

HAND-COLORED ZOOLOGICAL ILLUSTRATIONS FOR “ALL CLASSES” OF BRITISH
SOCIETY: THE PUBLISHING HISTORY OF *THE NATURALIST’S LIBRARY*, 1833-1843

by

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ABSTRACT

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Under the Supervision of Professor Nigel Rothfels

Natural history grew in popularity in Britain among the middle class during the nineteenth century in large part due to the proliferation of cheap books and periodicals that featured illustrations of plants and animals. Prior to this period, books that featured hand-colored plates were considered a luxury that only the very wealthy could afford. Some nineteenth century naturalists like John James Audubon, continued to exclusively produce expensive folio books marketed to the upper class, but many others saw an opportunity to make more money by appealing to a popular audience by creating smaller works sold at a fraction of the price of traditional natural history works.

This thesis is a close examination of the publishing history of *The Naturalist’s Library*, a profusely illustrated forty-volume book series published in Edinburgh from 1833-1843 by William Home Lizars and Sir William Jardine. Each volume cost six shillings a piece and contained over thirty-five hand-colored steel engravings of animals. While six shillings was much cheaper than other illustrated natural history works at the time, it still restricted the audience to middle-class consumers. Lizars and Jardine were able to produce high-quality books at low prices through strategically using new technologies, scaling up their operations, and relying on the cheap labor of women hand coloring the illustrations. The immense popularity of

the series contributed to the spread of scientific information in the lower classes of British society.

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TABLE OF CONTENTS

LIST OF FIGURES	vi
ACKNOWLEDGMENTS	viii
Preface: My Encounter with <i>The Naturalist's Library</i>	1
Introduction	5
This Study: <i>The Naturalist's Library</i>	
Chapter One: Historical Context	13
Brief History of Illustrated Natural History Books in the West	
Changes in Publishing in Nineteenth Century Britain	
Hand-Colored Natural History Illustrations	
Chapter Two: <i>The Naturalist's Library</i>, 1833-1843	29
William Home Lizars	
Sir William Jardine	
<i>The Naturalist's Library</i>	
Influences	
Chapter Three: The Production of Illustrations for <i>The Naturalist's Library</i>	42
Artists	
Colorists	
Conclusion	55
The Pictorial Legacy of <i>The Naturalist's Library</i>	
REFERENCES	60

LIST OF FIGURES

Figure 1. Hand-colored steel engraving depicting a Hercules beetle (*Dynastes hercules*) from Volume II of Entomology from *The Naturalist's Library*, 1835. _____ 1

Figure 2. Complete forty volume set of *The Naturalist's Library* held by the American Geographical Society Library at University of Wisconsin-Milwaukee. Photo Credit: Georgia Brown, Public Services Librarian at AGSL. _____ 12

Figure 3. Eighteen volumes of *The Naturalist's Library* in the author's possession. The first ten are in original bindings. Seven volumes are in various bindings that were done in the taste of the previous owner or are later editions of the series. There is one unbound volume in paper covers. _____ 12

Figure 4. Woodcut illustrations from *Hortus sanitates*, "The Garden of Health," published in 1491. Photograph taken by the author of the copy held at UW-Madison Special Collections. _ 13

Figure 5: Eleazar Albin's A Natural History of English Insects from UW-Madison Special Collections at Memorial Library. Right: 1724 edition. Left: 1749 edition. _____ 23

Figure 6: Side by side comparison of Plate 35 from Mark Catesby's *The Natural History of Carolina, Florida and the Bahama Islands*. Left: 1731 edition from Biomed History and Special Collections at UCLA. Right: 1771 edition from Milwaukee Public Library. _____ 24

Figure 7: Title page and portrait of Linnaeus from the first volume of *The Naturalist's Library*, Humming Birds: Part I, published March 1833. _____ 29

Figure 8. Hummingbird illustrations from the first volume of *The Naturalist's Library*, 1833. 35

Figure 9. Left: Title page for *Constable's Miscellany: The Book of Butterflies, Sphinxes and Moths* by Captain Thomas Brown, 1832. Right: Title page for *The Naturalist's Library: British Moths, Sphinxes, &c.* by James Duncan, 1836. _____ 40

Figure 10. Left: Plate 71: The Death's Head Sphinx from *Constable's Miscellany: The Book of Butterflies, Sphinxes and Moths* by Captain Thomas Brown, 1832. Right: Plate 5: Death's head Hawk moth from *The Naturalist's Library: British Moths, Sphinxes, &c.* by James Duncan, 1836. _____ 41

Figure 11. Original artwork created for *The Naturalist's Library*. _____ 42

Figure 12. Spread of scrapbook of artwork for *The Naturalist's Libray* held by the National Library of Scotland in Edinburgh. _____ 44

Figure 13. Estimate of plate production included in a letter from Lizars to Jardine, 1843. ____	46
Figure 14. Original sunbird illustrations signed by James Hope Stewart. _____	47
Figure 15. Left: Blue-and-yellow Macaw illustration by Edward Lear from his book <i>Illustrations of the Family of Psittacidae</i> , 1832 from UW-Madison Special Collections at Memorial Library Right: <i>The Naturalist's Library</i> on Parrots, 1836 from the American Geographical Society Library. _____	49
Figure 16. Left: Author with Audubon's first volume of <i>The Birds of America</i> at Madison, 1827. Plate has Lizars name. Right: Illustration from in <i>The Naturalist's Library</i> on Gallinaceous Birds, 1834. _____	51
Figure 17. Collection of fish illustrations from <i>The Naturalist's Library</i> re-issued in <i>Leaves from the Book of Nature</i> , published by Lizars and Jardine in the 1840s. _____	55
Figure 18. Common flying fish from <i>The Naturalist's Library</i> book on Ichthyology, 1840 ____	56
Figure 19. Hand-colored plate from <i>Naturhistorischer Bildersaal des Thierreiches: nach William Jardine</i> held by Department of Special Collections at University of Wisconsin-Madison Memorial Library. _____	57

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I am eternally grateful for the work of librarians and archivists. A large part of this thesis is based on archival collections located in Edinburgh, Scotland that I was not able to view in person. Library staff at the National Museums Scotland and the National Library of Scotland helped me locate materials through remote reference. I want to especially thank Georgia Rogers at the National Museums Scotland for scanning hundreds of pages of correspondence of the William Jardine Papers for me over several weeks. This thesis would not be what it is without their hard work. Closer to home, I was able to view many relevant materials related to *The Naturalist's Library* at the American Geographical Society Library at the UWM Libraries with the help of Public Services Librarian Georgia Brown. I benefited from discussing my thesis with Robin E.

Rider, Curator of Special Collections UW-Madison Memorial Library. Robin provided me with great book recommendations about natural history in the nineteenth century.

I have had the good fortune of working for two incredible libraries and I am thankful for my colleagues at both who have heard me talk about this project at various stages for years. Thanks again to Max Yela, Head of Special Collections at the University of Wisconsin-Milwaukee Libraries for changing my life by hiring me as a student employee in 2017. Max has pushed me to be a better writer, historian, and librarian. I want to give a shout out to Alice Ladrack, Department Manager of UWM Special Collections, and all my fellow interns for making my time working there so fun and inspiring. Thank you to my friends and colleagues at Milwaukee Public Library in the Humanities and Special Collections departments for the amazing work you do.

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Preface: My Encounter with *The Naturalist's Library*



Figure 1. Hand-colored steel engraving depicting a Hercules beetle (*Dynastes hercules*) from Volume II of Entomology from *The Naturalist's Library*, 1835.

Milwaukee Public Library boasts over 2.7 million books and materials in its collection.¹ A large percentage of these items are stored in the four floors below the public areas of Central Library. Known to the staff as the tiers, these floors hold a treasure trove of printed materials such as books, maps, periodicals, and newspapers that can be called up to the main floors of the library by patron request. I have worked for Milwaukee Public Library since August of 2008, and routinely have projects that involve going down to the tiers, which can feel disorienting because of the low ceilings and dim lighting. In many areas you must flip on the lights as you go, with written reminders posted at the end of the aisles to turn the lights back off when you leave.

¹ "Central," MPL, Milwaukee Public Library, 2021, accessed March 27, 2022 https://www.mpl.org/hours_locations/central.php.

In the summer of 2017, I began to look at the books stored on the tiers with fresh eyes. I just finished a course at the University of Wisconsin-Milwaukee titled “History of Books and Printing” taught by Max Yela, head of UWM Special Collections. After Yela’s class, my conception of books was radically altered. I could now see them as objects worthy of investigation beyond the content printed on their pages. This was my first introduction to the growing scholarly field of “book history.” After the conclusion of that class, Yela hired me as a student employee at UWM Special Collections.

Working at UWM Special Collections was a transformative experience and I was encouraged to write weekly blog posts about materials in the collection. This served as a crash course in book history, and I was amazed by the numerous entangled relationships in the world of print. I was especially interested in the production of illustrations in books, because for most of printing history it involved labor intensive processes such as cutting relief woodblocks or engraving into metal. By today’s standards, these illustrations would be considered individual works of art.

I continued to work at Milwaukee Public Library part time, and I was able to apply this new knowledge to the collections stored in the basement tiers. I would go down to 3T, or the third basement tier, in search of nineteenth century books that contained woodcuts, engravings, and lithographs. I would marvel at the artistry found hidden in between the covers of long-forgotten titles. I would be especially thrilled if the illustrations were in color, because depending on when the book was printed, the color was hand painted or achieved through the equally laborious process of chromolithography.

It was during one of these expeditions down to 3T that I encountered *The Naturalist’s Library* for the first time. At first glance the set of books were unassuming, especially given that

at some point the set was rebound into green vinyl library bindings meant to increase the durability of the books (Figure 1). I would later find out that there is also a set of *The Naturalist's Library* stored in Milwaukee Public Library's Rarities department that has period appropriate bindings, but that set was published about a decade after the series' first run. The set stored on 3T is an early edition.

There were several factors that drew me to *The Naturalist's Library*. First was the size, the books are quite small, roughly 7 by 4 ½ inches. Second was the quantity, there are forty volumes in total, and they take up almost two shelves. The third was the title because I was, and continue to be, obsessed with all pre-twentieth century natural history books. What made me fall in love with the series were the illustrations. Each of the forty volumes contained over thirty hand-colored steel engravings. This led me to question how this was possible, because examining the advertisement section reveals that the publishers were highlighting the affordable price of six shillings per volume.

