, coherence existed throughout the classical age between the theory of representation and the theories of language, of the natural orders, and of wealth and value. It is this configuration that, from the nineteenth-century onward, changes entirely. Foucault explains that the theory of representation disappears as the universal foundation of all possible orders: “language as the spontaneous *tabula*, the primary grid of things, as an indispensable link between representation and things, is eclipsed in its turn.”<sup>98</sup>

### *Art and Curiosity: Surrealism and the Readymade*

The early twentieth century saw a resurgence that emulated or recreated that theatre of imitation between art and nature that cabinets of curiosities represented. Visible across several art movements from Surrealism to contemporary art, the aesthetic of the

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<sup>96</sup> Mauries, 81.

<sup>97</sup> *Ibid.*, xxii.

<sup>98</sup> *Ibid.*, xxii.

cabinet of curiosities inspired art and design. In 1913, Marcel Duchamp took an ordinary bicycle wheel and mounted it upside down on a domestic stool. This was followed in 1914 with an exhibition that included a bottle rack Duchamp had purchased, from there the idea of the ‘readymades’ was born.<sup>99</sup> The Surrealist’s themes of the incongruous object and their concern with space, context, and framing became the spring board for Duchamp’s influence which continues to play a prominent role in contemporary art. Surrealism, part of the broader modernist shift, was a movement founded by Andre Breton in 1924, and was seen as a reaction to the staid traditionalism prevalent at the time. Andre Breton had been a collector all his life, juxtaposing objects of all sorts from all over the world on the walls of his study. Recognized for its extraordinary makeup, this assemblage has been preserved and is displayed in the Pompidou Centre in Paris.<sup>100</sup> (Figure 2.1) The description provided by Andre Breton for the readers of a 1936 copy of *La Semaine de Paris* states: “*The Charles Ratton Gallery, 14 Rue de Marignan, invites us today, 22 May 1936, to a private view of its exhibition of Surrealist object*” (Figure 2.2). Listed among the two hundred entries in the catalogue were found natural objects including minerals, crystals containing ancient water, plants, including carnivorous species, and rare and unusual animals. Also included were ‘interpretations’ of natural objects such as a monkey set among ferns, or ‘incorporated’ sculptures, and ‘disrupted objects’ that had been modified by natural forces such as fires and storms.<sup>101</sup> This obvious association to natural history museum collections and dioramas also included several objects from Picasso’s personal collection along side the ready-mades of Marcel

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<sup>99</sup> Brandon Taylor, *Art Today*, 91.

<sup>100</sup> Mauries, 212.

<sup>101</sup> *Ibid.*, 214.

Duchamp. Objects such as exotic masks from the Americas and the islands of the South Pacific that embodied this ‘property of strangeness’ had always been at the heart of the culture of curiosities that exemplified the accidental or secondary character of all that is rare, and as such rarely seen. The strangeness of any object in a cabinet of curiosities was the surest guarantee of a ‘sort of reality’; the reality of distant cultures that offered living proof of the shadowy realm of what is hidden in the reality of the natural world. Placed centre stage and exaggerated yet further by Surrealism, explains Mauries, “this ability of the object to go in and out of reality assumed, by contrast, a polemical dimension, a dialectic for questioning the status and reality of all the evidence in its favour.”<sup>102</sup>

One of the best-known collectors of the 1940s was architect and historian Jean-Charles Moreux (1889-1956). His apartment was known for containing cabinets of curiosities in each corner that were devoted to displaying his accumulation of minerals, fossils, shells and crystals. He also contributed a number of articles and studies specifically to the subject of cabinets of curiosities.<sup>103</sup> Moreux described three principal characteristics that distinguish the object of curiosity, the first of which is related to Surrealism, “The effect of surprise as manifested by a more or less violent reaction in the face of the unexpected...that it stimulate the desire for knowledge and that it distracts the eye and amuse the intellect in proportion to its rarity and its tactile value is indisputable.”<sup>104</sup> There are two main themes that can be construed from his writings. The first is a fascination with the mathematical structure of natural objects, with the tension between the apparent irregularity of surfaces and the hidden code that underlies them.

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<sup>102</sup> Mauries, 216.

<sup>103</sup> *Ibid.*, 221.

<sup>104</sup> *Ibid.*, 223.

The second is the historical theme of nature as creator of art, and of art serving and mirroring the wonders of nature.<sup>105</sup> As I have discussed previously, there is a long and well documented history linking the shapes, colours and the ‘evocative powers’ of natural objects, with artistry and the rendering of forms. Contemporary artists rediscovered and reapplied another of the founding theme of cabinets of curiosities, that of the division and relationship between the skills of the artist and of nature, and in so doing reunited borderline areas that had been separated by history. Mauries describes this as an expansion of the territory of art by “the inquiring approach of artists who have laid claim to great swathes of the human and physical sciences in order to transpose or appropriate them for their own poetic ends.”<sup>106</sup> Italian historian Adalgisa Lugli argues that the link to the historical cabinet of curiosities is forged by the fundamental importance of accumulation and collage in modern and contemporary art as well as a fascination with the heterogeneity of materials and work environments. The most extreme motifs of contemporary art such as questioning the illusory unity of the visible, the coherence and division of space, the decoupage and partitioning of forms or colours, all refer back to the most archaic of forms. And, just as one colour may “awaken” another, they “awaken the frameworks and the themes of cabinets of curiosity and the creative tradition and love for the bizarre and the marvelous.”<sup>107</sup> The process of assemblage makes the artist into the same kind of “furtive demiurge” as the collector, “as both seek to master the mysteries of nature.”<sup>108</sup> Mauries states that in “giving oneself over to the creative liberty, to the dynamics of the unconscious, to the loss or the multiplication of identity, the modern

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<sup>105</sup> Mauries, 223.

<sup>106</sup> *Ibid.*, 231.

<sup>107</sup> *Ibid.*, 236.

<sup>108</sup> *Ibid.*, 236.

artist bathes in the vaguely enchanted aura that once surrounded the collector.”<sup>109</sup> The cabinet of curiosities contains potentially some of the basic ideas and driving forces of twentieth-century aesthetics. The correspondence between the assemblage artist and the cabinet of curiosities affirms the “two major principles that govern relations between man and the world – the sense of continuity and that of discontinuity.”<sup>110</sup> Deleuze and Guattari argue that art, philosophy, and science want to “tear open the firmament and plunge into chaos:”

Painters go through a catastrophe, or through a conflagration, and leave the trace of this passage on the canvas, as of the leap that leads them from chaos to composition... It is as if the struggle against chaos does not take place without an affinity with the enemy, because another struggle develops and takes on more importance – the struggle against opinion, which claims to protect us from ourselves.<sup>111</sup>

Here is the recurring description of art as a “becoming” or an “emergence” with the ability to present what is unfamiliar, or a “bit of chaos” – to “compose chaos itself.” Deleuze and Guattari assert that it is a failing of institutional structures of art historical discourse that they interpret art as representation, as an “instance for opinion and judgment,” rather than as another “potentiality for becoming otherwise.”<sup>112</sup> This sentiment is expressed within the enclosed world of the cabinet which creates interplay between ‘micro’ and ‘macro’ symmetries, wherein arrangements are repeatedly fashioned along imaginary lines in order to establish a sense of continuity amid the disorder and discontinuity of reality and the perceived chaos of the outside world. Similarly, the framed surface of the assemblage offers an affirmation of the sense of unity, of fusion

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<sup>109</sup> Mauries, 236.

<sup>110</sup> Ibid., 236.

<sup>111</sup> Gilles Deleuze and Felix Guattari, “What is Philosophy?” (p. 191, 2003). Quoted in, *Theory For Art History*, Jae Emerling, 127.

<sup>112</sup> Jae Emerling, *Theory For Art History*, 127.

between the objects, forms, figures and underlying foundations, and the possibility of making them interact and of extrapolating from the basis of these disparate fragments a composition that is perfectly unified. Arbitrarily grouped together within set limits, the heterogeneous of discontinuous objects of an assemblage confront the observer “at the border of the indefinable.”<sup>113</sup> This is another of those points of contact, or at least convergence, between the cabinet of curiosities and modern culture. The central role of Surrealism can be identified as identifying the found object as a “new force while at the same time irradiating the things around it – the starting point of the game of infinite transformations.”<sup>114</sup>

When Breton photographed accumulations and random assemblages he noticed on meat counters or in the streets of Paris, he was recognizing a work of art that was waiting to be revealed.<sup>115</sup> Thus, the apparatus of the Dadaists and the Surrealists initiated the process by which ultimately “the box, the surroundings and the installation have definitively replaced the picture-frame.”<sup>116</sup> In this evolution towards the transformation of space into a genuine aesthetic fact, the cabinet of curiosities offers to a number of artists the image of a kind of ‘primal scene’ of their own work. The object in the cabinet originally offered a metaphor for the unknown, for something different, defined by multiple aspects, “but now it is transformed into a metaphor for enterprise, for the artistic gesture *per se*.”<sup>117</sup> Cases, glass cabinets, boxes, reliquaries – all fundamental elements of the history of curiosities are now like fetishes, ironic or disenchanting forms, indefinable

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<sup>113</sup> Mauries, 237.

<sup>114</sup> *Ibid.*, 237.

<sup>115</sup> *Ibid.*, 237.

<sup>116</sup> *Ibid.*, 237.

<sup>117</sup> Mauries., 242.

objects, distorted reflections which themselves reflect the status of the work of art, yet remain reflections of the earliest incarnations. The legacy most identified with cabinets of curiosities is that, at their core, they portray ideas about how curiosity, wonder and knowledge can be channeled through unique elements of the material world. They are not only receptacles for established knowledge, but places that nurture processes for creating and inspiring new knowledge.

## Chapter Four

### Early Photography – Cameras Obscura and Pinhole Photography

In this chapter I examine key elements of the history of photography pertaining to the development and use of the camera obscura and pinhole cameras. My approach will be to highlight selected aspects of the history of cameras obscura in as far as they relate to the intellectual profile of the relationship between art and optical science. With this end in view, I will be concerned mainly with the seventeenth-century Dutch painter Johannes Vermeer.

Since its beginning the history of photography has been one of changing ideas and definitions, expanding in complexity and meaning as each new refinement brought resolution to the technology and technique. From the earliest manifestations of the arts we have coveted the ability to capture and record the world around us in order to preserve and reflect what comprises the human legacy. Through the plastic arts, as well as with music, prose and poetry, there has been an attempt to capture what has been considered the essence of our existence. Twentieth-century photographer Henri Cartier-Bresson describes photography as the only means of expression that “fixes forever the precise and transitory instant.” “We photographers,” he states, “deal in things which are continually vanishing and when they have vanished, there is no contrivance on earth which can make them come back again. We cannot develop and print a memory.”<sup>118</sup>

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<sup>118</sup> Nathan Lyons, *Photographers on Photography*, 44.

A central concern in the nineteenth-century regarding the nature of photography as a new technology was the question as to how far it could be considered to be **art**.<sup>119</sup> Photography has been considered to be a dialogue between the ‘natural’ and the ‘unnatural.’ Born of the early camera obscura,<sup>120</sup> transformed by the photogram, later developed into a chemical process, and ultimately into digital format, photography has traveled the distance from the phenomenal to the scientific and artistic. Today there are a number of artists whose work reminds us that photography is prized equally for its ability to capture ‘reality’ as it is to transcend that ‘reality’. William Fox Talbot (*The Pencil of Nature*) may have sought to provide exact, scientific renderings of nature, but he hedged the promise of his new medium by suggesting “the images would provide an experience of verisimilitude.”<sup>121</sup>

Photography has embodied an inherent contradiction: Is it science or art? Photographs have long been understood to be more scientific than other kinds of images given the extensive experimentation into the chemistry of photosensitive emulsions conducted in the early decades of the nineteenth century. But the chemical principles on which photography is based tell only half the story. What we now regard as photography is the result of not only chemical but also optical research. It is very much a hybrid

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<sup>119</sup> Liz Wells, ed., *Photography: A Critical Introduction*, 13.

<sup>120</sup> Martin Kemp, in his book *The Science of Art: Optical themes in western art from Brunelleschi to Seurat* (New Haven & London: Yale University Press) 1990, offers this description of the camera obscura. He states: “The camera obscura is founded on the principle that rays of light from an object or scene will pass through a small aperture in such a way as to cross and re-emerge on the other side in divergent configuration. If the divergent pattern is intercepted by a flat screen, a reversed and inverted image will be formed. For this image to become adequately visible, it is necessary that the screen be placed in a chamber in which the light levels are considerably lower than those around the object – hence the name camera obscura, or ‘dark chamber.’ 189.

<sup>121</sup> William Fox Talbot, ‘The Pencil of Nature’. Quoted in M.H. Pirenne, *Optics, Painting & Photography*, 49.

practice and remains integral to our modern and future visual culture. It is this optical aspect of photography that goes back to one of the most ancient sciences, the science of light and optics.