I share this story of my relationship with *The Naturalist's Library* because I am of the belief that our personal connection with books informs our understanding of them. Max Yela writes in "The Book as Relationship" that this brings us back to a "basic understanding of the book as a medium that is its own content, which in relation to its activator becomes a doorway to a rich variety of other relationships."² Meaning that I activated *The Naturalist's Library* when I picked up a volume from the shelves in the basement of Central Library. Flipping through the pages I began to ponder the circumstances and people responsible for its creation.

² Max Yela, "The Book as Relationship" catalogue for the exhibition Position / Opposition by Jessica Meuninck-Ganger (Johannesburg: Ultra Litho for Gallery AOP, 2011), 2-3.

Since that initial encounter with *The Naturalist's Library* in 2017, I have made the study of print culture and book history a core part of my scholarly pursuits. I have taken two wonderful continuing-education courses that greatly informed my study of illustrated natural history books. The first was at California Rare Book School in the summer of 2019, "Illustrated Scientific Books in Early Modern Europe" taught by Daniela Bleichmar, Professor of Art History and History at the University of Southern California. The second was in the summer of 2021, through the Rare Book School at the University of Virginia, "The Printed Book in the West since 1800" taught by Eric Holzenberg, Director of the Grolier Club in New York City. Both these classes, in tandem with conversations with Max Yela, Head of UW-Milwaukee Special Collections and Robin E. Rider, Curator of Special Collections at UW-Madison Memorial Library, helped me understand how *The Naturalist's Library* fits into the history of books and printing in the West. My advisor Nigel Rothfels helped me place the zoological illustrations found in *The Naturalist's Library* into the context of the history of animals and human interpretations of them.

Introduction

The nineteenth century is known for some of the most lavishly illustrated natural history books ever produced. Well-known figures like John James Audubon and John Gould created exorbitantly priced folio books of hand-colored plates that only the upper class could afford. Audubon and Gould used the traditional subscription publishing model, which meant they acquired several hundred wealthy patrons to finance their large-scale works in installments. During the same period, Europe experienced a boom in printed materials due to technological advances in printing and growing literacy rates among the middle class. British publishers began to set their sights on a growing group of “common readers” and experimented in new formats such as number publications, miscellanies, and cheap periodicals.³ Increased output facilitated by machines and steam power did not gain wide implementation until the mid-nineteenth century, so many printers met the increased demand for cheap publications through manipulating traditional hand-processes and scaling up their operations. Illustrations were a desirable feature in books and periodicals, and publishers used images as a marketing tool to appeal to new groups of print consumers.⁴

Natural history grew in popularity in Britain among the middle class during the nineteenth century in large part due to the proliferation of cheaper books and periodicals that

³ Richard D. Altick, *The English Common Reader: A Social History of the Mass Reading Public, 1800-1900*, 2nd ed., (Columbus: Ohio State University Press, 1998), 267-274.

⁴ Philip Gaskell, *A New Introduction to Bibliography*, rev. ed. (Newcastle, DE: Oak Knoll Press, 1995), 189-190; Patricia Mainardi, *Another World: Nineteenth-Century Illustrated Print Culture* (New Haven: Yale University Press, 2017), 77-82.

featured illustrations of plants and animals.⁵ For most of history, naturalists were typically men of means who had the time, education, and connections to participate in correspondence networks and natural history societies. Amassing personal libraries of expensive, profusely illustrated natural history books was considered an essential activity within these groups of gentleman naturalists.⁶ During the late 1820s and early 1830s, publishers began marketing illustrated natural history books to the middle class for their own personal libraries at drastically reduced prices.

It was an era of two extremes, and historians tend to focus on either elite or popular natural history publications. There is a largely unexplored overlap between these two worlds that existed during the first half of the nineteenth century. Some naturalists and their publishers were producing both luxury folios for the very wealthy and cheaper illustrated works for a popular audience. There were significant changes to the look and practice of natural history in Britain during this period, and it is easy to generalize it as an era of popularization. While this is true, it glosses over transitional periods.

By 1850, natural history developed into its own fully formed literary genre that had a distinctly Romantic influence. There was an explosion of cheap popular works by authors such as Philip Henry Gosse and Arabella Burton Buckley who utilized a specific style of language in their books that was characterized by an emotional and personal response to nature and an

⁵ Barbara T. Gate, "INTRODUCTION: WHY VICTORIAN NATURAL HISTORY?" *Victorian Literature and Culture* 35, no. 2 (2007): 539–549.

⁶ Anne Secord, "Corresponding Interests: Artisans and Gentlemen in Nineteenth-Century Natural History" *The British Journal for the History of Science* 27, no. 4 (1994): 383–408; see also David Elliston Allen, *The Naturalist in Britain: A Social History* (Princeton, N.J: Princeton University Press, 1994) for analysis of the organization and social framework of British gentleman naturalists.

obsession with details, facts, and identification. Studying nature was considered a religious experience by many of these natural history popularizers. Early precursors of this style of romantic natural history were authored by Gilbert White and Thomas Bewick, whose books described the English countryside. Diana Donald argues “for Bewick, as for Gilbert White, nature presented an image of divine virtue, suitable as a pattern for the ordering of human affairs.”⁷ The spread of the participatory style of natural history can be attributed to the many reprints of their works which served as field guides. Additionally, the expansion of train travel and seaside holidays allowed many more people to explore the natural world themselves. Lynn L. Merrill argues in *The Romance of Victorian Natural History* that popular natural history books taught people to see the world in a specific way and outlined the practice of being an amateur naturalist: “What does the naturalist do? He looks closely, quantifies, classifies, collects, describes. He makes pictures, visual representations, and attaches individual names to them. He sees the world in terms of ‘minute particulars.’”⁸ Many mid-nineteenth century popular natural history books were liberally illustrated with black-and-white wood engravings. Color illustrations were increasingly created with a new printing process called chromolithography that became more widespread, replacing hand-colored engravings.

Natural history was also seen as suitable recreation for the lower classes of British society. William Paley’s book *Natural Theology* published in 1802, posited the study of nature as a spiritual and pious activity because it meant you were studying “God’s creation.”⁹ The labeling

⁷ Diana Donald, *Picturing Animals in Britain, 1750-1850*. New Haven: Yale University Press for the Paul Mellon Centre for Studies in British Art, 2007), 56.

⁸ Lynn L. Merrill, *The Romance of Victorian Natural History* (New York: Oxford University Press, 1989), 40.

⁹ Merrill, *The Romance of Victorian Natural History*, 190-215.

of natural history as a morally upright activity fit right in with the desire of reform-minded groups like the Society of Diffusion of Useful Knowledge, founded in London in 1826. The SDUK helped popularize natural history through cheap print because they saw it as a way of educating the lower classes and quelling radicalism.¹⁰

This Study: *The Naturalist's Library*

I am arguing there was an intermediary period between the old way of publishing natural history books prior to 1825, when the consumers were ultra-wealthy gentleman naturalists, and 1850, when there were numerous cheap “romantic” natural history publications. During this intervening time of roughly 1825-1850, illustrated natural history books retained many aspects of their prior form but were repackaged into smaller formats. Publishers realized there was a large amount of money to be made by capitalizing on new consumer markets if they were able to iron out the right mix of new technology and human labor to produce attractive and inexpensive books.

This thesis is a close examination of the publishing and production history of *The Naturalist's Library*, a popular forty-volume book series published in Edinburgh, Scotland from 1833-1843 by William Home Lizars and Sir William Jardine. Each volume cost six shillings and included over thirty hand-colored steel engravings, which Lizars and Jardine wrote would enable “all classes to procure information regarding the *Great Works of Creation*.”¹¹ While six shillings was much cheaper than many illustrated natural history works at the time, especially ones that featured numerous hand-colored engravings, it still restricted their audience to middle-class

¹⁰ James Secord, “Progress in Print,” in *Books and the Sciences in History*, ed. Marina Frasca-Spada and Nick Jardine (Cambridge: Cambridge University Press, 2000), 374-380.

¹¹ “Advertisement” in Volume One of *The Naturalist's Library: Humming Birds: Part I* (Edinburgh, W. H. Lizars & Stirling & Kenney, March 1833), unpaginated.

consumers. What it does represent is a shift away from marketing to only the upper class because publishers realized they could make more money by tapping into a new market. Lizars and Jardine were able to coordinate the labor of authors, artists, printers, and colorists to cheaply produce tens of thousands of volumes during its original print run. The hand coloring of the *millions* of steel engravings was achieved through a team of women working at Lizars' printing firm.¹² The popularity of *The Naturalist's Library* contributed to the proliferation of images of animals and acted as a bridge between the traditional practice of luxe natural history publishing and a new popular audience.

My methodology involved closely examining volumes of *The Naturalist's Library* held by the American Geographical Society Library (Figure 2), Milwaukee Public Library, and the University of Wisconsin-Madison Special Collections. I also own a small personal collection of eighteen volumes which have allowed for closer inspection (Figure 3). Because the books still used many traditional hand-printing processes there are variations between copies, especially in the coloring of the illustrations. Many libraries hold complete forty-volume sets, but also singular volumes. People could subscribe to the series or buy volumes individually. The complete sets found in libraries are not a true representation of how consumers would have interacted with the series. Average people likely would not have bought all forty volumes. The sets I have seen in libraries are each in completely different order, grouped by animal type and not chronologically by publishing date.

During the original print run, almost every volume of *The Naturalist's Library* began with an advertisement section where William Home Lizars would explain the publishing details of the

¹² Christine E. Jackson, "The Painting of Hand-Coloured Zoological Illustrations," *Archives of Natural History*, 38 no. 1 (2011): 40.

series and boast about its wide popularity. Not every surviving copy contains this advertisement. There are several possible explanations for this: the section could have been removed when the book buyer had the books re-bound into bindings of their own personal taste, or because it was a later edition of the series. Thankfully, the set of forty volumes of *The Naturalist's Library* at the American Geographical Society Library contains the advertisement section, which has proved to be an informative source for how Lizars wanted to portray the series to his audience.¹³ Other printed material from the period informed my research such as reviews of the series found in newspapers and periodicals.

There are several archival collections related to *The Naturalist's Library* located in Edinburgh, Scotland. I requested scans from the repositories that hold these materials and have been able to view the collections digitally. The William Jardine Papers at the National Museums Scotland include correspondence between the printer William Home Lizars and his brother-in-law Sir William Jardine who was the editor of *The Naturalist's Library*. These letters offer an insight into the production of the series. There is also a collection of scrapbooks at the National Library of Scotland which contain original drawings, watercolors, working proofs and prints of the illustrations made for *The Naturalist's Library*. During the series production these were exchanged between the artists, printer, and editor for revision and approval.

I owe a great debt to several scholars who have written about this series in the past. Namely, Susan Sheets-Pyenson, whose article “War and Peace in Natural History Publishing:

¹³ Susan Sheets-Pyenson, “War and Peace in Natural History Publishing: *The Naturalist's Library*, 1833-1843,” *Isis* 72, no. 1 (1981): 71-72. When citing information from the “Advertisement” section of specific volumes I will list the bibliographical information as well as where the book falls in the original publishing order, which is difficult to understand from the title alone.

The Naturalist's Library, 1833-1843” chronicles the competition of the printer William Home Lizars with his rival Captain Thomas Brown for capturing the market of middle-class consumers who wanted affordable natural history books. Sheets-Pyenson’s table of the bibliographic information regarding the series was immensely helpful in understanding the original publishing order and I was able to cross-reference it with the advertisement section of each volume. Christine E. Jackson has written numerous articles and biographies of the central figures in this study, such as *Sir William Jardine: A Life in Natural History* as well as an article on the principal artist James Hope Stewart. Jackson has also written extensively on colored natural history illustrations and the different phases of their production over time.

The Naturalist's Library is a rich primary source and there are many angles of study that could be investigated in greater length, especially the coordination of the production of the text of the series since many leading British naturalists wrote for it. This thesis focuses on the production of the work as a consumer good, with special attention paid to the illustrations, which were considered the highlight of the series. Many of the surviving copies of *The Naturalist's Library* have uncut pages, which indicate the prior owner did not read the text, but almost certainly flipped through the books to look at the images. While there were several similar non-fiction series being produced during the same time as *The Naturalist's Library*, it was unique because of the quality and quantity of the hand-colored illustrations they included in each volume.



Figure 2. Complete forty volume set of *The Naturalist's Library* held by the American Geographical Society Library at University of Wisconsin-Milwaukee. Photo Credit: Georgia Brown, Public Services Librarian at AGSL.



Figure 3. Eighteen volumes of *The Naturalist's Library* in the author's possession. The first ten are in original bindings. Seven volumes are in various bindings that were done in the taste of the previous owner or are later editions of the series. There is one unbound volume in paper covers.

Chapter One: Historical Context

Brief History of Illustrated Natural History Books in the West



Figure 4. Woodcut illustrations from *Hortus sanitates*, “The Garden of Health,” published in 1491. Photograph taken by the author of the copy held at UW-Madison Special Collections.

The natural world has been filtered through the medium of the book for thousands of years. Greek physician Pedanius Dioscorides’ foundational work *De materia medica*, “On Medical Material,” was copied numerous times, and in several different languages, from antiquity through the Middle Ages. One of the earliest surviving illustrated manuscripts of *De materia medica* is the

Vienna Dioscorides, an early 6th-century Byzantine Greek illuminated manuscript that includes both illustrations of plants and animals.¹⁴

During the Middle Ages, bestiaries or “books of beasts” rose to prominence and included allegorical and religious depictions of animals that were painted by hand. Bestiaries were extremely popular all over Europe and were primarily used as a teaching tool for lay brothers in monasteries and schoolboys, especially for learning Latin. Sarah Kay wrote in their book *Animal Skins and the Reading Self in Medieval Latin and French Bestiaries* that “it is generally accepted that they become less sermon-like, more oriented toward the natural world and more secular in their uses, as time goes on.”¹⁵

Johannes Gutenberg was the first to introduce printing with moveable type in the West around 1450, which kicked off a printing revolution in Europe. Some of the earliest printed books were about nature, such as the *Hortus sanitates*, Latin for “The Garden of Health,” by Jacob Meydenbach, published in Mainz, Germany in 1491. The *Hortus sanitates* is an encyclopedic work with woodcuts of plants animals, birds, fish, and stones (Figure 4). Along with illustrations of plants and animals, the book also features many biblical scenes such as Adam and Eve. Although it is a printed book, the *Hortus sanitatis* was steeped in the Medieval herbal tradition.

The development of natural history as a scientific discipline began in the sixteenth century in large part because of people like German physician Leonhart Fuchs who championed the observational method of understanding plants. Fuchs’ landmark book *De historia stirpium commentarii insignes*, “Notable Commentaries on the History of Plants,” published in 1542 by

¹⁴ David Sutton, “Pedanios Dioscorides: Recording the Medical Use of Plants,” in *The Great Naturalists*, ed. Robert Huxley (London: Thames & Hudson, 2007), 33-37.

¹⁵ Sarah Kay, *Animal Skins and the Reading Self in Medieval Latin and French Bestiaries* (Chicago: The University of Chicago Press, 2017), 12.

Michael Isingrin of Basle, included illustrations that were based on actual plant specimens. Prior to this, illustrated herbals were not always useful in the identification of plants because the images were copied numerous times over the years. Although Fuchs was primarily the author the text, he exercised a great deal of control over the woodcut images created to illustrate his books and made a point of praising the accuracy of the engraver Veit Specklin, whose portrait is included in the herbal.¹⁶

The earliest printed zoology books were largely inspired by the shift towards naturalism by figures like Fuchs. Swiss naturalist Conrad Gessner's *Historia animalium*, "History of Animals," was a five-volume set of books published in 1551-1557 that marked a dramatic shift into looking at animals in a scientific and naturalistic way. *Historia animalium* is considered the start of modern zoology in the West and it was the most widely read of all the Renaissance natural history books.¹⁷ Before the 16th century, the study of nature in the West was heavily tied to the utilitarian pursuits of medicine and agriculture. In *The Science of Describing: Natural History in Renaissance Europe*, historian Brian W. Ogilvie wrote:

Unlike their medieval predecessors, Renaissance naturalists condemned the inaccurate or inadequate descriptions of the natural world that had been bequeathed from antiquity. The disparity between what they saw and what they read motivated careful investigation into the variety of the created world, and prompted the development of new descriptions modeled after the old. Initially, these descriptions were pictorial, but soon a technical descriptive language was elaborated that eventually took precedence, within the community.¹⁸

¹⁶ Sachiko Kusakawa, "Illustrating Nature," in *Books and the Sciences in History*, ed. Marina Frasca-Spada and Nick Jardine (Cambridge: Cambridge University Press, 2000), 90-113

¹⁷ Richard Ellis, "The First Animal Book," in *Natural Histories: Extraordinary Rare Book Selections from the American Museum of Natural History Library*, ed. Tom Baione (New York: Sterling Signature, 2012), 1-4.

¹⁸ Brian W. Ogilvie, *The Science of Describing: Natural History in Renaissance* (Chicago: University of Chicago Press, 2006), 6.

As Ogilvie argues, illustrations played a key role in communicating new scientific knowledge about nature. The development of woodcuts that could be printed at the same time as metal text revolutionized natural history books during the early modern period in Europe. Books were essential in the development of the natural sciences in the West because facilitated an exchange of ideas among scholars and helped form correspondence networks. The practice of making and viewing illustrations shaped how Europeans saw nature.

Printed illustrations were a critical method of communicating information about the natural world before photography. Often naturalists were artists themselves, and the practice of drawing was a key component of observation. Creating art based on the natural world always involves a level of translation. Nature is interpreted by the observer and communicated through various art styles. Sometimes plants and animals are depicted realistically in an environment that they might inhabit in the real world. Other times they are divorced from reality and presented as free-floating objects for study. Schematic drawing became a popular form of documenting plants and animals because it can communicate several ideas at once. Ann Shelby Blum wrote in *Picturing Nature*,

Acceptance of pictures as conveying authentic information about nature lies at the heart of scientific practice. The consistent reading of graphic and pictorial conventions permits the formation of standards of verisimilitude or of an acceptable equivalency to nature. The process of translating nature onto paper, however, requires a sequence of steps that imply major conceptual leaps. Every scientific illustration of any period, and in any medium, whether made from a drawing or a photograph, represents not only the purported subject of the picture, but also these steps of translation.¹⁹

Technique and materials affect the finished product when original artwork is transformed into a printed image. Up until the mid-nineteenth century, printed book illustrations were created

¹⁹ Ann Shelby Blum, *Picturing Nature: American Nineteenth-Century Zoological Illustration* (Princeton, N.J.: Princeton University Press, 1993), 3.

through relief or intaglio printing. New illustration techniques such as wood engraving, developed by the British artist and natural history author Thomas Bewick in the late eighteenth century, increased the appearance of images in print. Wood engraving allows for finer details than traditional woodcuts, but it is still a relief form of printing, so illustrations can be integrated into the text because woodblocks can be printed at the same time as metal type. Intaglio is the opposite of relief printing; images are incised into metal plates by engraving or etching. The ink sits below the surface of the plate, and it requires higher pressure to pull a print. Intaglio is a time-consuming process, and plates cannot be printed at the same time as the type, so the finished illustrations are interleaved throughout the text. The use of steel instead of copper for intaglio was introduced in the late-eighteenth century, which allowed for higher print runs. Copper plates deteriorate through repeated use and the durability of steel maintains sharp impressions. People often remark that copper plate illustrations have a warmer quality than cool steel engravings.²⁰

There were experiments with color printing in the first half of the nineteenth century, but most colored illustrations were painted by hand with watercolor washes over black-and-white monochrome prints. Some printers began to adopt the new technique of chromolithography in the 1830s. Lithography is a planographic technique in which illustrations are applied in grease on a flat surface, traditionally a limestone block. Geoffrey Wakeman explains, “a greasy image on a surface of smooth limestone is first moistened and then inked; the image repels the water but accepts the ink.”²¹ Color in lithography was achieved using successive blocks of separated colors

²⁰ Geoffrey Wakeman, *Victorian Book Illustration: The Technical Revolution* (Newton Abbot: David & Charles, 1973) 17-22, 17-41.

²¹ Wakeman, *Victorian Book Illustration*, 37.

being printed for the same image. It was a labor-intensive process but maintained higher consistency than hand-colored illustrations. Many printers throughout the nineteenth century continued to work with wood blocks or metal plates, and color was applied by hand with watercolor paint. Each illustration technique has certain qualities that affect the finished print's appearance.