The dream of a photograph – a perfectly captured movement of time – existed long before the discovery of the processes that would eventually make it a reality. The earliest known reference to the observation that the light passing through a small hole into a darkened enclosure produced an exact image, albeit inverted, of an illuminated object, was made in China during the fifth century BCE by Mo Ti (or Mo Tzu, c. 472- c. 391 BCE).<sup>122</sup> Mo Ti was a renowned master engineer and craftsman as well as a philosopher and was also known for his studies in optics and for introducing logical systems into Chinese philosophy. Aristotle later described a similar experience during an eclipse, and in the tenth century the Arabian scholar Ibn Al-Hazen furthered the understanding of the principles at work, noting the clarity of the image was dependent on the aperture of the hole through which the light filtered. These principles served as the basis for the camera obscura, developed during the Renaissance and described by Leonardo da Vinci, Vitruvius, and Erasmus Reinhold, among others. As the historian Naomi Roseblum points out, “scientists and artists regarded it as both a device for aiding graphic representation and a means of ascertaining basic truths about nature.”<sup>123</sup> Like Leonardo da Vinci, the astronomer Kepler had been led to the idea that an optical image of external objects was formed inside the eye on the principle of the camera obscura.

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<sup>122</sup> Adam Fus, ‘Light and Darkness’, Published in *Photo Review*, 1995.

<sup>123</sup> Naomi Roseblum, cited by Adam Fus in, “Light and Darkness,” in *Photo Review*, 1995.

Vision, I say, occurs when the image of the whole hemisphere of the external world in front of the eye – in fact a little more than a hemisphere – is projected onto the pink superficial layer of the concave retina.<sup>124</sup>

So wrote Kepler, in 1604, in his *Ad Vitellionem Paralipomena*, a book which marks the beginning of the era of modern optics. Kepler was the first who clearly understood that the light coming from external objects forms an inverted image of these objects on the retina, the light-sensitive layer which lines the inside of the eyeball and which is connected to the brain by the optic nerve. As illustrated by Descartes's model (Figure 3.1) from his *Dioptrique*, published in 1637, together with his *Discours de la Méthode*, and by the modern diagram of Helmholtz, the optical system of the human eye functions as a camera obscura.<sup>125</sup> "Vision is an active, not a passive process," states Kepler, "in order to see, it is necessary to look."<sup>126</sup> As Le Grand has said epigrammatically, "the eye is the only optical instrument which forms an image which had never been intended to be seen." This is the great difference between the eye and the photographic camera.<sup>127</sup>

The camera obscura (Figure 3.2 & 3.3), though, was considered to be far more than an optical device. Jonathan Crary argues that for over two centuries it subsisted as a "*philosophical metaphor*, a model in the science of physical optics, *and* was also a

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<sup>124</sup> J. Kepler, (1604). "*Ad Vitellionem Paralipomena*" Cap. V, 2, 'Modus visionis', cited in, *Optics, Painting & Photography*, M.H Pirenne, 1.

<sup>125</sup> "The retinal image is formed by a mechanism of light convergence. While the light from any object point is divergent, the separate conical fluxes reaching the eye from all the different object points converge towards the eye and cross one another within the pupil of the eye. Consequently the retinal image, relative to the external objects, is inverted. What is of primary importance for vision, however, is the fact that the optical system of the human eye thus achieves a 'point to point' correspondence between the object and its image cast on the nervous layer receptive to light." Pirenne, M.H., *Optics, Painting & Photography*, 3.

<sup>126</sup> M. H. Pirenne, *Optics, Painting & Photography*, 8.

<sup>127</sup> *Ibid.*, 9.

technical apparatus used in a large range of cultural activities.”<sup>128</sup> During this time the camera obscura stood as a model in both rationalist and empiricist thought, of how “observation leads to truthful inferences” about the world.<sup>129</sup> At one and the same time it was widely used as a means of observing the ‘visible’ world, as an instrument of popular entertainment, as well as scientific inquiry and artistic practice.<sup>130</sup> The camera obscura gained a multiple identity and a mixed status as an “epistemological figure within a discursive order and an arrangement of cultural practices.”<sup>131</sup> The camera obscura can be seen in the order of what Gilles Deleuze would identify as an *assemblage*, “something that is simultaneously and inseparably a machine assemblage and an assemblage of enunciation,” an object about which something is said and at the same time an object that is used.<sup>132</sup> What Crary argues as being crucial about the camera obscura, is its relation of the observer to the “undemarcated, undifferentiated expanse of the world outside,” and how “its apparatus makes an orderly cut or delimitation of that field allowing it to be viewed, without sacrificing the vitality of its being.”<sup>133</sup>

During the late sixteenth-century the camera obscura had begun to assume a preeminent importance as an instrument with the ability of delimiting and defining

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<sup>128</sup> Aaron Scharf, ‘Art and Photography’. Quoted in Jonathan Crary, *Techniques of the Observer*, 29.

<sup>129</sup> Jonathan Crary, *Techniques of the Observer*, 29.

<sup>130</sup> Crary, 29.

<sup>131</sup> Walter Benjamin, “Charles Baudelaire: A Lyric Poet in the Era of High Capitalism, trans. Harry Zohn (London, 1973), p. 103. Quoted in Jonathan Crary, *Techniques of the Observer*, 30.

<sup>132</sup> Gilles Deleuze, and Félix Guattari, ‘A Thousand Plateaus: Capitalism and Schizophrenia, trans. Brian Massumi (Minneapolis, 1987), p. 504. Quoted in Jonathan Crary, *Techniques of the Observer*, 31.

<sup>133</sup> Crary, 34.

relations between an observer and the world.<sup>134</sup> Within the following century it had become the primary site from which vision could be conceived and represented. Above all it indicated the appearance of what Crary describes as a “new model of subjectivity,” defining the observer as “isolated, enclosed, and autonomous within its dark confines.”<sup>135</sup> Thus making the camera obscura inseparable from a ‘metaphysic of interiority,’<sup>136</sup> what Foucault has called the “classical episteme,” looking inward in order to look outward.<sup>137</sup> There are well-known texts such as Newton’s *Opticks* (1704) and Locke’s *Essay on Human Understanding* (1690), which refer to the image of the camera obscura and of its interiorized and disembodied subject. What they demonstrate is how the camera obscura was a model simultaneously for the observation of empirical phenomena and for reflective introspection and self-observation. Throughout his text the site of Newton’s inductive procedures is the camera obscura; “it is the ground on which his knowledge is made possible.” He recounts:

In a very dark chamber, at a round hole, about one third part of an inch, broad, made in the shut of a window, I placed a glass prism, whereby the beam of the Sun’s Light, which came in at the hole, might be refracted upwards toward the opposite wall of the chamber, and there form a coloured image of the Sun.<sup>138</sup>

Locke’s concern is with how perception operates, how it *produces* intelligibility, and the procedures he describes he has borrowed from Descartes. He recuperated the Cartesian *cogito*, “that self-validating bundle of mental operations, and recast it as a

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<sup>134</sup> Ibid., 38.

<sup>135</sup> Jonathan Crary, *Techniques of the Observer*, 39. Crary argues that the role of the camera obscura was that of an instrument that impels a kind of *askesis*, or withdrawal from the world.

<sup>136</sup> Ibid., 39.

<sup>137</sup> Bryan Jay Wolf, *Vermeer and the Invention of Seeing*, 30.

<sup>138</sup> Sir Isaac Newton, ‘Opticks, or a Treatise of the Reflections, Refractions, Inflections and Colours of Light’, 4<sup>th</sup> ed. (1730; rpt. New York, 1952), p. 26. Quoted in Jonathan Crary, *Techniques of the Observer*, 40.

chamber, an architectural space, within which the outside world is apprehended.”<sup>139</sup> In *Opticks*, Newton argues that images from the outside world are “carried through the *Organs of Sense* into our little sensoriums, and are there seen and beheld by that which in us perceives and thinks.”<sup>140</sup> These publications result in two empiricist narratives. The first is a ‘chamber like space’ that frames the sensory activities of the mind, and the second is what Richard Rorty calls “the unblinking Eye of the Mind.”<sup>141</sup> Descartes employs a notion of the mind being a space apart from the world, a “**cabinet of natural curiosities**”, per se, which allows us through knowing it, to know what stands outside it.<sup>142</sup>

The camera obscura thus represented two historical concepts at once. On the one hand, it served as a way of defining what the newly mechanized spaces of Descartes might look like, playing an instrumental role in the development of what Martin Jay has termed “Cartesian perspectivalism,” an effort to reify the visual order into an “abstract, quantitatively conceptualized space.” At the same time, it provided a picture of how the process of looking itself occurred, revealing not what the seventeenth-century viewer saw, but how she/he saw: that manner which the world became intelligible by being brought indoors, set within the mind’s interior chambers.<sup>143</sup> “The orderly and calculable penetration of light rays through the single opening of the camera corresponds to the

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<sup>139</sup> Wolf, 31.

<sup>140</sup> Stephen Toulmin, “The Inwardness of Mental Life,” *Critical Inquiry* 6 (Autumn 1979): 4, Quoted in Bryan Jay Wolf, *Vermeer and the Invention of Seeing*, 9.

<sup>141</sup> Richard Rorty, cited in Bryan Jay Wolf, *Vermeer and the Invention of Seeing*, 32.

<sup>142</sup> Wolf, 32.

<sup>143</sup> Jay Martin “Scopic Regimes of Modernity,” in *Vision and Visuality*, ed. Hal Foster (Seattle: Bay Press, 1988) p. 8-9. Quoted in Bryan Jay Wolf, *Vermeer and the Invention of Seeing*, p. 12. See also Cary, “Techniques of the Observer,” 42.

flooding of the mind by the light of reason, not the potentially dangerous dazzlement of the senses by the light of the sun.”<sup>144</sup>

### *Vermeer and the Camera Obscura*

”*Vermeer rarely looks out the window...*”<sup>145</sup>

The camera obscura was a preeminent instrument to artists of the seventeenth century opening a new range of expressive possibilities by providing a ‘literal frame’ for their vision and by introducing optical effects not normally visible, such as the halation of highlights caused by bright lights reflecting off shiny surfaces. Another important consequence for artists was that, in a properly functioning camera obscura, colours appeared more intense than in normal vision – because the scale of objects is reduced but their colour is not. Indeed, many found the image of a camera obscura superior to the painted image. As Constantijn Huygens (1569-1687), secretary to the Princes of Orange and an art enthusiast, wrote in 1622:

It is impossible to express the beauty [of the image] in words. All painting is dead by comparison, for this is life itself, or something more elevated, if one could articulate it.<sup>146</sup>

In a period that witnessed the discovery of the telescope and microscope, the camera obscura had become a familiar instrument to artists, such as Delft painter Johannes Vermeer, as well as scientists. Samuel van Hoogstraeten, for example, who erected cameras obscura on at least two occasions, commented:

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<sup>144</sup> Crary, 43.

<sup>145</sup> Wolf, 30.

<sup>146</sup> Adam Fus, ‘Light and Darkness’, article published in *Photo Review*, 1995.

I am certain that vision from these reflections in the dark can give no small light to the sight of the young artists; besides gaining knowledge of nature...one sees here what main characteristics should belong to truly natural painting.<sup>147</sup>

Johannes Vermeer's interest in the camera obscura and its role in his working process is an extremely complex topic. Since it leaves no physical trace of its use, the only means for establishing Vermeer's use of it is the appearance of comparable optical characteristics in his works. As well, it is important to consider that Vermeer's interest in the camera obscura seems to have been for its philosophical as well as for its artistic application. While it was a vehicle for revealing optical effects of light and colour, in a manner complementary to the science of perspective, it also provided Vermeer with an additional means for expressing the fundamental concepts essential to his art.<sup>148</sup>

One of the primary fascinations of the camera obscura was that it projected an animate image. J. Leurechon, the author of an early seventeenth-century treatise entitled *Recreation Mathematicque*, remarked that: "above all there is the pleasure of seeing the movement of birds, men, or other animals and the quivering of plants waving in the wind; for although it is reversed, nevertheless, this beautiful painting, beyond being foreshortened in perspective, represents ingeniously that which no painter has ever been able to represent in his painting, to realize movement continued from place to place."<sup>149</sup> A sense of animation and movement enlivens landscapes, genre studies, portraiture, and even still-lives. At a time when artists consciously sought naturalistic images of the world, it is understandable that they were attracted to optical devices such as the camera obscura not only as drawing aids, but perhaps even more importantly, would have been

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<sup>147</sup> Arthur, K. Wheelock JR, *Vermeer & the Art of Painting*, 18.

<sup>148</sup> *Ibid.*, 19.

<sup>149</sup> *Ibid.*, 18.

the lessons to be gained about creating the semblance of reality, in particular through the relationships of tone, light, and colour.

Vermeer's *Girl with the Red Hat*, c. 1666-67 (Figure 3.4), for instance, displays many of the characteristics attributed to the use of a camera obscura such as the application of soft focus and of out-of-focus techniques used in particular areas. Central to this composition is the vivid white of the girl's cravat which serves to cradle the face and focuses attention on her expression. The intensity of the white, however, is also important as a unifying element in the painting. Part of the painting's vibrancy is derived from the manner in which materials are animated by light reflecting off their surfaces. Arthur Wheelock describes a number of techniques such as the highlights that appear to "flicker off the softly focused hat, the blue robe, and the distinctly out-of-focus lion head finials of the chair."<sup>150</sup> Vermeer exploited other techniques in the painting to enhance optical effects, states Wheelock, such as modeling paint and carefully placing coloured highlights. These accents lend to the figure a marvelous sense of animation and vitality, rendering, what may be considered to be, a 'photographic' sensibility to the painting.<sup>151</sup> In *The Lacemaker*, c. 1669-1670 (Figure 3.5), however, Vermeer appears to have painted totally according to a projected image. "It is, in effect, a photograph fixed and printed by painting," states Quentin Williams. It glows with an ambient light that appears to radiate from all directions including the lacemaker herself. Vermeer's *The Milkmaid*, c. 1658, (Figure 3.6) mixes photography with painting. The distilled light spots and soft focus in the still-life objects contrast sharply with the focused and detailed surface of the back

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<sup>150</sup> Wheelock, 121.