Printers often exercise a large amount of influence on how an artwork is transformed into a print. For example, they make decisions to remove or add backgrounds or include details that were not in the original drawing or painting. University of Wisconsin–Madison Associate Professor Emily Arthur's recent exhibition *Seeing Audubon: Robert Havell, Jr. and The Birds of America* at the Chazen Museum of Art explored the techniques London printer Robert Havell Jr. utilized that “transformed Audubon’s original watercolor studies into the scientific and artistic masterpiece for which Audubon is known today.”²² Robert Havell Jr. took over the printing of *The Birds of America* after Audubon’s original printer William Home Lizars could not continue because his colorists went on strike in 1827, causing delays in getting the work out to subscribers. Audubon wrote to his wife Lucy: “I have made arrangements with a Mr. Havell an excellent engraver who had a good establishment containing Printers – Colorers and Engravers So that I can have all under my eye when I am in London.”²³ Audubon worked closely with Havell Jr. during the production of the plates of his *Birds of America* and it can be considered a collaborative process between artist and printer.

²² “Seeing Audubon: Robert Havell, Jr. and The Birds of America,” December 20, 2021–April 3, 2022, Chazen Museum of Art, accessed April 13, 2022, <https://chazen.wisc.edu/exhibitions/seeing-audubon-robert-havell-jr-and-the-birds-of-america>.

²³ John James Audubon to Lucy Audubon, 1827 letter quoted in John Chalmers, *Audubon in Edinburgh: and his Scottish Associates* (Edinburgh: National Museums of Scotland, 2003) 122.

Changes in Publishing in Nineteenth Century Britain

Historians of books and printing mark the beginning of the nineteenth century as the end of the Hand-Press Period (roughly 1450-1800) and beginning of the Machine-Press Period (1800-1950). While the nineteenth century can be generalized as an era of great technological advances in printing, there are considerable differences between the decades. Philip Gaskell's *A New Introduction to Bibliography* chronicles the invention and implementation of new technologies and publishing processes in Britain and the United States. Richard D. Altick's *The English Common Reader: A Social History of the Mass Reading Public, 1800-1900* is a complimentary work that examines British publishers experimenting with new formats to broaden their consumer base. Both these historians separate the nineteenth century into distinct eras that shaped the appearance and quantity of printed materials.

One of the earliest developments that ushered in a new age was the invention of an iron hand press, first patented in 1798 by the Earl of Stanhope. Iron presses had the advantage of higher durability and clearer impressions over wooden common presses, but they did not increase the speed of production and were expensive to buy for small publishers.²⁴ Steam power was another advancement in the early nineteenth century that was not widely implemented initially. The periodical presses were early adopters of steam power to speed up operations. Steam powered printing machines increased output but were not widely used by smaller printing firms until the 1840s. Gaskell wrote, "Very few machines presses were used for book printing during the first quarter of the nineteenth century, and most book-printing businesses were really enlargements of their eighteenth-century predecessors."²⁵ This meant that to increase print runs,

²⁴ Gaskell, *A New Introduction to Bibliography*, 198.

²⁵ *Ibid.*, 191.

publishers needed to hire more people, which could be expensive considering printing house compositors that set type by hand “were the best-paid skilled workers in London,” earning thirty-six shillings a week from 1811-1832.²⁶

The cost of skilled labor and printing materials in the early part of the nineteenth century resulted in book prices remaining high. Even the immense popularity of Sir Walter Scott’s *Waverley* novels did not drive down the price in bookstores, which ranged in price from twenty-one shillings for his first novel in 1814, to the exorbitant cost of thirty-one shillings sixpence (or 31s. 6d.). Most novels were published in a “three-decker” format of three volumes and 31s. 6d. was the standard price for almost all newly released fiction by 1840. It was not common for middle-class consumers to own books; they would rent them instead from circulating libraries. Publishers could keep their print runs low and charge inflated prices because they had a built-in clientele of for-profit circulating libraries. Some small-scale publishers started seeing the potential of selling cheaper reprints and non-copyright fiction for more affordable prices.²⁷

By 1825, some publishers started experimenting with the form and content of books, figuring out ways of reducing material and labor costs. Scottish publisher Archibald Constable was early to recognize the growing market of common readers and aimed to make sure every “decent house in Britain” had a “good library.”²⁸ Constable envisioned a series of affordable non-fiction treatises that covered subjects such as history and science. Unfortunately for

²⁶ Altick, *The English Common Reader*, 262.

²⁷ Altick, *The English Common Reader*, 262-267; for an in-depth study into the relationship between circulating libraries and the prevalence of the exorbitantly expensive three-decker novel see Anthony Rota, “The ‘Three-Decker’” in *Apart from the Text* (Pinner, Middlesex: Private Libraries Association, 1998) 161-182.

²⁸ Archibald Constable quoted in Richard D. Altick’s *The English Common Reader*, 268.

Constable, the 1825 market crash and depression in trade caused his bankruptcy and he died shortly after in 1827. The series lived on as *Constable's Miscellany* published after his death. Altick notes “The *Miscellany*’s main importance is that it was the first noteworthy attempt to pull down the price of new or recent non-fiction.”²⁹

Several other printing firms began releasing non-fiction works in these small formats priced at six shillings per volume. *The Naturalist's Library* was one such series, but there was also the *Edinburgh Cabinet Library*, *Cabinet Cyclopaedia*, and *Family Library*.³⁰ Richard D. Altick wrote in *The English Common Reader*:

Between 1827 and 1832, therefore, London and Edinburgh publishers behaved as if they stood on a peak in Darien, beholding for the first time a vast sea of common readers. Suddenly – and belatedly – the prosperous artisan or clerk with a few shillings to spend loomed more important than the gentleman with a guinea or two.³¹

Some of these publishers had a reformist mindset such as the Society for the Diffusion of Useful Knowledge, founded in London in 1826. Charles Knight served as superintendent of publications and started releasing volumes of the *Library of Entertaining Knowledge* in 1829. Knight was also the creator of *The Penny Magazine*, an illustrated general survey periodical first released on March 31, 1832, which only cost a penny. *The Penny Magazine* made use of steam power and the new practice of stereotyping plates which sped up productions and reduced costs. Stereotyping involves casting a mould of flong, or wet papier-mâché, of the forme of set type. This allowed pages to be reprinted easily, while also freeing up the expensive movable type letters for other printing purposes. It was discovered that wood engravings could also be

²⁹ Altick, *The English Common Reader*, 262-267

³⁰ James Secord, “Progress in Print,” in *Books and the Sciences in History*, ed. Marina Frasca-Spada and Nick Jardine (Cambridge: Cambridge University Press, 2000), 377-378.

³¹ Altick, *The English Common Reader*, 274.

stereotyped which allowed for quick reproductions of illustrations.³² *The Penny Magazine* was liberally illustrated with wood engravings and often featured natural history subjects. The goal of Knight and the Society for the Diffusion of Useful Knowledge was to educate the working class and quell radicalism.³³ Patricia Mainardi wrote, “In effect, the *Penny Magazine* served as a substitute for the primary schooling that was just becoming a normal and required stage of life. Never before had articles and illustrations of this quality been available to the working classes, and for merely a penny.”³⁴

In Britain there was fierce competition between publishers who were catering to a new mass reading public. A lot of money was to be made by tapping into this new audience. Many publishers realized that illustrations were an enticing way to get consumers to buy their products.

Hand-Colored Natural History Illustrations

Prior to the nineteenth century many natural history authors handled the coloring of their illustrations themselves. One of the first British natural history books to offer hand-colored illustrations was Eleazar Albin’s *A Natural History of English Insects*, published in London 1714-1720. The title goes on to say it is illustrated with one hundred copper plates “Engraven from the Life: And (for those who desire it) Exactly Coloured by the AUTHOR.”³⁵ Hand-colored natural history illustrations represented an enormous luxury. During the eighteen

³² Marjorie Plant, *The English Book Trade: An Economic History of the Making and Sale of Books*, 3rd ed. (London: Allen & Unwin, 1974). 299-304, 311.

³³ James Secord, “Progress in Print,” 377-378.

³⁴ Patricia Mainardi, *Another World: Nineteenth-Century Illustrated Print Culture* (New Haven: Yale University Press, 2017), 81.

³⁵ Christine E. Jackson, “The Materials and Methods of Hand-Colouring Zoological Illustrations,” *Archives of Natural History*, 38 no. 1 (2011): 53.

century, even already expensive folios were published in two versions, offering colored or uncolored plates at different prices.

Color adds to the attractiveness of an illustration and in theory can communicate essential knowledge about a natural subject and aid in identification. In reality, hand-colored illustrations vary so much from copy to copy because of human error and the use of different tints of the watercolor paints. This could lead to misrepresentations of plants and animals in natural history illustrations. Figure 5 depicts examples of 1724 and 1749 editions of Eleazar Albin's *A Natural History of English Insects* that both retain the claim "Exactly Coloured by the AUTHOR" but the same plate varies in color and quality. This problem with consistency of hand-colored illustrations happened even when the print runs were small, and it remained especially true for larger productions like *The Naturalist's Library* in the nineteenth century.



Figure 5: Eleazar Albin's *A Natural History of English Insects* from UW-Madison Special Collections at Memorial Library. Right: 1724 edition. Left: 1749 edition.

Historians often highlight how authors tended to make bold claims about the usefulness of colored illustrations. Mark Catesby wrote in the introduction to *The Natural History of Carolina, Florida and the Bahama Islands*, first published in London, 1731, that “Illuminating Natural History is so particularly Essential to the perfect understanding of it” and a “clearer Idea may be conceiv’d from the Figures of Animals and Plants in their proper Colours, than from the most exact description without them.”³⁶



Figure 6: Side by side comparison of Plate 35 from Mark Catesby’s *The Natural History of Carolina, Florida and the Bahama Islands*. Left: 1731 edition from Biomed History and Special Collections at UCLA. Right: 1771 edition from Milwaukee Public Library.

³⁶ Mark Catesby quoted in James N. Green, “Hand-Coloring versus Color Printing: Early-Nineteenth-Century Natural History Color-Plate Books” in *Knowing Nature: Art and Science in Philadelphia, 1740-1840*, ed. Amy R. W. Meyers and Lisa L. Ford (New Haven: Yale University Press, 2011) 254.

Catesby taught himself to etch so he could make the prints for his books. His claim that illustrations were “in their proper Colours” was untrue in the era when this could only be achieved through hand-coloring. There are differences of the same plants and animals between copies, as shown in Figure 6, depicting two versions of Plate 35 from Mark Catesby’s *The Natural History of Carolina, Florida and the Bahama Islands*. Albin and Catesby’s books both were republished several times and each time they went through a process of translation by the later printers and colorists.

There were some early experiments with color achieved through printing, such as French botanist François André Michaux’s work on North American trees, *Histoire des arbres forestiers de l’Amérique septentrionale*, published in Paris from 1810-1813. Michaux’s books contain plates that were made with a new printing process known as *à la poupée*, where different ink colors would be applied to the same engraved copper plate with balled up cloth. Colored ink was applied strategically and wiped away in certain areas, so the plate only had to be run through the press once. Tonal gradients were achieved through stippling patterns of dots on the surface of the copper plate. After the plate was printed, the print would then go through the process of hand coloring additional details. This process did not speed up production, but it reduced the differences between copies which was common with hand coloring.³⁷

A notable example of a work that incorporates both color printing and hand coloring is Alexander Wilson’s *American Ornithology*, published using the subscription model from 1808 to

³⁷ James N. Green, “Hand-Coloring versus Color Printing: Early-Nineteenth-Century Natural History Color-Plate Books” in *Knowing Nature: Art and Science in Philadelphia, 1740-1840*, ed. Amy R. W. Meyers and Lisa L. Ford (New Haven: Yale University Press, 2011) 261-262.

1814 and printed by Samuel F. Bradford. Alexander Wilson emigrated from Scotland to the United States in 1794, settling near Philadelphia. He was enthralled with the diversity of birds in the United States and set out to create an illustrated catalogue of birds he observed himself. Wilson's *American Ornithology* is considered the first comprehensive work of American natural history. The text and images in *American Ornithology* were considered equal, Wilson promised they would "mutually corroborate each other."³⁸ Like Catesby, Wilson initially tried to do the etching himself, but eventually hired Alexander Lawson, who then translated Wilson's drawings into engravings. Ann Shelby Blum argues "Lawson did more than copy the ornithologist's drawings, he corrected them, and contributed his own ideas to the finished picture."³⁹

Wilson's *American Ornithology* features hand-colored engravings, but also include some early examples of color printing, inspired by François André Michaux's work on trees. Only a few of the plates from *American Ornithology* were made using the hybrid technique of printing some colors on copper plates and then applying the rest of the color by hand. James N. Green argues that Wilson was not trying to save money because this technique was actually more expensive, but it improved the accuracy of the illustrations by eliminating variations between copies. Wilson is quoted as saying that his principal aim was a "faithful imitation of nature, worthy of the esteem of that portion of the community by whom it is supported."⁴⁰ The colorists for Wilson's *American Ornithology* were his daughters and the female relatives of his friends, including "Nancy Ann Bartram (William's niece), and Anna Peal (niece of Charles Willson Peale)." During the later years

³⁸ Ann Shelby Blum, *Picturing Nature: American Nineteenth-Century Zoological Illustration* (Princeton, N.J.: Princeton University Press, 1993), 39.

³⁹ Blum, *Picturing Nature*, 37.

⁴⁰ Alexander Wilson quoted in James N. Green, "Hand-Coloring versus Color Printing," 262.

of publication when he was running out of money to finance the work, Wilson ended up doing a lot of the coloring himself.⁴¹

In the early years of illustrated natural history books, colorists tended to be the author or artist responsible for the work or their family members. This started to change when there were higher print runs which necessitated more colored plates being produced. Historian Christine E. Jackson has written extensively on the hand-coloring of natural history illustration and has defined two different phases of production: families at home and coloring establishments. The colored plates for Alexander Wilson's *American Ornithology* were produced in his home and the homes of his friends. Jackson wrote "Talented wives, daughters and sons assisted the head of the household from the earliest instances of amateur zoologists producing their own books."⁴² Eventually this practice grew into a cottage industry of families that specialized in coloring. Printers would send out work to these families, which would often utilize the labor of women and children. Ray Desmond cites two examples of child labor being used for this purpose: "Children from an orphanage colored the woodcuts in Salomon Schinz's *Anleitung zu der Pflanzenkenntnis* (1774). Under supervision, children coloured the aquatints in H. Repton's *Observations on the theory and practice of landscape gardening* (1803)."⁴³ As demand for colored illustrations increased, printers set up their own coloring establishments to streamline productions where up to fifty colorists were employed, as was the case with Robert Havell Jr. and his production of Audubon's *The Birds of America*. A superintendent would oversee the teams of colorists.

⁴¹ James N. Green, "Hand-Coloring versus Color Printing," 261.

⁴² Christine E. Jackson, "The Painting of Hand-Coloured Zoological Illustrations," *Archives of Natural History*, 38 no. 1 (2011): 38.

⁴³ Ray Desmond, *Great Natural History Books and Their Creators* (London: British Library and Oak Knoll Press, 2003) 21.

Naturalists may have claimed that colored illustrations aided in the understanding and identification of nature, but hand-colored plates also served another purpose making them attractive for consumers leading to higher sales. Most hand-colored natural history illustrations from the eighteenth century were found in expensive folios or sold as individual plates. Art Historian Jocelyn Anderson highlights an early example of a publisher marketing to a lower-class audience, *The Universal Magazine of Knowledge*, launched in 1752 which featured hand-colored images of plants and animals. Printers looking to sell mass quantities of more affordable hand-colored prints found workarounds for lowering prices, such as pirating images from other works. *The Universal Magazine of Knowledge* pirated many images from George Edwards's books, which were normally considered luxury objects. Jocelyn Anderson wrote:

Coloured magazine illustrations were usually derived from publications by contemporaneous scientists, but considerable information could be lost when the information was translated visually and adapted to the magazine format. The real purpose of the coloured plates inserted in magazines was to present appealing visual spectacles for polite readers; low production costs and the novelty attraction of the illustrations were higher priorities than accurate representation of specimens.⁴⁴

In the case of *The Universal Knowledge* this also provided the first glimpse of the world outside of Europe. *The Naturalists Library* continued this in the nineteenth century with many volumes dedicated to foreign animals and depicting scenes that were unfamiliar.

⁴⁴ Jocelyn Anderson, "Eighteenth-Century Magazine Illustration and Copper Plates Coloured from Nature," *Lumen* 39, (2020): 80, accessed March 4, 2022, doi.org/10.7202/1069405ar

Chapter Two: *The Naturalist's Library*, 1833-1843

“We trust, however, this publication will, in the end, be what was first promised, –
A NATURALIST'S LIBRARY,
comprehensive, elegant, and cheap, beyond all precedent.”⁴⁵

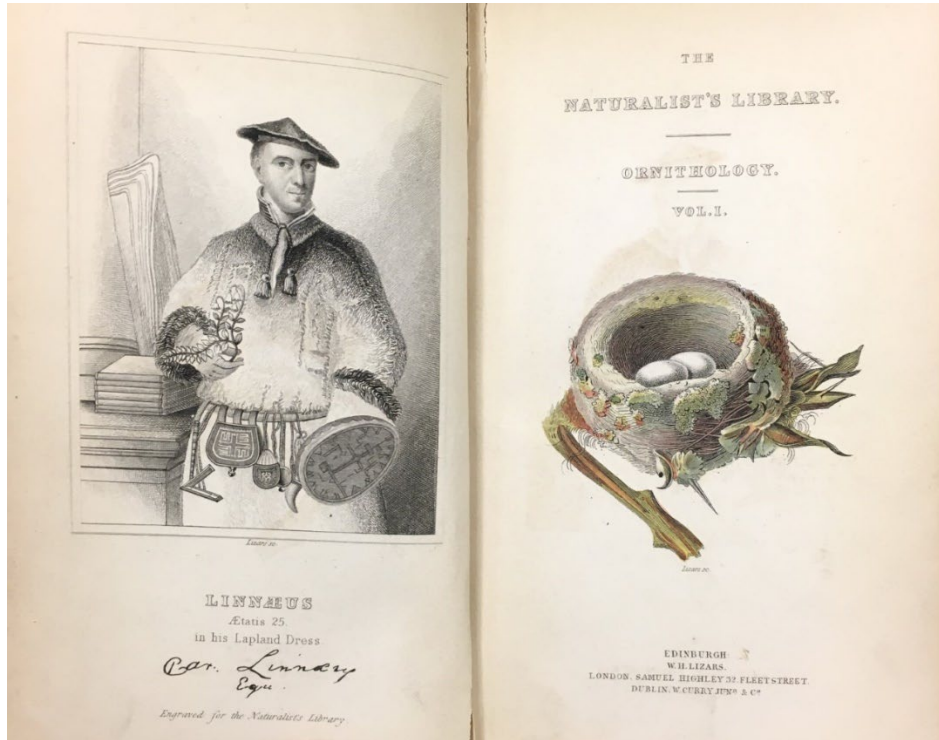


Figure 7: Title page and portrait of Linnaeus from the first volume of *The Naturalist's Library*, Humming Birds: Part I, published March 1833.

The first volume of William Home Lizars and Sir William Jardine's series *The Naturalist's Library* was published in March 1833 in Edinburgh, with distributors selling copies in London and Dublin. In the advertisement section that preceded the text, Lizars and Jardine identified that most illustrated natural history works were out of reach to those who could not afford the expensive “unwieldy folios” that were common during the period. It was their aim to tap into a market of middle-class consumers interested in natural history by creating an affordable series that included “upwards of thirty steel plates, coloured from nature, with numerous wood-cuts” per volume at the

⁴⁵ “Advertisement” to Volume Seven of *The Naturalist's Library: The Natural History of Fishes of the Perch Family* (Edinburgh: W. H. Lizars & Stirling & Kenney, March 1835), viii.

low price of six shillings each.⁴⁶ The volumes of *The Naturalist's Library* were designed to be compact, measuring about 7 x 4 ½ inches, advertised as “Volumes Size of Waverly and Byron.”⁴⁷ The bindings were cloth Morocco, but wealthier consumers would sometimes have their copies bound in their personal taste, often in leather.⁴⁸ Lizars and Jardine wrote in this first volume:

The extravagant price of standard works upon all departments of Natural Science, and the great difficulty of obtaining access to valuable foreign publications, have been a serious hinderance and discouragement to the studies of the Naturalist...

It is with the view of obviating these difficulties and of enabling all classes to procure information regarding the *Great Works of Creation*, at a moderate price, in a convenient shape, and in the most accurate manner, that the Proprietors of the *Naturalist's Library* have embarked in the undertaking.⁴⁹

The books were targeted toward the middle class because six shillings was still a lot of money to spend on a book, even if it contained a large number of hand-colored illustrations. Richard D. Altick argues the working-class could only afford cheap periodicals, “readers who worked sixteen hours a day for two shillings or less, and who therefore could afford only a penny or two a week for printed matter.”⁵⁰ Even higher wage earning “skilled workers” making 30-33

⁴⁶ “Advertisement” in Volume One of *The Naturalist's Library: Humming Birds: Part I* (Edinburgh, W. H. Lizars & Stirling & Kenney, March 1833), unpaginated.