<sup>151</sup> Quentin Williams, 'Projections from Actuality,' in *Leonardo*, Vol. 28, No. 4 (1995), 334-335.

wall.<sup>152</sup> Applications of the same quality are evident throughout his later work including *The Girl with a Pearl Earring*, c. 1665, (Figure 3.7), which also reveals a notable appearance of a ‘photographic’ sensibility. “The condensed form of thought that is the language of photography,” as Cartier-Bresson so accurately puts it, “has a great power which is that of making judgment on what we see, and that implies great responsibility.”<sup>153</sup> Not unlike Cartier-Bresson’s *decisive moment*, Vermeer’s canvases continually seek to know the world. “They turn – and this is the paradox,” states Wolf, “the moment of unpredictability – not to that world directly but to cloistered spaces that, in their removal from that world, allow it to be seen more clearly,”<sup>154</sup> Robert D. Huerta argues that Vermeer constituted a special branch of the “scientific order of dialecticians” who sought to “make real the vision of the inaccessible.”<sup>155</sup> Further, states Huerta, Vermeer took an analytical approach to his art, seeing himself as a “natural philosopher of the landscape of vision,” using his paintings as experiments.<sup>156</sup> The camera obscura provided a technology that did not so much change intellectual thinking but turned it in a new direction. We tend to think of the camera obscura today in relation to photography. With its darkened interior, single opening, and retinal receiving surface, the camera obscura stands as the forerunner of the modern camera; like the camera, it records mechanically, or at least “naturally” and “objectively” the play of light upon a surface. But to sixteenth-century eyes, the camera obscura, as the etymology of the term implies, was as much a chamber or room as an instrument defined by a surface. It was a space,

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<sup>152</sup> Williams., 335.

<sup>153</sup> Wolf, 30.

<sup>154</sup> *Ibid.*, 30.

<sup>155</sup> Robert D. Huerta, *Vermeer and Plato, Painting the Ideal*, 78.

<sup>156</sup> *Ibid.*, 78.

“like one’s private closet,” where reading or meditation occurred. The camera obscura, argues Wolf, “behaved like an ungainly seeing machine that literalized the newly interior spaces of Cartesian thought.”<sup>157</sup>

### *Pinhole Photography*

By 1839, photography had been invented. A lens image from a small, portable camera obscura could be chemically preserved. (There is some conjecture that the first photograph by Niépce, an eight-hour exposure made in 1826, might just be a pinhole).<sup>158</sup> In 1857 Joseph Petzval devised a mathematical formula to decipher the optimal pinhole diameter for the sharpest definition in a pinhole image. The optimal formula, which is still used today, was achieved about thirty years later by the Nobel Prize winner Lord Rayleigh (John William Strutt, 1842-1919). Rayleigh spoke of his work in *Nature* (1891):

What, then, is the best size of the aperture? That is the important question in dealing with pinhole photography. It was first considered by Professor Petzval of Vienna, and he arrived at the result indicated by the formula,  $2r^2 = f\lambda$ , where  $2r$  is the diameter of the aperture,  $\lambda$  the wavelength of light, and  $f$  the focal length, or, rather simply the distance between the aperture and the screen upon which the image is formed.<sup>159</sup>

It was this combination of a box with a pinhole and light sensitive paper secured to record the image that resulted in the pinhole camera (Figure 3.8). Pinhole photography is

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<sup>157</sup> Wolf, 32.

<sup>158</sup> Eric Renner, *Pinhole Photography*, 16.

<sup>159</sup> Eric Renner, *Pinhole Photography*, 17. Eric Renner adapted his results to the problem of pinhole photography. The general conclusion is that the hole may advantageously be enlarged beyond that given by Petzval’s rule. A suitable radius is  $r = \sqrt{f\lambda}$ . The definition improves as the aperture entails a greatly extended focal length. The limits of an ordinary portable camera are soon passed.

often described as the art of surprise and a continual wonder.<sup>160</sup> This curious attribute is the pinhole camera's greatest gift to the photographer. Although the lens camera has advantages over the pinhole camera, namely proper focus and potentially sharper images, the pinhole camera, on the other hand, has other unique advantages not the least of which is its spontaneous unpredictability. It automatically projects an image of which one can be certain, is an accurate central projection of the objects photographed. As well, the pinhole camera has a depth of field which in practice is almost unlimited, and it readily produces images covering a field extending to 90° or more.<sup>161</sup> A pinhole camera is a fairly simple device which consists of four main parts: the aperture, the camera body, the light-sensitive material placed inside the camera, and the shutter. The artist can vary each part enormously according to artistic need. Using a pinhole camera makes photography the partner of history because the time needed to record the image through the pinhole requires a long exposure. These images can be considered to be the antithesis of Cartier-Bresson's decisive moment, rather than capturing a single moment, these images speak of prolonged, protracted moments, of elapsed time.

“Brunelleschi, looking through a hole at a street in Florence, makes a depiction of it from a fixed viewpoint...”<sup>162</sup> states painter-photographer David Hockney who argues that the mechanistic viewpoint toward the perspective produced by a camera, whether it is a pinhole camera or a lens camera, creates a photograph (with its built-in perception of the way we visualize one-point perspective), which is indeed the end product of the early

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<sup>160</sup> Renner., 74

<sup>161</sup> M.H. Pirenne, *Optics, Painting & Photography*, 49

<sup>162</sup> David Hockney, *That's the Way I See It* (1993). Quoted in Renner, *Pinhole Photography*, 167.

Italian Renaissance.<sup>163</sup> Our present-day pinhole camera may well be representative of a five hundred and fifty year old Renaissance tool, whereas the slightly more than one hundred and fifty year old chemical process known as photography is living proof that a permanent single-point perspective image can be archivally retained.<sup>164</sup> In *The Day the Universe Changed*, Samuel Y. Edgerton, Jr., explained the ‘monumental significance’ of the vanishing-point continuum of pinhole, a continuum that began on the day Brunelleschi made his pinhole device.<sup>165</sup> Edgerton chronologically traced important historical events that connect the vanishing point of a pinhole, pinhole photography and other alternative processes in the last decades which have brought a somewhat changed visual sensibility into acceptance, although not one that breaks with one-point perspective, arguing further, that the reliance on the hard-edged, sharply focused lens image that pervaded much of the imagery of the twentieth century has receded.<sup>166</sup> Notably, since the 1990s there has been an increase in the art photographer’s use of pinhole cameras. From my experience the reason for this resurgence of interest in pinhole photography is simply a result of the mysterious and somewhat irrepressible qualities of the pinhole that often result in images of enhanced visual dimensionality and quality.

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<sup>163</sup> Renner, 167.

<sup>164</sup> Renner, 167.

<sup>165</sup> Samuel Y. Edgerton, *The Day the Universe Change*. Cited in Eric Renner, *Pinhole Photography*, 167.

<sup>166</sup> According to Eric Renner, *Pinhole Photography*, David Hockney’s and Samuel Edgerton’s theories on single-point perspective express how the camera’s one-point perspective combined with the camera’s pictorial reality remains a sociologic structure that holds the Western-Christian visual world together. P. 168.

## Chapter Five

### Reframing the Collection: Dioramas and the Photography of Hiroshi Sugimoto

There has been a substantial amount of research given over to the interpretation of the way in which visual culture has consistently presupposed an essential viewer, that is; “a single interpretation of an object” has been presented as what the object means.<sup>167</sup> This interpretation has generally been formed from within a specific setting and discipline, often ignoring the concept that varying interpretations can result from different and divergent gazes. Treating museums as ‘visual discourses’, and sources of artistic investigation and critique, enables the questioning of the relationships between looking, knowledge and power.<sup>168</sup>

This chapter examines some of the diverse issues surrounding contemporary museum pedagogy specifically how it is structured through the narratives constructed by museum displays such as natural history dioramas. Secondly, I discuss the works of photographer Hiroshi Sugimoto, primarily his ‘*Diorama*’ series. I have selected Sugimoto as my case study and representative contemporary artist because of his use of photography as a means of exploring the meanings that collections, displays, and systems of knowledge represent. In previous chapters I have discussed how museums have been characterized as being organized representatives of cultural identity and scientific knowledge. Museum displays, of which natural history dioramas are representations, codify and substantiate many of these concepts.

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<sup>167</sup> Hooper-Greenhill, 15.

<sup>168</sup> *Ibid.*, 15.

## *Dioramas*

*A display makes objects stand out from the flow of everyday life.*

What are museum habitat dioramas? Simply put, a diorama is a natural history scenario that typically contains mounted zoological specimens arranged in a foreground that replicates their native surroundings in the wild.<sup>169</sup> The primary function of a diorama is that of creating an illusion of atmospheric space and distance, by merging the foreground imperceptibly with the painted background.

It is not by Painting that Photography touches art, but by Theatre. The camera obscura, in short, has generated at once and the same time perspective painting, photography, and the diorama, which are all three arts of the stage; but if photography seems to me closer to the Theatre, it is by way of a singular intermediary: by way of Death.<sup>170</sup> Roland Barthes

The diorama shares its ancestral roots with both the development of linear perspective and the development of photography. During his extensive experimentations Leonardo da Vinci discovered that the discrepancies between perspective pictures and visual perception were such that there existed only three solutions: a peephole arrangement (seen in the early camera obscuras), a curved plane, or the removal of the object to the appropriate distance. The ability of the diorama to create an illusion of reality depends on the use of all of these applications.<sup>171</sup> The objects on display and the background painting depicts what can be seen from a particular location in nature while the design of the alcove space reinforces how the viewer would see the particular view. The reason that the panoramic illusion works, as Gombrich puts it, “is not that the world looks like a picture,

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<sup>169</sup> Karen Wonders, *Habitat Dioramas: Illusions of Wilderness in Museums of Natural History*, 9.

<sup>170</sup> Roland Barthes, *Camera Lucida*, 31.

<sup>171</sup> Wonders, 206.

but that a picture can look like the world.”<sup>172</sup> The early diorama was given its definitive form by Louis J.M. Daguerre in the 1820s. Unlike the static panorama painting that first appeared in the 1790s, the diorama is based on the “incorporation of an *immobile* observer into a mechanical apparatus and a subjection to a predesigned temporal unfolding of optical experience.”<sup>173</sup> The ‘multimedia diorama’ was installed with wheels for motion and incorporated the observer into the experience (Figure 4.1). In the early 1890s designers at the Milwaukee Public Museum pioneered ‘total habitat dioramas’, considered to be a ‘total-experience walk through exhibition’, in which specimens were presented within ‘theatre-in-the-round-type’ displays, based on an experiential rather than a didactic method of experience.<sup>174</sup> More interpretively, the habit diorama is an expression of the human pursuit to further the traditions of classification by defining the world by means of an ecological model.<sup>175</sup> The communicative effectiveness of the diorama as a technique of museum display is ultimately measured by the illusion it creates of a wide expanse of landscape. The diorama illusion, as described by Karen Wonders, is a form of “ecological theatre in which art has a specialized scientific function, giving particular attention to the role that perspective has both in the design of the diorama alcove and in the rendering of its background surface.”<sup>176</sup> The artistic properties integral to the habitat diorama extend beyond the individual specimens to the over-all romantic impression created by the scenery and the scene as a whole. In the same way that the cabinet of curiosities was seen to serve as a “catalyst in transferring

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<sup>172</sup> Wonders, 206.

<sup>173</sup> Crary, 112.

<sup>174</sup> Arnold, 242.

<sup>175</sup> Wonders, 9.

<sup>176</sup> *Ibid.*, 192.

authority from the artists' perception of natural objects to the objects themselves,"<sup>177</sup> habitat dioramas can be considered to affect a similar transfer. The diorama is based on an interdisciplinary exhibition philosophy that asserts the "natural world" as a source of both artistic inspiration and scientific meaning. A habitat diorama also appears as a kind of mock memorial, preserving extinct or threatened species and habitats, encasing stuffed animals enshrined in reproductions of their once natural habitats set in pristine wildernesses of bygone eras. A diorama is an enclosed space where "one seems to be looking through a *window on nature itself*,"<sup>178</sup> or at least a simulation of it. Marcel Duchamp incorporated the concept of the diorama's representation of reality in his final work, *Etant Donnes*, using the illusionistic format of the diorama as a comment on the relationship between art and life. In *Etant Donnes*, Anne d' Harnoncourt argues that this work provokes questions concerning the visualization of reality in art and its relation to epistemological debates in science that are relevant to the diorama.<sup>179</sup> What was so intriguing to Hiroshi Sugimoto when he first visited the Natural History Museum in New York, and what continues to be the underlying concern of the diorama illusion is the question: What does one see? Habitat dioramas can be said to "represent the culmination of pictorial realism; they are pictures without apparent boundaries that under ideal conditions create a convincing impression of three-dimensional space."<sup>180</sup> Examining Sugimoto's *Dioramas* series, as well as creating the '*herbarium imaginaire*' series, is a

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<sup>177</sup> Philip C. Ritterbush, "Art and Science as Influences on the Early Development of Natural History Collections," "Proceedings of the Biology Society of Washington" 82 (1969). Pp. 560-577. Cited in Karen Wonders, *Habitat Dioramas*, 194.

<sup>178</sup> Wonders, 205.

<sup>179</sup> *Ibid.*, 228.

<sup>180</sup> *Ibid.*, 192.

way to conceptualize the complex interrelationships between nature, technology and society.

### *Hiroshi Sugimoto*

Hiroshi Sugimoto is a Japanese-born American photographer whose photographs have been characterized as being, among other things, “examinations of the nature of life.”<sup>181</sup> Through a process of distilling his subject matter to its most essential components, Sugimoto’s works have been described as giving the appearance of ‘manipulating reality and time,’ creating what Takaaki Matsumoto describes as “visual experiences that challenge traditional notions of photography and perception.”<sup>182</sup> Sugimoto is credited as being a technically masterful photographer, who utilizes qualities of tonality along with long exposure times, to create his crisp, stark scenes noted for their intense visual quality. Sugimoto’s works challenge traditional notions of photography and perception by evoking the past and the present and interweaving art and science. According to Sugimoto, the photograph is like a “blank screen upon which the observer can project his or her own impressions and desires,” but it is also clearly a distinctive expression of the artist’s own sensibility and ideas. Using a conceptual approach to his photography, many of his subjects appear to be disconnected from linear time. Like the series *Seascapes* and the objects of *Conceptual Forms*, the series of *Dioramas* could be from the past or from the future. Matsumoto describes one of the scenes as: “a bleak forbidding landscape, where a pale sky and snow-covered ground melt together to produce a white void, a polar

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<sup>181</sup> Takaaki Matsumoto, *Hiroshi Sugimoto*, 2

<sup>182</sup> *Ibid.*, 2

bear hovers over its victim.”<sup>183</sup> The photograph is *Polar Bear* (1996) (Figure 4.2), a scene depicting the suspended moment just after the kill. The majestic polar bear is poised over a dead seal lying on the ice. This scene, states Matsumoto, is one of “sharp contrasts – hunter and prey, action and stillness, life and death, black-and-white creatures delineated in a black-and-white world.”<sup>184</sup> Nonetheless, there is something odd about the photograph, which at first glance appears to stem from the subject matter, but with further examination the image reveals its contradictions. Something about this portrayal of a ‘life-and-death’ struggle, so common to nature photography, appears to be incorrect, even disturbing, and it is linked to the photograph itself. Generally wildlife photographs, especially those involving ‘dangerous’ animals, have a particular appearance. Characteristically they are in colour with the photographer generally positioned at a safe distance and attempting to capture animals in motion. The photographs are often highly charged action shots with blurry backgrounds. Sugimoto’s photograph is different. His stark black-and-white image is rendered with a wide tonal range and a “crystal, almost super-real clarity” – the antithesis of the blurry, often grainy and quickly composed, documentary wildlife photograph.<sup>185</sup> To achieve this effect Sugimoto uses a large format camera, mounted on a tripod, possibly equipped with a wide-angle lens that condenses the focal plane, and a long exposure time, essentially an impossible feat for a wildlife photographer. The result is a photograph that, after some consideration, portrays a distinct ambiguity. There is a tangible tension between the ‘still-life’ content and the presentation, “between what we see, what we think we see, and what we know of the

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<sup>183</sup> Matsumoto, 22.

<sup>184</sup> *Ibid.*, 22.

<sup>185</sup> *Ibid.*, 22.

vocabulary of photography.”<sup>186</sup> Artifice verses reality is a concern Sugimoto shares with other artists (Joan Fontcuberta for example), who make straightforward photographs of contrived scenes, but perception itself rather than creation of the ‘reality’ is his interest. Photographs are given an “authority of being testimony,” states Susan Sontag, “almost as if you have some direct contact with the thing, or as if the photograph is a piece of the thing; even though it is an image, it really is the thing.”<sup>187</sup> In much of Sugimoto’s work, however, a tension occurs between the ‘thing’ photographed and the photograph itself. This tension arises with the recognition that the ‘scene’ is not real. It is a photograph of a diorama in New York’s American Museum of Natural History. *Polar Bear* was among the first of Sugimoto’s diorama images, a series begun in 1994 and completed in 1999, that includes subject matter ranging from animals and undersea life to every-day life scenes of early humans, such as *Earliest Human Relatives* (1994) (Figure 4.3), and *Cro-Magnon*, (1994) (Figure 4.4). Sugimoto recounts the experience of his arrival in New York in 1994, and his first visit to the American Museum of Natural History where he “made a curious discovery while looking at the exhibition of animal dioramas: the stuffed animals positioned before painted backdrops looked utterly fake, yet by taking a quick peek with one eye closed, all perspective vanished, and suddenly they looked very real. I had found a way to see the world as a camera does. However fake the subject, once photographed, it’s as good as real.”<sup>188</sup> Sugimoto could have created a more convincing ‘fake’ by shooting the dioramas in 35mm colour film and blurring the background. By

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<sup>186</sup> Matsumoto, 22.

<sup>187</sup> Susan Sontag, “Photography within the Humanities,” in *The Photographer Reader*, ed. Liz Wells (London, Routledge, 2003), 64. Cited in, Takaaki Matsumoto, *Hiroshi Sugimoto*, 22.

<sup>188</sup> Matsumoto, 45.

utilizing the slow, time-consuming photographic methods developed in the nineteenth century to photograph a scene, Sugimoto creates images that are close to real or believable, it is, as the artist said, “as good as real.” They relate to Baudrillard’s description of a simulation in that a simulation is the “generation by models...of a real without origin or reality,” what he describes as “hyperreal.”<sup>189</sup> Sugimoto conceals any evidence such as glass panes or museum didactic panels that would have made the source obvious, results in an image that can not be clearly identified as a photograph of a diorama, blurring lines of perception and moving towards representing something ‘real’, of being an example of photographic ‘truth’, yet simultaneously undermining the truth. This results in an image that inhabits a space between the thing depicted and the photograph itself, a space that encourages the contemplation of the diorama as a concept replacing the diorama as mere image.<sup>190</sup> A quality of credibility is conferred upon ‘photography’, due to its presumed quality of objectivity. André Bazin argues that despite any critical awareness we may have regarding a photographic image, “we are forced to accept as real the existence of the object reproduced, actually re-presented, set before us, that is to say, in time and space.”<sup>191</sup> Although the photograph “announces its deception,” revealing that it is not a picture of animals but a picture of a diorama of animals,<sup>192</sup> there is a further imbedded deception in the diorama as a constructed display of a ‘real’ natural environment. What the camera reveals is not the reality of the thing itself, but an underlying ‘unreal’ reality, a restructuring of the ‘real’. The diorama represents the distinction between depicting ‘nature’ and depicting the objects of nature. The

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<sup>189</sup> Jean Baudrillard, ‘Simulacra and Simulations,’ published in, *Selected Writings*, 166.

<sup>190</sup> Matsumoto, 23.

<sup>191</sup> Andre Bazin, *What is Cinema?* 13.

<sup>192</sup> Matsumoto, 22.

importance of this distinction is made apparent by recognizing the difficulty of depicting nature by means of the object model. In using the object model, the objects of nature depicted in the diorama format become ‘readymades’ or ‘found art,’ in a similar vein as Duchamp’s ‘Urinal’ or to the real ‘Brillo’ cartons of Andy Warhol.<sup>193</sup> Like photography itself, the diorama is a “means of harnessing and analyzing nature, a way of categorizing and classifying the world.”<sup>194</sup> It is not a photograph of a thing but a photograph of an idea, characteristic of much of Sugimoto’s other series and reflective of his links to Surrealism and works of Marcel Duchamp. Sugimoto transforms the decidedly specific and the intangible by applying the concept to the concrete, exploring the theme of our relationship to time and history. The prehistoric figures such as *Cro-Magnon* and the *Early Human Relatives*, people who lived long before the camera was invented, subvert the constraint of the here and now, which is thought to be one of the camera’s inherent limitations. For Sugimoto, the camera can roam freely through time. “It is like an eye wandering through the annals of history,” states John Yau, “with all the different images refusing to add up to a comforting narrative.”<sup>195</sup>

The photographer, like the collector, states Sontag, is animated by a passion that, even when it appears to be situated in the present, is ultimately linked to a sense of the past. While traditional arts of historical consciousness attempt to put the past in order, distinguishing the innovative from the retrograde, the central from the marginal, the relevant from the irrelevant or merely interesting, “the photographer’s approach – like

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<sup>193</sup> Allen Carlson, ‘Appreciation and the Natural Environment, Published in, *Aesthetics – A Comprehensive Anthology*, 538

<sup>194</sup> Matsumoto, 23

<sup>195</sup> John Yau, “Hiroshi Sugimoto: Enigmatic Objects,” in *Aperture*, 50 (0036, 2004)

that of the collector – is unsystematic, indeed anti-systematic.”<sup>196</sup> Further, the photographer’s passion for a subject has no essential relation to its content or value, or what it is that makes a subject classifiable. It is, states Sontag, “above all, an affirmation of the subject’s *thereness*; (the arrangement of a group of objects), which is the equivalent of the collector’s standard of genuineness; its quiddity – whatever qualities make it unique.”<sup>197</sup> In principle, photography executes the Surrealist mandate to adopt an uncompromisingly egalitarian attitude toward subject matter – “everything is ‘real’.”<sup>198</sup> In this sense, the photographer is not so much concerned with the development of a new aesthetic as they are with the construction of new kinds of knowledge, making photographs the carriers of facts. Sontag suggests that the photographer is engaged in the “enterprise of antiquing reality,” and that photographs are themselves instant antiques. “The photographer offers a modern counterpoint of the characteristically romantic architectural genre,” argues Sontag, “the artificial ruin – to make nature suggestive, – suggestive of the past.”<sup>199</sup> Photographers, operating in terms of the Surrealist sensibility, states Sontag, “suggest the vanity of even trying to understand the world and instead propose that we collect it.”<sup>200</sup> Photography, therefore, was not a technical invention but a byproduct of natural impulses for capturing memories and stopping time. Bazin goes further and positions it as a phenomenon of nature, arguing that from camera to print it is not unlike a flower or snowflake with “earthly origins.”<sup>201</sup> For Sugimoto, the diorama is already a kind of photograph. The tableau is a means of arresting a moment and holding

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<sup>196</sup> Susan Sontag, *On Photography*, 77.

<sup>197</sup> *Ibid.*, 77.

<sup>198</sup> *Ibid.*, 78.

<sup>199</sup> *Ibid.*, 80.

<sup>200</sup> *Ibid.*, 82.

<sup>201</sup> Bazin, 13.

it forever, a way of collecting and classifying nature.<sup>202</sup> The polar bear had already been “photographed” by the makers of the diorama before Sugimoto “rephotographed” it both with his “closed-eye vision” and then with his camera.<sup>203</sup>

Sugimoto’s use of a large format camera slows down the process of making the picture resulting in negatives containing a myriad of intense detail. This results, states Matsumoto, in photographs that demand a slower, more considered scrutiny from the viewer, and as such, shifts the experience of photography closer to historical, representational painting. For Sugimoto, the question is not one of self-reflexivity, of referring to himself, but of reconsidering photography’s relationship to our perception of the world. Photography and human perception are not two different things; rather, photography is simply an extension of our way of processing the world, and, for Sugimoto, it always has been, even before the invention of the medium.<sup>204</sup> By linking the photographer and the camera with the world beyond the lens, Sugimoto echoed certain investigations by other visual artists of the time, in particular minimalists such as Donald Judd and earthwork artists such as Robert Smithson. For them, art was not separate from the world but was one with it. Indeed, states Matsumoto, “art was literally made out of the stuff of the world, out of light or earth, and was defined by – and in turn defined – the space around us.”<sup>205</sup> For Sugimoto, the dioramas he was so drawn to at the Museum of Natural History held a strange position between reality and illusion. By recognizing that the dioramas were already like photographs, Sugimoto suddenly had a way not so much of recognizing the elements of photography but of understanding the photographer within

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<sup>202</sup> Matsumoto, 25.

<sup>203</sup> *Ibid.*, 26.

<sup>204</sup> *Ibid.*, 24.

<sup>205</sup> *Ibid.*, 24.

himself. He began to comprehend that, for him, “photography does not exist separately from the world, it is not an invention created to capture truth beyond the lens, but already exists as an innate perceptual tool within the mind.”<sup>206</sup> Sugimoto’s interest in the diorama, and his subsequent investigations of wax museums in his *Chamber of Horrors* (Figure 4.5) and *Portraits* (Figure 4.6) series, lies less in using photography to capture some external truth existing outside of himself than in “finding the photographic essence already in operation within the human mind.”<sup>207</sup> Sugimoto draws our attention to the ways we have developed to overcome time and space in order to make meaning out of the world as it continually flows around us.<sup>208</sup>

Sugimoto went to Los Angeles in 1970 to study photography at the Art Centre College of Design. Over the following two years he developed an interest in Zen Buddhism. In the introduction to *Zen in the Art of Archery*, D.T. Suzuki suggests that a Zen artist:

...does not need, like the painter, a canvas, and paints; nor does he require, like the archer, the bow and arrow and target, and other paraphernalia. He has his limbs, body, head, and other parts. His Zen-life expresses itself by means of all these “tools” which are important to its manifestation. His hands and feet are the bushes and the whole universe is the canvas on which he depicts his life for seventy, eighty, or even ninety years. This picture is called ‘history’.<sup>209</sup>

This process is echoed in Sugimoto’s desire to understand the diorama as a means of creating a ‘photographic’ history of the world. Indeed as Sugimoto has explained, he does not need a camera – covering one eye creates an image in his mind demonstrating that photography is not a tool separate from the world but is a part of it. In his introduction,

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<sup>206</sup> Matsumoto, 25.