⁴⁷ “THE NATURALIST'S LIBRARY,” *The Preston Chronicle and Lancashire Advertiser*, January 25, 1840. Newspapers.com World Collection. <https://newscomwc.newspapers.com/image/392773517>. Accessed April 12, 2022.

⁴⁸ Morocco tends to refer to leather bindings, but the nineteenth century saw a rise in cloth edition bindings that sometimes were described as Morocco grain. There is a chart in Philip Gaskell, *A New Introduction to Bibliography*, 241-244.

⁴⁹ “Advertisement” in Volume One of *The Naturalist's Library: Humming Birds: Part I* (Edinburgh, W. H. Lizars & Stirling & Kenney, March 1833), unpaginated.

⁵⁰ Richard D. Altick, *The English Common Reader*, 266.

shillings a week would be reluctant to spend almost an entire day's labor on a single volume. Altick wrote,

Five shillings – the price of a reprinted novel – would buy five pounds of butter, or ten pounds of meat; and seven shillings would provide a family of five with good table beer for a month. Hence the middle-class booklover of moderate means, though able to patronize a bookshop occasionally, could not afford to buy many volumes even at the reduced rates of the early thirties. Books remained a minor luxury.⁵¹

Lizars kept in constant contact with his brother-in-law Jardine about the production of *The Naturalist's Library* as evidenced by the large number of letters they exchanged regarding it. I analyzed the surviving correspondence found in the William Jardine Papers at the National Museums Scotland to better understand the publishing history of the series. Lizars oversaw the day-to-day operations in Edinburgh and was coordinating the printing of the letterpress as well as the production of the illustrations. Jardine lived in Dumfriesshire and wrote a lot of the text of the series and enlisted his gentleman naturalist friends to contribute to it. Lizars also sent Jardine many of the early proofs of the illustrations so that he could offer feedback and order them correctly throughout the text. Both men were experienced in printing more expensive natural history books. The following sections explain their background and reasons for starting a more affordable series marketed towards middle-class consumers.

William Home Lizars

William Home Lizars was a printer and engraver in Edinburgh, Scotland during the city's golden age of printing. Lizars was trained as an artist and hoped to be a painter, but his father's

⁵¹ Ibid., 276.

death led him to taking over the family's engraving firm when he was only twenty-two years old.⁵² His sister Jean Home Lizars married his future publishing partner, Sir William Jardine, in June 1820.⁵³ Both men were heavily involved in natural history circles in Edinburgh and were members of several societies such as the Royal Society of Edinburgh. They collaborated on luxury natural history works such as *Illustrations of Ornithology* by Sir William Jardine and Prideaux John Selby, 1826-43 which sold for £1 11s 6d a part.⁵⁴

While Jardine was the baronet, Lizars had considerable influence of his own. When Audubon came to Edinburgh in 1826, it was Lizars' endorsement that "opened the doors to Edinburgh society, and overnight Audubon became warmly received by the eminent men of the city and his paintings were greatly admired."⁵⁵ The two men became friends, and Audubon frequently visited Lizars' family home. This pleasant welcome in Edinburgh led Audubon to decide to have the enormous and labor-intensive plates for *The Birds of America* printed by Lizars. He wrote to his wife Lucy that the people in Edinburgh had the "eyes of the most discerning people in the world," and "if it takes here, it cannot fail anywhere."⁵⁶ Lizars would only end up printing the first ten plates of *The Birds of America* because his colorists went on strike, forcing him to halt operations and write to Audubon on June 13, 1827 telling him to seek a new printer. Audubon replaced Lizars with London engraver Robert Havell Jr. Lizars and

⁵² John Chalmers, *Audubon in Edinburgh* (Edinburgh: National Museums of Scotland, 2003), 39-40.

⁵³ Christine E. Jackson and Peter Davis, *Sir William Jardine: A Life in Natural History* (London: Leicester University Press, 2001), 4.

⁵⁴ Jackson and Davis, *Sir William Jardine*, 71.

⁵⁵ Chalmers, *Audubon in Edinburgh*, 158.

⁵⁶ 1826 journal John James Audubon kept for his wife Lucy, quoted from John Chalmers, *Audubon in Edinburgh*, 57.

Audubon's relationship soured over the years, especially when several of Audubon's illustrations were used for volumes of *The Naturalist's Library* without his permission.⁵⁷

Sir William Jardine

William Jardine, 7th Baronet of Applegirth in Dumfriesshire, brought prestige to *The Naturalist's Library* because of his title and reputation as an important Scottish naturalist. His residence in Jardine Hall had an extensive natural history library and a collection of over 6,000 specimens. Jardine was well known for authoring books on ornithology, but was also considered an eminent ichthyologist, entomologist, and geologist. He dabbled in anything natural history related and was in contact with naturalists from all over the world. Jardine revived interest in Gilbert White's *Natural History of Selborne*, first published in 1789 and later republished by Jardine forty years later. White's book served as inspiration for many amateur naturalists. Jardine was also an artist. Christine E. Jackson and Peter Davis wrote a biography titled *Sir William Jardine: A Life in Natural History* and noted that "when writing his books, he learned to etch, to draw on wood block for wood engraving, to lithograph and to use a variant of lithography called papyrography." Jackson and Davis went on to say "one of the finest books on fishes ever printed was Jardine's *The British Salmonidae*, for which he did the drawings and etchings himself."⁵⁸ Jardine is often given a lot of credit for the popularity and longstanding influence of *The Naturalist's Library* because of his role as editor, and while he contributed a lot to the series in terms of writing and access to other naturalists in his scientific circle, it was Lizars that ran the day-to-day operations and orchestrated the production of the colored plates.⁵⁹

⁵⁷Chalmers, *Audubon in Edinburgh*, 159-160.

⁵⁸ Jackson and Davis, *Sir William Jardine*, x-xi.

⁵⁹ Sheets-Pyenson, "War and Peace in Natural History Publishing," 51-52.

Lizars and Jardine were very much the gentleman naturalists with their “unwieldy folios” that they criticized in the original prospectus for *The Naturalist’s Library*, but they saw the potential for creating a miniature version of those books that included hand-colored illustrations for a new emerging audience. While they discussed the desire to open up the study of natural history to all classes, they also had the main motivation of making money.

Both Lizars and Jardine had financial incentive for going after new middle-class consumers. The subscriber-based system used for expensive folios was unpredictable and had a lot of financial overhead. They saw an opportunity to make a lot more money. Even though Jardine was a baronet he had a lot of financial obligations with his family and upkeep at Jardine Hall, which often left him with little money to pursue his natural history interests. For example, Jardine would often try to borrow expensive natural history books instead of buying them. Christine E. Jackson wrote, “Jardine confessed himself short of money, so when he decided to edit the volumes for a version of *American Ornithology* for publication in Edinburgh, rather than purchase them, he borrowed them from Selby.”⁶⁰ The print runs for volumes of *The Naturalist’s Library* were in the thousands, which far exceeded their subscribers for more expensive works like *Illustrations of Ornithology*.

⁶⁰ Christine E. Jackson, “The Changing Relationship between J. J. Audubon and His Friends P. J. Selby, Sir William Jardine and W. H. Lizars,” *Archives of Natural History* 18, no. 3 (1991) 302.

The Naturalist's Library

In January 1833, several months before the *The Naturalist's Library* hit bookstores, Lizars received encouragement from his London distributor to “print 1500 of the letterpress instead of 1000.”⁶¹ Longman was correct in anticipating that the series would be a hit, because once it was released, they kept increasing the number of volumes they requested from Lizars in Edinburgh. This was also true of the second volume of *The Naturalist's Library* which was dedicated to monkeys, published in August 1833. On September 16, 1833 Lizars wrote to Jardine: “I now have the pleasure to add that Longman + Co. have actually disposed of the whole 2500 copies and I sent them more on Wednesday of both the Monkeys + Humming birds. I expect to sell 5000 of both Vols before a month expires.” The series was an immediate hit.



Figure 8. Hummingbird illustrations from the first volume of *The Naturalist's Library*, 1833.

⁶¹ W. H. Lizars to W. Jardine, January 12, 1833, NMS Jardine Papers.

The Scottish newspaper *Caledonian Mercury* reviewed the series, stating “The first volume of this work, which has just appeared, certainly gives promise of great excellence, and is altogether a gem of its kind.” It praised the text, but noted:

The artist’s share of the undertaking, however, is by far the most conspicuous; for really nothing can exceed the beauty and the truth with which these birds are represented and coloured in the plates, which reflect infinite credit on the taste and skill of the engraver, Lizars, by whom they were executed, and who, in fact, appears to be the proprietor of the work.⁶²

Lizars published 3-5 volumes a year from 1833-1843. Each volume sold several thousand copies, but some were more popular than others. The first volume on *Humming-Birds* sold over 9,000 copies. Most of the other books sold about 4,000 copies. This indicates that certain animals were more popular among consumers of the series. They were distributed in Edinburgh, London, and Dublin. Eventually some of the volumes were shipped to the United States.⁶³ Lizars wrote in the eleventh volume published in December 1835:

We are glad to have it in our power to announce, that the demand for our volumes continues undiminished, and enables us, by that means alone, to select and employ gentleman of the very highest talent as our assistants in this publication, which is now pretty well known, and anxiously asked after over this kingdom, as well as America, and many places on the Continent of Europe, facts which we mention here, altogether with a view of assuring our readers of the prospect of uninterrupted continuance of the series, arising from the encouragement with which the work is everywhere hailed.⁶⁴

The forty volumes of *The Naturalist’s Library* covered four branches of natural history: mammalia, ornithology, ichthyology, and entomology (or mammals, birds, fish, and insects). A

⁶² "THE NATURALIST'S LIBRARY," *Caledonian Mercury*, March 25, 1833. British Library Newspapers, accessed April 13, 2022 [gale.com/apps/doc/BB3205412785/BNCN?u=milwaukee&sid=bookmark-BNCN&xid=0d3ec9ac](https://www.gale.com/apps/doc/BB3205412785/BNCN?u=milwaukee&sid=bookmark-BNCN&xid=0d3ec9ac).

⁶³ Sheets-Pyenson, “War and Peace in Natural History Publishing,” 60.