<sup>207</sup> Ibid., 25.

<sup>208</sup> Ibid., 25.

<sup>209</sup> D.T. Suzuki, quoted in Eugen Herrigel, *Zen in the Art of Archery*, 26.

Suzuki quotes Hoyen of Gosozen (died 1140), who claimed that a true artist turns “the emptiness of space into a sheet of paper, the waves of the ocean into an inkwell, and Mount Sumeru into a brush...”<sup>210</sup> Similar to the early champions of optics theory, the camera obscura and pinhole cameras, Sugimoto argued for the existence of a photographic essence of the human mind. It is thought that a similar theory was experienced and explored by Dutch painter Johannes Vermeer in the seventeenth century, perhaps Sugimoto agreed since he photographed *The Music Lesson* in 1999 (Figure 4.7), a re-presentation of a tableau on view in Madame Tussauds Wax Museum in Amsterdam, of Vermeer’s painting *A Lady at the Virginal with a Gentleman (The Music Lesson)* (circa 1662-64).<sup>211</sup> This is one of the few colour photographs that Sugimoto had taken since his student days. This work is considered to be representative of Sugimoto’s exploration into the history of optical devices that are representative of evidence for an “internal photographic sensibility,” and eternal struggle to overcome the restrictions of time, space, memory and death. An affirmation that although the camera may be a modern device, it is a manifestation of an old way of seeing and understanding the world...“the camera is with the earth itself, part of nature, part of us.”<sup>212</sup>

Hiroshi Sugimoto’s most recent series of photographs, *Conceptual Forms* is based on another collection, that of nineteenth century scientific objects housed in the museum of the University of Tokyo. This series consists of forty-four large format black and white photographs, which are divided into two equal groups, *Mathematical Forms* (Figure 4.8)

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<sup>210</sup> Hoyen of Gosozen, quoted in Suzuki, *Zen in the Art of Archery*, ix. Found in Takaaki Matsumoto, *Hiroshi Sugimoto*, 26.

<sup>211</sup> *Ibid.*, 26.

<sup>212</sup> *Ibid.*, 31.

and *Mechanical Forms* (Figure 4.9).<sup>213</sup> The *Mathematical Forms* consist of stereometric models in plaster, their surfaces incised with precise curves. These models are used to assist students to understand complex trigonometric or circular functions. Also used as teaching aids, the *Mechanical Forms* are non-utilitarian machines used to demonstrate the available repertoire of basic movements caused by gears, levers, pumps and screw like forms.<sup>214</sup> In contrast to Marcel Duchamp, who moved objects from the functional realm to the nonfunctional realm of art, most notably his readymades, Sugimoto has photographed functioning nonutilitarian machines and forms, underscoring his objects 'separateness' from the utilitarian world. At the same time, states Yau, "these forms bear a resemblance to the machine-like *Bachelors* in Duchamp's enigmatic *Large Glass* (1951-23)."<sup>215</sup> The allusions to Duchamp and Brancusi are very much part of the meaning of these photographs. Sugimoto releases these forms from any known context, leaving the viewer to question their size and purpose. They are made out of metal and plaster, and so they appear to be both recognizable and remote. By photographing these objects very close-up, and from below, Sugimoto endows them with a "hyperreal monumentality we might associate with buildings and large sculptures."<sup>216</sup> Like the earlier *Diorama* series, the relationship between the original and the replica (or model) has been a recurring theme. Yau argues that in contrast to those who believe that a copy of a copy is one more proof that both 'originality' and 'the author' are obsolete concepts, and that Art History (and the belief in innovation) has come to an end, "Sugimoto's

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<sup>213</sup> John Yau, "Hiroshi Sugimoto, Enigmatic Objects," In, *Aperture*, 50 (0036, 2004).

<sup>214</sup> Yau, 50.

<sup>215</sup> *Ibid.*, 50.

<sup>216</sup> *Ibid.*, 50.

replicas of replicas suggest that reality is what is bizarre and unknowable. It is this very world that we inhabit that eludes understanding.”<sup>217</sup>

Sugimoto curated an exhibition of his own work titled “*Hiroshi Sugimoto: History of History*,” in 2003 for New York’s Japan Society. This exhibition, which consisted entirely of Sugimoto’s own works plus objects from his extensive collections of Japanese antiquities and other materials, was noted as offering “a visual evolution, confirming a kinship between art of the past and present ...revealing his own wit and sensibility.”<sup>218</sup> This self-designed exhibition, down to the hand written labels, linked Sugimoto to the early tradition of collecting and cabinets of curiosities. In her article for *Art in America*, Janet Koplos describes the exhibit stating: “While it opens with his collection of fossils, each a kind of “photograph” of the past and undoubtedly the oldest objects in the show, he disregards chronology to present an architectural-scale cabinet of curiosities, the disparate items spotlighted and featured for their own inherent fascination as well as for the unexpected conjunctions and contests he has chosen.”<sup>219</sup>

A photograph, like a diorama, is a way of making sense of the world and its history, by ‘reproducing’ what “the photograph ‘reproduces’ to infinity”, states Roland Barthes, “which has occurred only once.” As Barthes puts it: “the photograph mechanically repeats what could never be repeated existentially.” A way of designating reality without being separate from it, “of being thus, of being so...the *This* (this

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<sup>217</sup> John Yau, “Enigmatic Objects,” from *Aperture*, 50 (0036, 2004)

<sup>218</sup> Janet Koplos, “Portraits of Light,” from *Art in America*, 87 (February 2006)

<sup>219</sup> *Ibid.*, 87

Photograph and not Photography), what Lacan calls the *Tuche*, the Occasion, the Encounter, the Real, in its indefatigable expression.”<sup>220</sup>

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<sup>220</sup> Barthes, 4.

## Chapter Six

### The Exhibition: ‘*herbarium imaginaire*’ – concept – production – presentation

*A concept renders a slice of chaos available for thought...a concept is a pure becoming or event, history presents only the actualization of events: ‘the event in its becoming, in its specific consistency, in its self-positing as concept, escapes history.’<sup>221</sup>*

This chapter investigates the concept, production and presentation of my exhibition ‘*herbarium imaginaire*’ (imaginary herbarium). I discuss the context of the exhibition, its production and the gallery installation of photographs and auxiliary photography equipment, as well as the herbarium open house and display that was featured in conjunction with the exhibition (Figure 5.1).

The photography exhibition, ‘*herbarium imaginaire*’ developed as partial fulfillment of my M.A. degree program. The artistic production adds another dimension of research beyond textual analysis. The project builds on the research and expands on the history and context of collecting. The success of this project was due to the support of Herbarium Curator, Dr. Geraldine Allen and Collections Manager, Erica Guest, who kindly allowed me access to the herbarium plant collection, and Visual Arts Professor, Lynda Gammon, who was so instrumental in my work with pinhole photography. This exhibition was created in a collaborative manner, most specifically with the design and construction of the hand built photography equipment that was made exclusively for this project.

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<sup>221</sup> Gilles Deleuze and Felix Guattari, ‘What is Philosophy’, (trans. Hugh Tomlinson and Graham Burchell. NY: Columbia University Press) 1994. P. 110. Quoted in Peter Hallward, *Out of this World*, 140.

What is a Herbarium? An excellent description of what a herbarium is can be found on the UBC herbarium web site, which states:

A herbarium is a museum of dried plant specimens. Herbaria provide a permanent record of our changing flora over time, documenting all plant species discovered so far, their variation, and their past and present distributions. These specimens also hold a treasure trove of anatomical, chemical, ethnobotanical, and molecular information, and document the history of plant exploration.<sup>222</sup>

The UVic herbarium is associated with the Biology Department on the campus of the University of Victoria. It contains a permanent collection of approximately forty-eight thousand preserved plant specimens many of which were collected on Vancouver Island, the rest coming primarily from British Columbia, surrounding provinces and neighbouring American states. The exhibition complemented and expanded upon the mandate of the herbarium, which is to be a resource for students, researchers, and the broader university community.<sup>223</sup>

### *Concept*

Previously I have discussed how the interest of artists in working with materials that are generally not considered as art material, dates back to the early twentieth century. However, the current awareness about environmental concerns provide a new context influencing the investigation of ‘found’ or ‘ready made’ materials such as those located in natural history museums and botanical collections. In the ‘*herbarium imaginaire*’ exhibition I wanted to create a body of work that goes beyond merely photographing

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<sup>222</sup> UBC Herbarium web site: <http://www.botany.ubc.ca/herbarium>.

<sup>223</sup> Information regarding the mandate of the herbarium as well as collecting practices and botanical information is available at the UVic. Herbarium web site: <http://web.uvic.ca/~herb>.

collected plant specimens, and instead re-frame these items, change their context, use them as sources for representation, and open up new ways of contemplating both the objects themselves and the concepts to which they refer.

Botany students and researchers are the primary visitors to the herbarium. It was my intention to broaden the scope of viewership to include members of varied disciplines from within the university community, as well as encouraging viewership from beyond the university, in order to generate an interest and curiosity for, what had been for many, unfamiliar facilities of scientific research and knowledge. As well, it was my intention that viewers from beyond the arts community would visit the photography exhibition and consider the role of herbarium specimens as primary sources of inspiration and material for artistic creation, in this way enjoying the ‘cross pollination’ of disciplines and ideas that characterize the inventive processes of creativity, whether it be in art or science.

My desire in displaying the equipment associated with the photographs was to encourage the experience of curiosity and wonder (Figure 5.2). Curiosity and wonder (which has been discussed at length in previous chapters) have historically been experiential goals that have provided grounds for the display of objects from the early Renaissance through to the present day. I considered this installation to be an opportunity for myself, as both artist and curator, to construct for the audience a display that showed continuities and differences between the aesthetic evaluations and contexts in which the objects can be appreciated, producing not only a narrative but also an experience. In this way, while interacting with the art gallery space and the herbarium, the exhibition creates an experience which encourages the viewer to create her/his own narrative while looking at these objects and images. Thus, the exhibition provides an alternative to traditional art

historical academic research by using ‘exhibition’ as a method of inquiry, as well as providing a platform to inspire further inquiry and new understandings.

### *Production*

The photographs featured in the exhibition were created using hand-built pinhole photography equipment that was designed and constructed exclusively for this project. As well, the images were developed and printed using traditional darkroom chemical processing.

The photography equipment consisted of:

- Two pinhole cameras both equipped with specific apertures, designed with complimentary focal lengths and able to hold a single 4x5 large format film cartridge.
- A custom crafted light box that provided back lighting for the specimens.
- A custom crafted ‘quad-pod’ which, when placed over the light box, provides a place to secure the camera.
- The ‘quad-pod’ was covered in black drapery used to control the direct and ambient light available while the film was being exposed.
- The entire collection of equipment was set up in a darkroom and, as is characteristic to the nature of pinhole photography, lengthy exposure times, (of approx. 7 to 15 minutes depending on the specifics of each specimen), were applied.

## *Presentation*

*...a serious photographer trying to capture a moment, perhaps not realizing that tripping the shutter captures nothing, that everything on the ground glass changes before the light hits the film plane. What the camera allows you to do is to invent, to create. That's really what photographs are. Not records of moments, but rather imaginative acts.* Thomas King<sup>224</sup>

The photography exhibition ‘*herbarium imaginaire*’ was presented in the main gallery of the visual arts building in the faculty of fine arts at the University of Victoria on May 20<sup>th</sup>, 2008. It showcased the photographs as well as the photography equipment used in the project. The collection of photographs featuring the herbarium specimens consisted of twelve black & white photographs comprising of six sets of two images per specimen, which collectively made one work (Figure 5.3). On an adjacent wall there was a display of three large black & white mural photographs, each approx. 4 ft X 4.5 ft., that featured images of the herbarium and some of the students and staff that work within the herbarium (Figure 6.4). In an adjacent area of the gallery an installation display of the pinhole cameras and auxiliary equipment was featured. My intention for displaying the equipment along with the images was to introduce viewers to the production processes involved with the making of the photographs as well as drawing attention to historical connections between photography, science, art and the creative processes of image making (Figure 5.5).

Upon leaving the gallery space, visitors made their way to the herbarium where a presentation curated by the collections manager, Heidi Guest, had been installed. The display featured instructive material and equipment used by students and botanists in the

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<sup>224</sup> Thomas King, *The Truth About Stories: A Native Narrative*, 43.

collecting, preservation, naming and cataloguing of plant specimens (Figure 5.6). Heidi was available to offer discussion, explanations and answer questions. This viewing experience was intended to encourage the visitors to connect the processes of production displayed in the artistic and scientific pursuits, allowing for alternative readings of the material. As well, there was the intent to explore the continual and historical association between scientific inquiry and photography, keeping in mind that neither collections nor photographs are stable sites of knowledge.

From its earliest stages of development the exhibition was intended to create an opportunity for an experience that would encourage viewers to explore new ways of interpreting the objects displayed. Unfortunately, due to time restraints and other conditions, the exhibition did not run long enough to facilitate a survey that could quantify the success of that endeavor. I can state though, the viewer response that I did receive supported the concepts put forward by the interdisciplinary nature of the exhibition as well as the value of the 'experiential' as significantly enhancing and strengthening the viewing experience. As a result, it is my hope to pursue a similar exhibition at some future date.

## Chapter Seven

### Conclusion

Throughout this thesis I have attempted to define the role of ‘curiosity’ and ‘wonder’ as significant contributors to the art-making process in both a historical and contemporary artistic sensibility. In its initial stage, this study was also inspired by the lack of information about the role photography has played, and continues to play, as an artistic as well as investigative method of inquiry into, what Foucault has described as, ‘systems of order’. These two seemingly divergent historical topics, curiosity and photography, intersect at numerous junctures and the exploration of these points of overlap have been the main interests of this research. This study has been founded on two principal outcomes, a completed researched thesis paper in conjunction with, and complementary to, an artistic photography exhibition that aspired to contribute an experiential dimension to the way in which knowledge and information can be made available to the viewer.

I began by investigating the early history of collections of curios and ‘cabinets of curiosities’ that established the practice of removing objects, primarily those of nature, from their original environments and juxtaposing them in collections that ensued status and prestige upon the collector. Over time collections grew to inhabit different meanings and significance eventually evolving into the scientific systems of order, hierarchies of knowledge and the primacy of reason that became identified with the age of Enlightenment. There were many outcomes to the division of objects into categories of art and science, *naturalia* and *artificialia*, two of which, collections and photography, became the primary focus for my case study. As well, I discussed the resurgence of the ‘theatre of wonder’ characteristic of the early ‘cabinets of curiosities’ as it was

investigated and depicted by artists of the twentieth century art movement known as Surrealism. The Surrealist's artists, primarily Breton and Duchamp, inspired one of the most important artistic legacies of the twentieth century, and one that is still a fundamental principle in contemporary art, that of the 'ready made' as an art object. The 'ready made' served to inspire generations of artists and social theorists to explore notions of production and consumption as well as the postmodernist examination of hierarchies and mega-narratives. This has resulted in a flourishing of artistic explorations into the use of collections and archives, including Western cultural institutional icons such as museums, and in this case, herbariums, as primary sources of artistic material and inspiration. Chapter three serves as a bridge to the historical legacy of the parallel developments of scientific inquiry and the development of photography. From its earliest beginnings, photography has served as both an artistic tool and an instrument of scientific inquiry. These two seemingly divergent aspects were melded seamlessly in the pivotal work of seventeenth-century Delft painter Johannes Vermeer, with his employment of the camera obscura as an instrument of artistic exploration.

The first three chapters served as the platforms on which to establish my case study, photographer Hiroshi Sugimoto, and my photography exhibition, '*herbarium imaginaire*'. In chapter four I discuss the work of Hiroshi Sugimoto in relation to and as an advancement of, the Duchampian inspired work of many contemporary artists. Sugimoto's series *Dioramas* is a seminal series in the use of natural history museum displays and their representation as structures of knowledge. By way of the production of photographic images of these constructed representations of nature, the viewer is encouraged to question: *what* do they see? And *what* does it mean? I have discussed the

concept that our collective memory is constructed by collections and, in turn, many of these collections are preserved in museums. The images produced by photographing museum dioramas and herbarium specimens alert the viewer to the premise of photography as a representative of ‘truth’ and at the same time drawing attention to the context, the ‘thing’ itself – the collected thing that stands in for ‘all’ other objects in the system of order. At the heart of this is the question of our relationship with ‘nature’ and how, like the photograph itself, collections, such as dioramas, serves the desire to fix an infinitely more complex concept into a framed and organized one that becomes available for viewing. Chapter five focuses on the photography exhibition, ‘*herbarium imaginaire*’ which was conceived and implemented on two main principles: the bringing together of seemingly divergent disciplines, art and science, into each other’s spaces creating a project that was representative of a shared heritage, and, an exploration of the use of historical photographic technology, the pinhole camera, as a particularly unique method of inquiry, one that embraces the concepts of curiosity and wonder.



Figure 1.1

Bruegel and Peter Rubens, *The Sense of Sight*, one of a series from, 'The Five Senses', 1617.

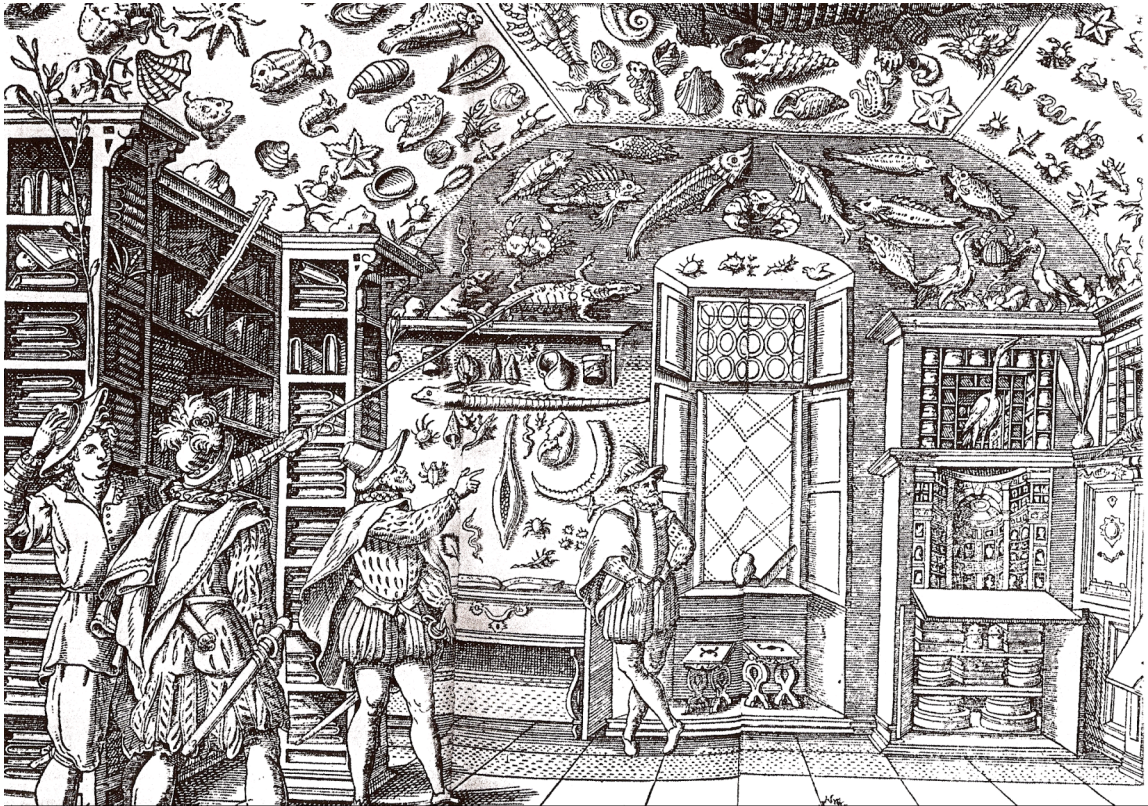


Figure 1.2.

*The Museum of Ferrante Imperato in Naples, the frontispiece of his catalogue, Dell'istoria naturale, 1599.*

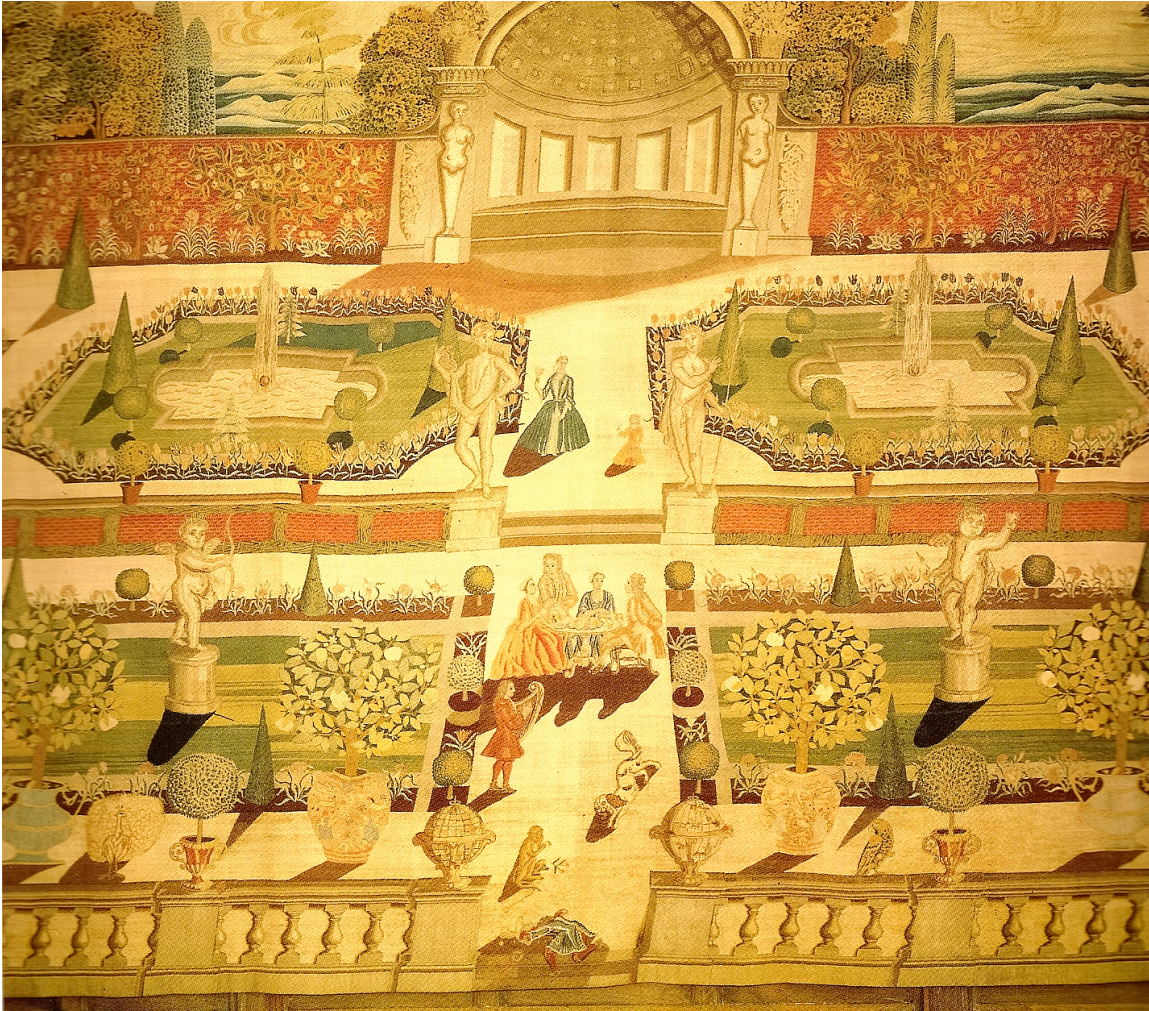


Figure 1.3

*The Stoke-Edith Needlework Tapestry*, showing formal English gardens in the sixteenth-century, hangs at Montacute House in Somerset.



Figure 2.1

Andre Breton in his flat with his extensive collection of curios.



Figure 2.2

*The Surrealist Exhibition* at the Charles Ratton Gallery, Paris, 1936, photographed by Man Ray.