⁶⁴ William Jardine, *The Naturalist’s Library: Mammalia. The Ruminantia*. Edinburgh: Lizars, 1835, xi.

single volume would be dedicated to a particular species or type of animal within those categories, such as an ornithology book on sunbirds or an entomology book on beetles. It was not meant to be a complete system of all animals, but a survey of notable species. Animals were chosen for distinct reasons, such as having an unusual structure, notable beauty, or economic value. Foreign birds and insects with flashy exotic colors were of particular interest, but familiar British birds and butterflies were equally as popular with those fond of their local nature. For the animals that would have been familiar to their British audience, they made sure to include the common name on the plate instead of the scientific name, which was included in the text.⁶⁵

Each book included a brief memoir of a famous naturalist in history, from Pliny the Elder to the German entomologist and artist Maria Sibylla Merian, the only woman to be featured. The first page of each volume was an engraved portrait of the naturalist that faced the title page which included a small decorative vignette (Figure 7). After the memoir, around 250 pages was dedicated to the subject of the volume. Lizars wanted to maintain a consistent length of the written portion of each volume, so they were always the same size. Sometimes the text would be too short, and he would fluff it up with advertisements for other works at the end.

Many different authors wrote for *The Naturalist's Library*. Jardine authored many of the books on ornithology. Other naturalists including James Duncan, Prideaux John Selby, and William John Swainson wrote about their research specialties. Lizars also cut costs by hiring Jardine's friends to write for him. Most authors were paid £40 per volume for the main text, and £10 for the memoirs of prominent naturalists. Lizars would often supplement their income with copies of the printed book. Susan Sheets-Pyenson wrote: "The majority of *Library* authors were scientifically inclined northerners and Scotsman of local reputation. About half were professional

⁶⁵ Sheets-Pyenson, "War and Peace in Natural History Publishing," 50-72.

science writers who had composed semipopular works for other serial miscellanies; a few other were doctors. Preachers predominated among the authors of memoirs.”⁶⁶

Newspaper advertisements from the period reveal that *The Naturalist's Library* was marketed as an instructive set of books for families, which reflects the influence of The Society for the Diffusion of Useful Knowledge, and the reformist ideal of useful instruction:

We take shame to ourselves for not having directed the attention of our readers who love natural history (and who do not) to the Naturalist's Library. It is a very delightful work, and should grace the shelves of any man who has a family. Productions of this kind will, we hope, displace the trash which was formerly in the hands and on the lips of young persons, and give them that relish for the study of nature, so invigorating to the mind, and so calculated to fit it for the sober occupations of life.

Another advertisement states “To Governors and Teachers of Schools, the Volumes of the Naturalist's Library will be found very appropriate for PRIZES.”⁶⁷ Lizars himself wrote about trying to market volumes from the series as giftable objects, he wrote Jardine: “I have also got a copy of the 1st and the plates of the 2nd Vol. of H. Birds done up in silk binding, as a New Year's present.”⁶⁸

John James Audubon was incredibly critical of *The Naturalist's Library*. Audubon wrote to his friend John Bachman in 1838, that the books were “cheap as dirt and more dirty than dirt – Sir William Jardine will encumber the whole of God's creation with stuff as little like the objects of the Creator's formation as the moon is unto cheese.”⁶⁹ John Chalmers argues that the success

⁶⁶ Sheets-Pyenson, “War and Peace in Natural History Publishing,” 64.

⁶⁷ “Advertisements & Notices.” *Belfast News-Letter*, 18 Aug. 1835. British Library Newspapers, link.gale.com/apps/doc/Y3201966533/BNCN?u=milwaukee&sid=bookmark-BNCN&xid=0ce82496. Accessed January 29, 2022.

⁶⁸ W. H. Lizars to W. Jardine, September 20, 1833, NMS Jardine Papers.

⁶⁹ Christine E. Jackson, “The Changing Relationship between J. J. Audubon and His Friends P. J. Selby, Sir William Jardine and W. H. Lizars,” *Archives of Natural History* 18, no. 3 (1991), 305.

of *The Naturalist's Library* caused resentment and jealousy in Audubon. He was urged by his friend William MacGillivray to follow in the example of publishing more affordable books.

MacGillivray wrote to Audubon on July 18, 1834:

... your imperial size and regal price do not answer for radicals of republicans either. Could you sacrifice the first volume, reprint it of a small size and continue the series so to that end? In suggesting this, I firmly believe that my only object is to let the book have fair play. Lizars has sold five or six thousand copies of his ill written compilations and if you were to issue yours in a similar style – not of writing but of printing – with 20 woodcuts or engravings in each volume, I am certain it would spread over the land like a flock of migratory pigeons.⁷⁰

Influences

The plan for *The Naturalist's Library* was fully laid out in the prospectus. It greatly resembled *Constable's Miscellany*, which was a series established by the Scottish publisher Archibald Constable in 1826. *Constable's Miscellany* covered a wide range of non-fiction works such as war histories, memoirs of British monarchs, and natural history subjects such as *The Book of Butterflies, Sphinxes and Moths* by Captain Thomas Brown, first published in 1832, one year before *The Naturalist's Library* was first released. Brown's book is strikingly similar in appearance, especially when looking at *The Naturalist's Library's* volumes on lepidoptera. Even the vignettes both feature cherubs playing with butterflies (Figure 9).

⁷⁰ Correspondence between William MacGillivray and John James James Audubon, July 18, 1834, quoted in John Chalmers, *Audubon in Edinburgh*, 159.



Figure 9. Left: Title page for *Constable's Miscellany: The Book of Butterflies, Sphinxes and Moths* by Captain Thomas Brown, 1832. Right: Title page for *The Naturalist's Library: British Moths, Sphinxes, &c.* by James Duncan, 1836.

The biggest difference between Brown's book for *Constable's Miscellany* and *The Naturalist's Library* is the appearance of the illustrations within the body of the books. Both are hand-colored, but the *Constable's Miscellany* illustrations are wood engravings which give them a flat appearance and there is no background. In comparison, the hand-colored steel engravings in *The Naturalist's Library* are lively and include backgrounds. An example of this is Death's-head hawkmoth which is unrealistic in the *Constable's Miscellany* version, whereas in *The Naturalist's Library* the engraving has fine details, and the moth is shown alongside a large yellow caterpillar depicting its larval form. There are background floral details, and the moth appears to be attempting to drink from the nectar (Figure 10).



Figure 10. Left: Plate 71: *The Death's Head Sphinx* from *Constable's Miscellany: The Book of Butterflies, Sphinxes and Moths* by Captain Thomas Brown, 1832. Right: Plate 5: *Death's head Hawk moth* from *The Naturalist's Library: British Moths, Sphinxes, &c.* by James Duncan, 1836.

Chapter Three: The Production of Illustrations for *The Naturalist's Library*

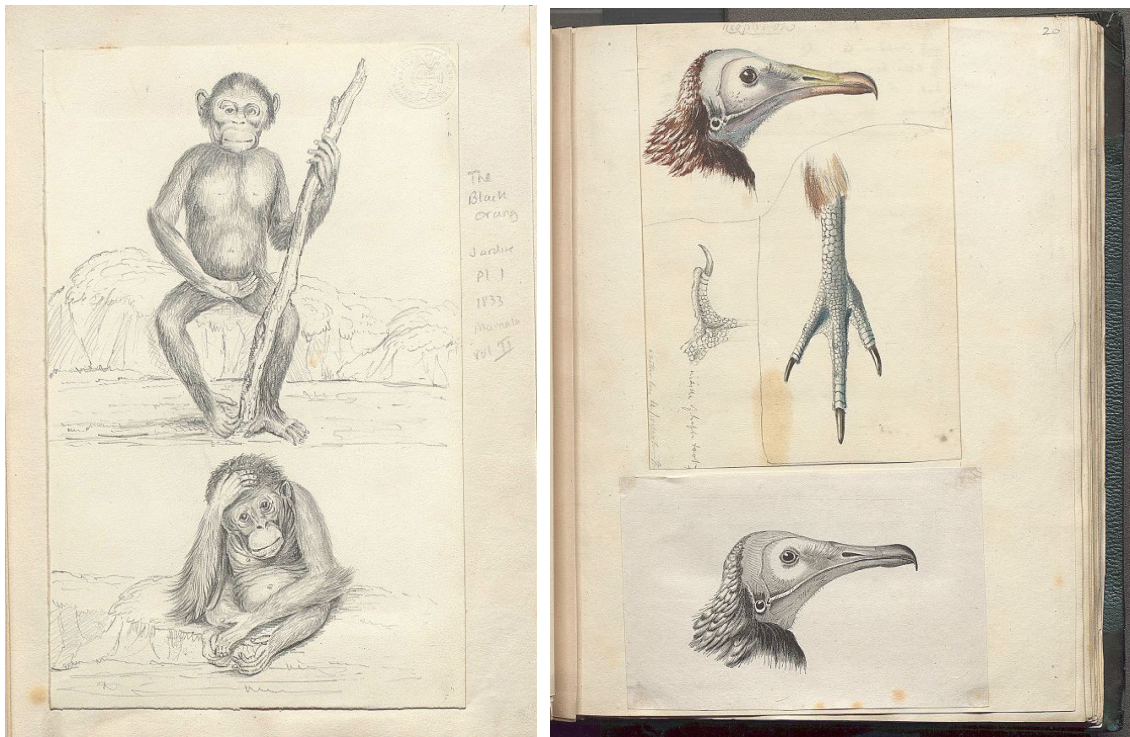


Figure 11. Original artwork created for *The Naturalist's Library*.

Every volume of *The Naturalist's Library* was illustrated with woodcuts incorporated in the text and interleaved with 35-40 hand-colored steel engravings. In an advertisement, Lizars wrote that “anyone unacquainted with zoology can obtain pleasure and profit from glancing at illustrations alone.”⁷¹ The production of the colored illustrations featured in *The Naturalist's Library* was a collaborative process between the artists, printers, editor, and colorists. There were several artists who were paid to create illustrations for the series, but the primary artist was James Home Stewart. Reference materials for the zoological illustrations were taken from Jardine Hall,

⁷¹ Advertisement included in the eleventh volume of the *The Naturalist's Library: Mammalia. The Ruminantia*. Edinburgh: Lizars, December 1835, x.

Royal Edinburgh Musuem, and personal cabinets of naturalists friends like James Wilson.⁷² In rare instances, artwork was created from living specimens, such as the drawings made by Edward Lear based on animals at the Zoological Society of London. Jardine and Lizars had free access to The Royal Museum of the University of Edinburgh to make sketches of preserved specimens, which normally cost two shillings and sixpence to see.⁷³ A major source for image were other natural history publications that were kept in the library at Jardine Hall or borrowed from libraries of natural history societies that they were a part of. As the prospectus in the first volume of *The Naturalist's Library* notes:

The illustrations proposed to be given are so numerous, that it will be impossible always to procure them from the specimens themselves, and the greatest care, therefore, will be used in selecting, from the most approved sources, the plates which can be confidently relied on for accuracy, both of delineation and colouring.⁷⁴

⁷² Advertisement included in the eight volume of the *The Naturalist's Library: Beetles*. Edinburgh: Lizars, May 1835, unpaginated.