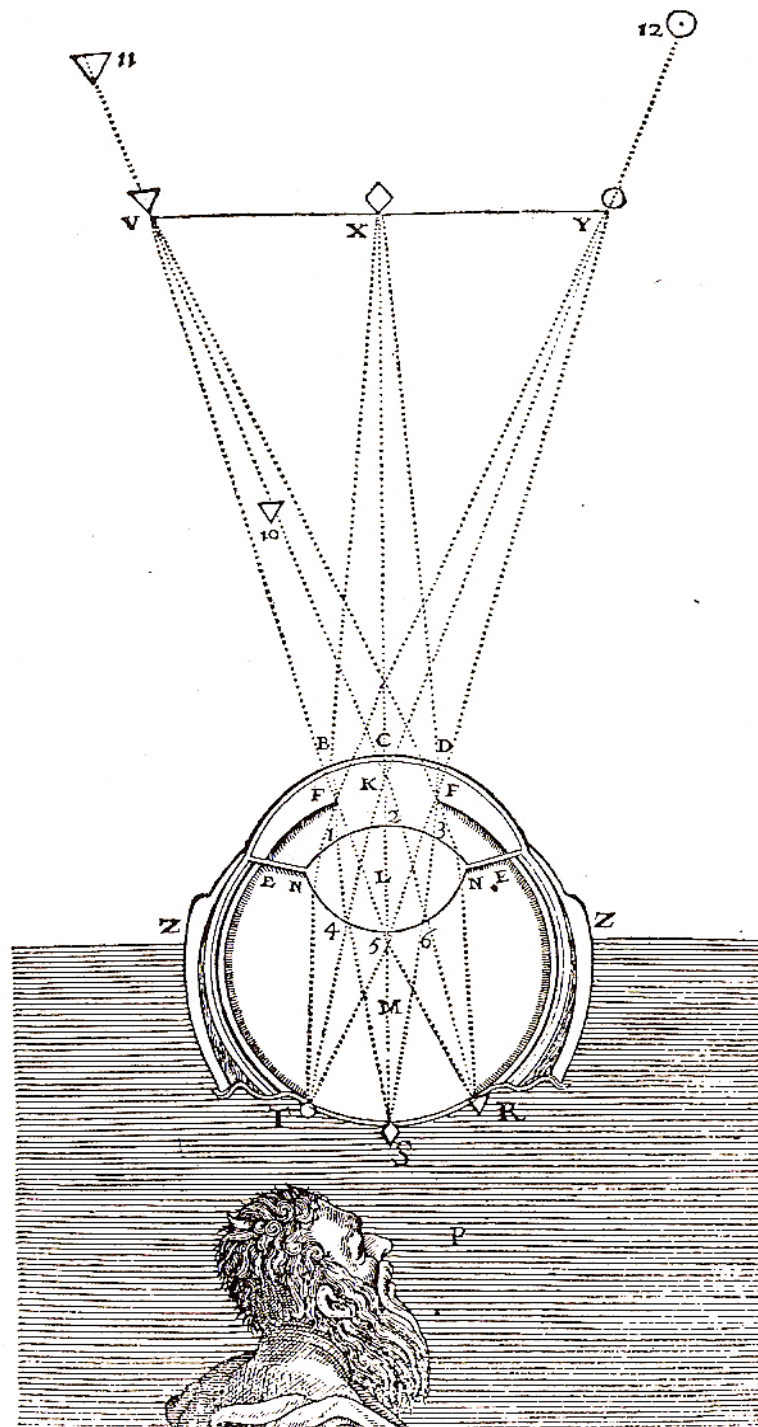


Figure 3.1

Descartes (1637), *La Dioptrique*, Formation of the retinal image in the vertebrate eye, according to Descartes.

## Camera Obscura

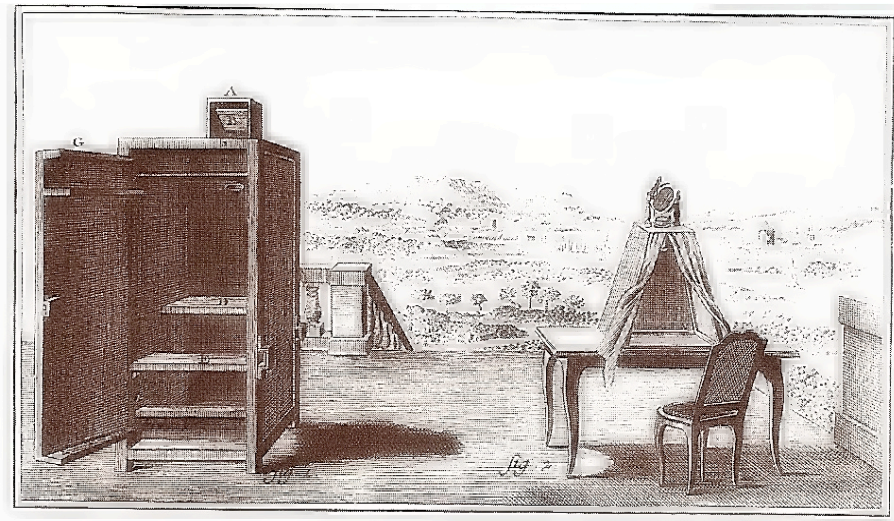


Figure 3.2

Camera obscuras. Mid-eighteenth century

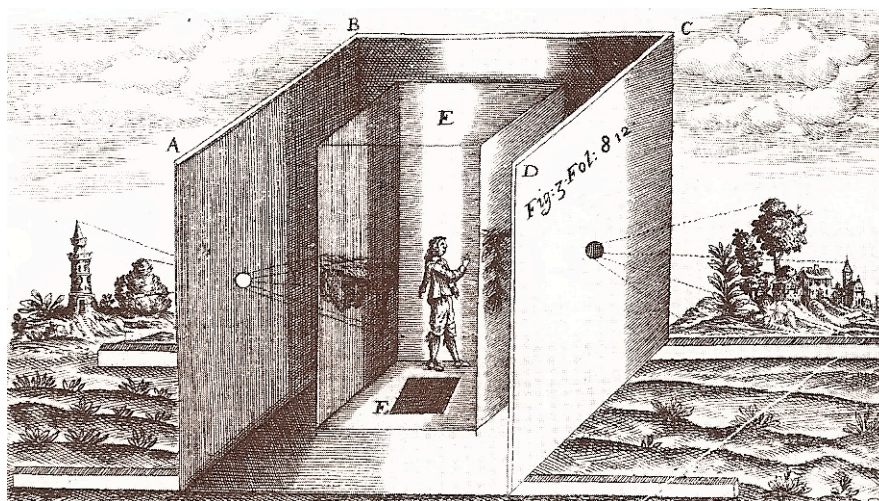


Figure 3.3

Camera obscura, 1646.

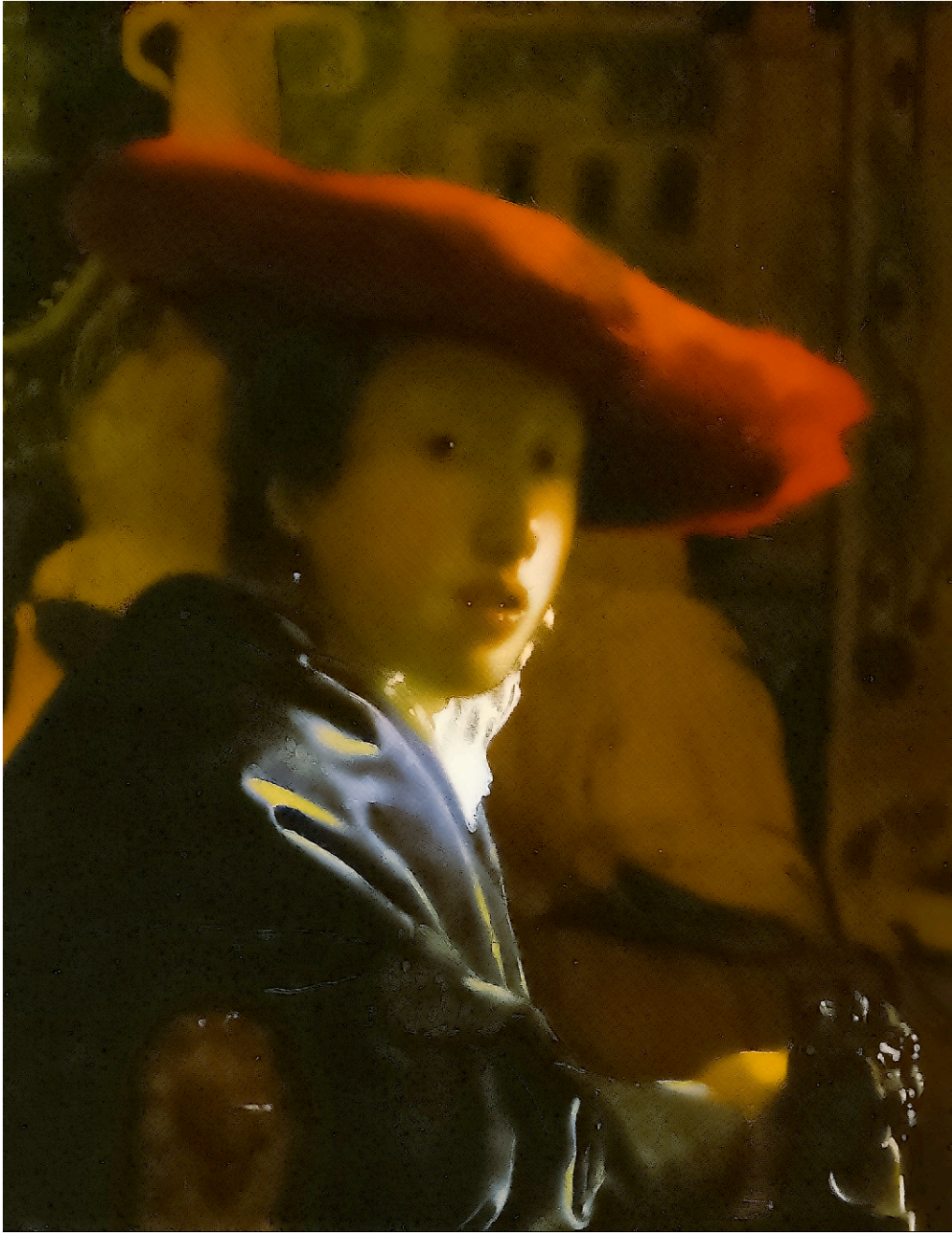


Figure 3.4

Johannes Vermeer, *The Girl with the Red Hat*, c. 1666-67, oil on panel.



Figure 3.5

Johannes Vermeer, *The Lacemaker*, c. 1669-1670.



Figure 3.6

Johannes Vermeer, *The Milkmaid*, c. 1658 – 1660.



Figure 3.7

Johannes Vermeer, *Girl with a Pearl Earring*, c. 1665-1666.

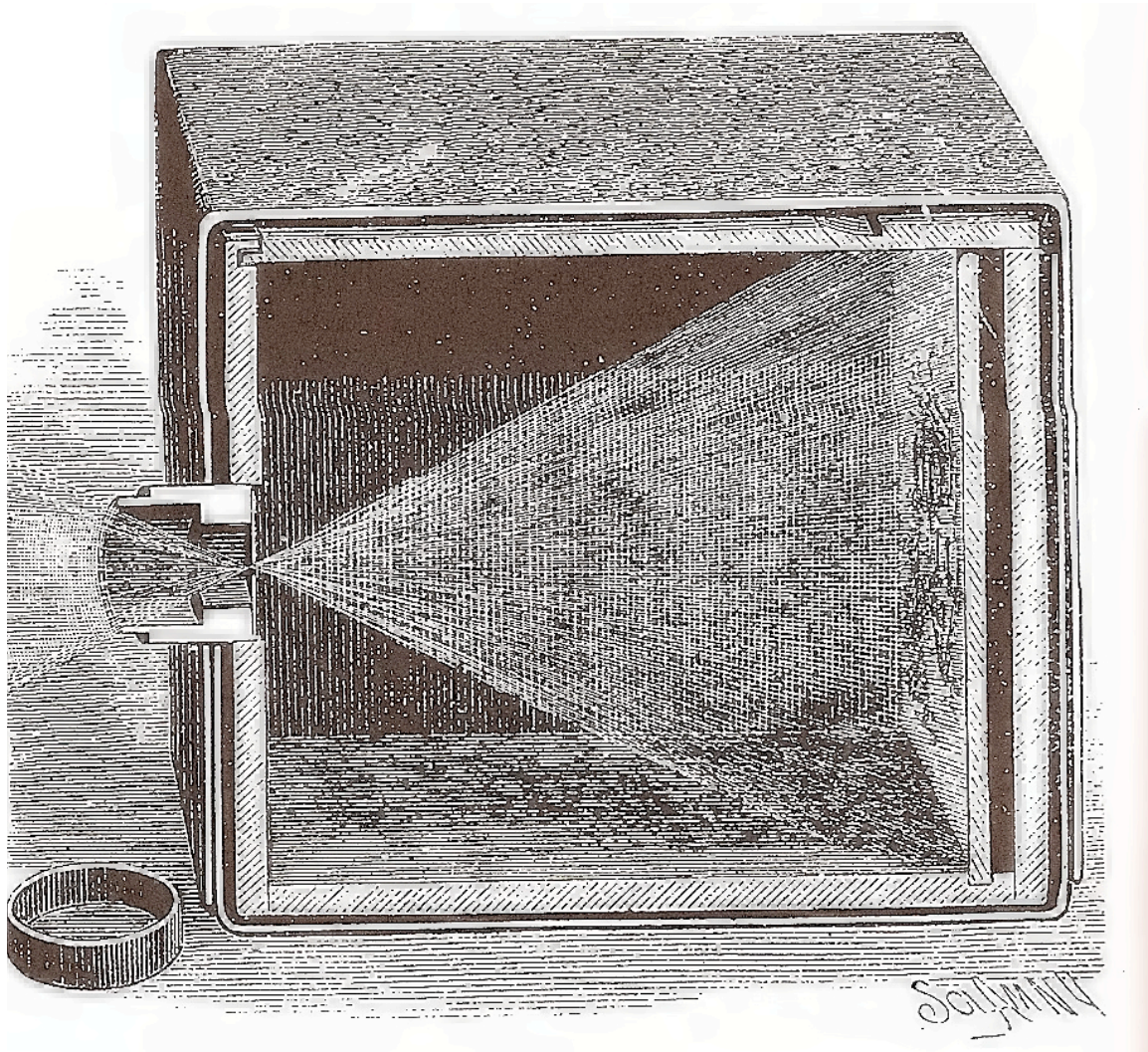
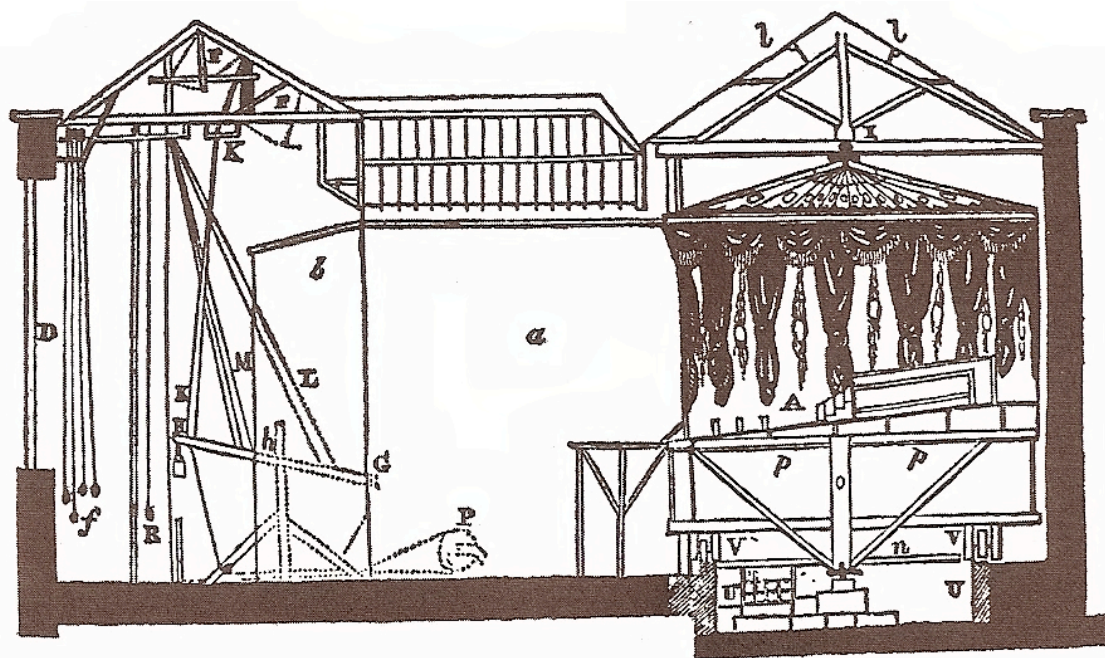


Figure 3.8

Glen Pinhole Camera from *One Dollar Photographic Outfit*, *Scientific American* 65, (4 July 1891) p. 5.



THE DIORAMA.

Figure 4.1

London Diorama (1823).



Figure 4.2

Hiroshi Sugimoto, *Polar Bear*, (1976), from the 'Dioramas' series.

Gelatin silver print

47 x 58  $\frac{3}{4}$  inches (119.4 x 149.2 cm)



Figure 4.3

Hiroshi Sugimoto, *Earliest Human Relatives*, (1994), from the 'Dioramas' series.

Gelatin silver print

47 x 58  $\frac{3}{4}$  inches (119.4 x 149.2 cm)



Figure 4.4

Hiroshi Sugimoto, *Cro-Magnon*, (1994), from the 'Dioramas' series.

Gelatin silver print

47 x 73 inches (119.4 x 185.4 cm)



Figure 4.5

Hiroshi Sugimoto, *The Electric Chair*, (1994), from the 'Chamber of Horrors' series.

Gelatin silver print

16 9/16 x 21 1/16 inches (42 x 54.5 cm)



Figure 4.6

Hiroshi Sugimoto, *Anne Boleyn*, (1999), from the 'Portraits' series.

Gelatin silver print

58  $\frac{3}{4}$  x 47 inches (149.2 x 119.4 cm)



Figure 4.7  
Hiroshi Sugimoto, *The Music Lesson*, (1999).

Pigment print

53 1/8 x 41 3/4 inches (135 x 106 cm)

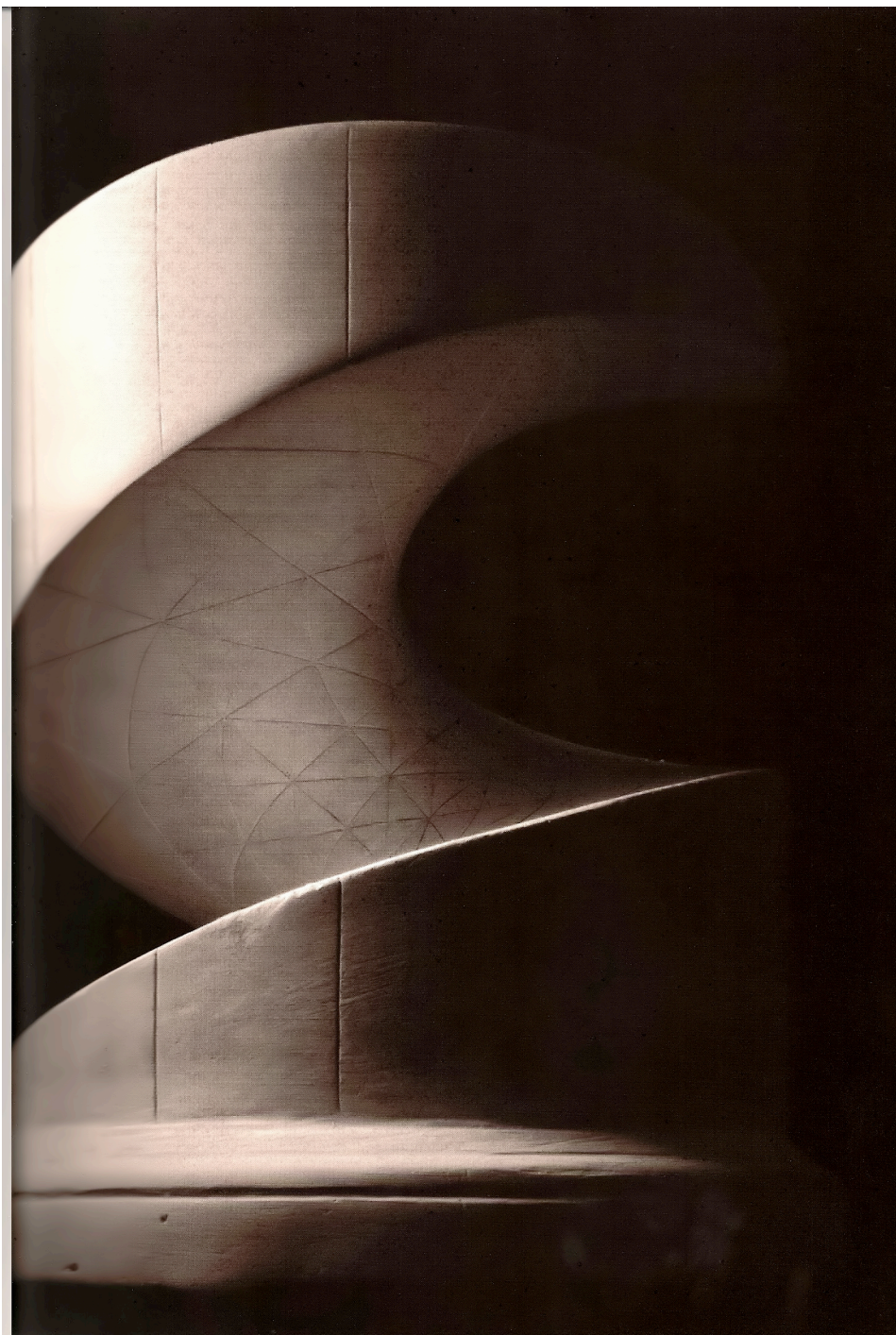


Figure 4.8

Hiroshi Sugimoto, *Helioid: minimal surface*, *Mathematical Form 0001*, 2004.

$$x = a \sinh v \cos u$$

$$y = a \sinh v \sin u$$

$$z = au$$

$$(0 \leq u < 2\pi, -\infty < v < \infty)$$

Gelatin silver print

58  $\frac{3}{4}$  x 47 inches (149.2 x 119.4 cm)



Figure 4.9  
Hiroshi Sugimoto, *Regulator, Mechanical Form 0028*, 2004.  
Gelatin silver print  
58 3/8 x 47 inches (149.5 x 119.4 cm)

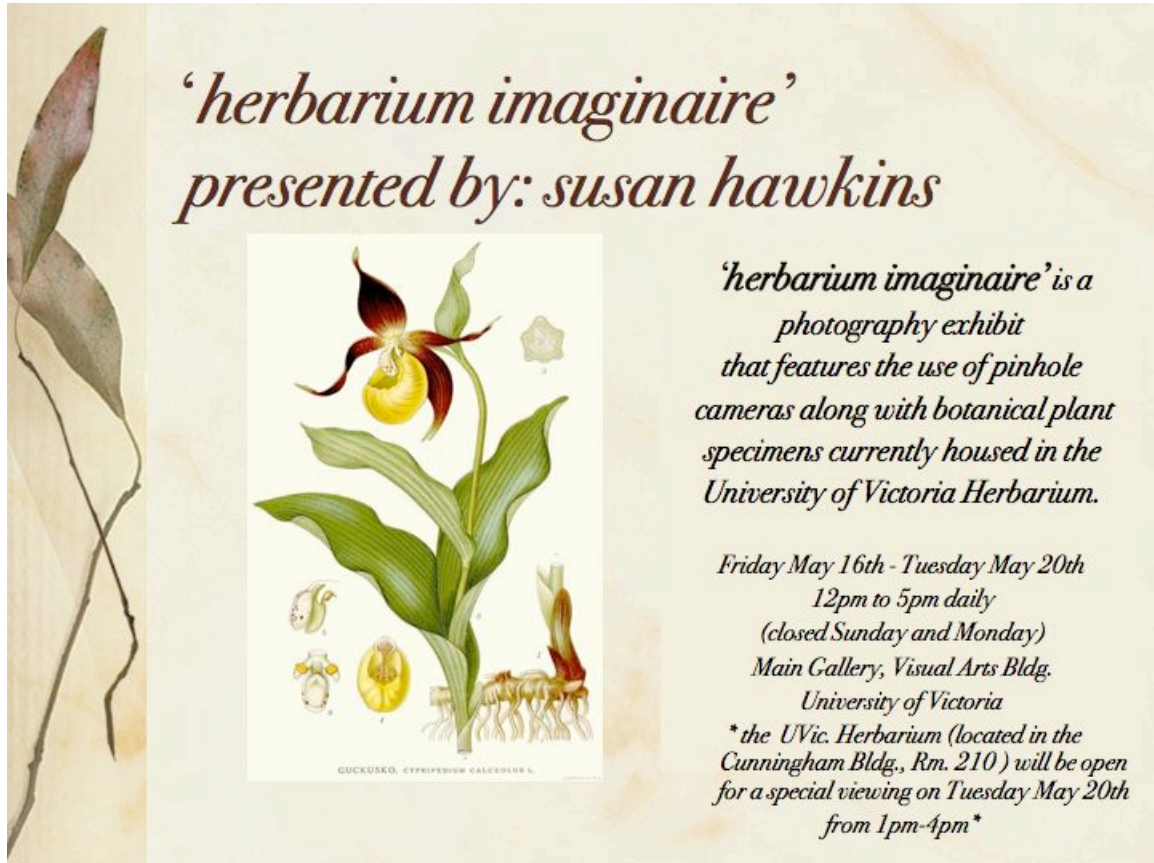


Figure 5.1

Susan Hawkins, *'herbarium imaginaire'* exhibition poster.

*'herbarium imaginaire'*  
presented by: Susan Hawkins

*Curiosity, it can be said, alerts us to the interface between art and science, with the "object" being suspended somewhere between the two. Curiosity interfaced with photography and botany are the main ingredients of this exhibit.*

*Pinhole photography is one of the earliest means invented for recording an image. By using hand built cameras and accessory equipment this project represents a return to the origins of photography and the sense of wonder that the early cameras evoked.*

*Characteristic to the nature of curiosity has always been the "collection." Many of the descendents of the early collections, such as herbariums, also represent an arena in which inquisitiveness is cross-referenced with intellectual curiosity.*

*The 'herbarium imaginaire' project, which uses plant specimens that are housed in the University of Victoria Herbarium, developed out of this sense of inquisitiveness and curiosity. It represents an exploration into the history of collected materials, specifically herbarium specimens, and the way in which new meaning can be derived when such objects are used as material for artistic creation.*

*I would like to thank the herbarium faculty, specifically Dr. Geraldine Allen and herbarium curator Heidi Guest, for all their support and for installing a presentation to accompany this exhibit.*

*I would also like to offer a special thanks to Frank Jackson for making the beautiful cameras and equipment used in this project.*

Figure 5.2

*'herbarium imaginaire'* exhibition didactic panel.



Figure 5.3.

*'herbarium imaginaire'* photography exhibit, botanical specimens.  
Photographs by Susan Hawkins (2008).



Figure 5.4

*'herbarium imaginaire'* botanical specimens.  
Photographs by Susan Hawkins (2008).



Figure 5.5

*'herbarium imaginaire'* mural photographs of the herbarium interior.



Figure 5.6

*'herbarium imaginaire'*, photography equipment including: pinhole cameras, light table and quad-pod.



Figure 5.7

UVic herbarium open house and presentation curated by Herbarium Collections Manager, Heidi Guest, in conjunction with the exhibition '*herbarium imaginaire*'.



Figure 5.8  
Herbarium open house and display of botanical specimens.



Figure 5.9  
Herbarium interior

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University of Victoria Herbarium: <http://web.uvic.ca/~herb>.