⁷³ John Chalmers, *Audubon in Edinburgh*, 78.

⁷⁴ "Advertisement", *Humming Birds: Part I*, unpaginated.

such!".⁷⁵ Lizars was sending these letters and illustrations through stagecoach and complained in a letter from September 1833 about the "expense of parcels."⁷⁶

Some insights into the costs of producing the images can be found in a letter in the William Jardine Papers. Lizars outlines an estimate of costs for producing one hundred plates of ornithology in the style of that of the "Nectariniidae in the Nat. Lib." (Figure 13). The letter is from 1843 at the very end of the series, and it seems to be about a new book that Jardine is interested in publishing. Lizars makes it clear that this does not include the expense of paying Stewart one guinea each for his drawings. In the next letter, Lizars goes on to clarify that "printing 1000 copies of 4 pages would cost 40s [shillings] and colouring would cost four pounds for the 4 plates or pages."⁷⁷ While it is hard to decipher exactly how much each book cost to produce, it does show that the drawing, printing, and colouring was paid for on a piece-work basis.

⁷⁵ W. H. Lizars to W. Jardine, July 1833, NMS Jardine Papers.

⁷⁶ W. H. Lizars to W. Jardine, September 1, 1833, NMS Jardine Papers.

⁷⁷ W. H. Lizars to W. Jardine, 1843, NMS Jardine Papers.

Edinburgh, 9th Aug 1843
30 St James Square

Estimate

Engraving 100 Plates on Ornithology such
as those of the Verticillatae in Nat. Lib. 31/6 L157. 10

Turning steel for D.	5/-	25	...
Printing 1000 each @ per 1000 L. 10/-		50	...
Turning paper for D. 14 Rms at 60/- per rm.		42	...
Colouring 1000 ea. @ per 1000. 20/-		100	...
Setting up Types + printing 1000 Copies of 1 sheet of 32 pages double foolscap		2	10
Turning 2 Rms 30/- paper for D.	20/-	2	3
Boarding 1000 Copies @	7/6	29	3.4

Figure 13. Estimate of plate production included in a letter from Lizars to Jardine, 1843.

Artists



Figure 14. Original sunbird illustrations signed by James Hope Stewart.

James Hope Stewart was the primary artist for *The Naturalist's Library* and much of the series success can be attributed to the beauty of his illustrations. By some counts he completed 1,351 illustrations, but only 545 plates were signed with his name.⁷⁸ He was a farmer and amateur artist that lived about six miles from Jardine Hall. Stewart worked for Lizars on several other publications, such as the *Magazine of Zoology and Botany*. He produced watercolor illustrations which Lizars engraved into steel plates. In the advertisement included with the eleventh volume of the *The Naturalist's Library*, Lizars wrote:

It contains thirty-five plates, which, with few exceptions, have been engraved from original drawings made expressly for the *Naturalist's Library* by Mr. Stewart. This gentleman, we trust, our readers will think has executed his department with great taste, evincing also an artist-like knowledge of the anatomy and general habits of the animals, and in a pleasing

⁷⁸ Christine E. Jackson, "James Hope Stewart, Artist for *The Naturalist's Library*," *Archives of Natural History* 21, no. 1 (1994): 37.

way introducing the female and young into the groups where required, to assist in conveying a more perfect idea of the species to the reader.⁷⁹

Stewart was paid one guinea for each completed watercolor he made for Lizars. In 1833, Captain Thomas Brown attempted to create a rival series to *The Naturalist's Library* called the *Miscellany of Natural History*. Brown tried to persuade Stewart to come work for him doing the illustrations for the new series, but Stewart refused. Luckily for Lizars, Brown's *Miscellany* was short-lived, there was only one volume published and it was considered by reviewers to be a "stolen" design and crude version of *The Naturalist's Library*.⁸⁰

Other illustrators for *The Naturalist's Library* included Charles Hamilton Smith, John Obadiah Westwood, William John Swainson and Edward Lear. Lizars was especially impressed with Lear's ornithology drawings. Lizars wrote to Jardine, "that Lear's drawings are nature, and all others pottery-ware."⁸¹

⁷⁹ Advertisement included in the eleventh volume of the *The Naturalist's Library: Mammalia. The Ruminantia*. Edinburgh: Lizars, December 1835, xi.

⁸⁰ Sheets-Pyenson, "War and Peace in Natural History Publishing," 58-59.

⁸¹ *Ibid.*, 66-67.



Figure 15. Left: Blue-and-yellow Macaw illustration by Edward Lear from his book *Illustrations of the Family of Psittacidae*, 1832 from UW-Madison Special Collections. Right: *The Naturalist's Library* on Parrots, 1836 from the American Geographical Society Library.

English artist and author Edward Lear is best known for his literary nonsense poetry, but he started his career as a natural history artist. Robert McCracken Peck wrote:

Although Lear's contributions to science are almost forgotten today, for a period of time in the 1830s, he was a prolific painter of natural history subjects who earned near universal praise for the accuracy, originality, and elegant style of his animated depictions of birds and other wildlife. His best remembered scientific contribution is his magnificent monograph *Illustrations of the Family Psittacidae, or Parrots* (1830-1832), the first English natural history book to focus on a single family of birds, which he began to publish when he was just eighteen.⁸²

Lear was commissioned to work for the leading naturalists of his day, including John Gould. Sir William Jardine and Prideaux John Selby hired Lear to create art for their *Illustrations of Ornithology*. Lear began creating work for *The Naturalist's Library* as early as 1833, and his

⁸² Robert McCracken Peck, *The Natural History of Edward Lear*, new ed. (Princeton: Princeton University Press, 2021), 3.

parrot drawings were of particular interest to Lizars and Jardine. McCracken Peck notes “Lear correctly suspected that John Gould would not approve the creation of a competitive publication on the subject since he then held the remaining parts of Lear’s parrot book. Instead, Lear proposed creating new images for Jardine using his existing life studies as the basis for his work.”⁸³ Comparing Lear’s illustrations of the Blue-and-yellow Macaw (Figure 15) for both his *Illustrations of the Family Psittacidae* and *The Naturalist’s Library* volume on parrots shows similarities, but they are clearly different drawings.

Many of the illustrations found in *The Naturalist’s Library* were found in previously published works. Notable examples of this include illustrations from Audubon’s *Birds of America* (Figure 16) and John Gould’s *A Century of Birds from the Himalaya Mountains*. Both of these works were enormously expensive, and in a way, *The Naturalist’s Library* had a potentially unintended democratizing effect because it allowed people from lower classes to see artwork that would have normally been completely inaccessible to them.

⁸³ Ibid., 69.



Figure 16. Left: Author with Audubon's first volume of *The Birds of America* held by UW-Madison Special Collections, 1827. Right: Illustration found in *The Naturalist's Library* on Gallinaceus Birds, 1834.

Some natural history authors and artists were not pleased by this pirating of illustrations.

Audubon's son Victor wrote Lizars on August 25, 1834:

Today I have been much surprised at seeing a plate representing the female Turkey & young, copied from J. J. Audubon's "Birds of America" in Your work the "Naturalist's Library," as my Fathers agent & representative I have to advise you that in case any other plate or plates, figure or figures of birds copied from the "birds of America", be published in the "Naturalist's Library" or Elsewhere, I shall at once bring action to recover damages, on behalf of My Father.⁸⁴

⁸⁴ Christine E. Jackson, "The Changing Relationship between J. J. Audubon and His Friends P. J. Selby, Sir William Jardine and W. H. Lizars," *Archives of Natural History* 18, no. 3 (1991) 305.

It is unclear if Audubon or his son were successful in recovering damages from Lizars or Jardine for their unauthorized use of the art from *Birds of America*. In the advertisement to the volume five of *The Naturalist's Library*, Lizars wrote:

We likewise are indebted to Mr. Gould for the handsome manner in which he permitted us the use of his magnificent work of the "Century of Birds;" – and have to apologize to Mr. Audubon, the distinguished and indefatigable American ornithologist, for the liberty we have taken in copying his "Female Turkey and Young," and whose absence from this country alone prevented permission being solicited.⁸⁵

Colorists

By 1835, only two years into the start of the series, the number of illustrations that Lizars' printing firm could be counted in the millions. In the eleventh volume he wrote, "it is a curious matter of numerical calculation to mention that we have sold upwards of 60,000 volumes, in which there have been nearly 2,400,000 coloured plates given as illustrations."⁸⁶ Having a reliable labor pool to color the plates was essential to the success of *The Naturalist's Library*. Lizars and Jardine also boasted about their ability to hire workers to produce plates for the series. Lizars wrote:

Altogether independent of the gratification which these Plates have given to the public, the publication has opened up a source of agreeable, permanent, and profitable employment, to a very numerous class of the most deserving and industrious persons in Edinburgh, whose rank in society and whose education precluded them from applying themselves readily to any other occupation than that of colouring.⁸⁷

⁸⁵ "Advertisement" to Volume Five of *The Naturalist's Library: Peacocks, Pheasants, Turkeys* (Edinburgh: W. H. Lizars & Stirling & Kenney, [June] 1834), unpaginated.

⁸⁶ Advertisement included in the eleventh volume of the *The Naturalist's Library: Mammalia. The Ruminantia*. Edinburgh: Lizars, 1835, x.

⁸⁷ *Ibid.*, xi.

As discussed previously, Lizars printed the first ten plates of Audubon's *The Birds of America* but had to halt operations because his colorists went on strike in 1827 and he lost the account. Lizars characterized his male colorists that went on strike in 1827 as "radical" and wrote to Jardine that "I have dismissed them to a man in the mean-time and have commenced to organize a set of women to do the business who I hope will manage it even better."⁸⁸ In a follow up letter on June 8, 1827, Lizars wrote to Jardine:

Mr Selby will have told you about all my colourers having struck work and my determination to attempt to organize a school of females to do the colouring in future. I am glad to say that we have begun this establishment with the greatest prospect of success; and assistants are flowing in upon me hourly. Yesterday which was the first day we were at work, produced a little most excellent specimen and there is soon little fear.⁸⁹

Prior to this period, the hand coloring of plates would have been sent out to family homes as a cottage industry, but the size of the print run of the *The Naturalist's Library* meant that the team of colorists worked on the premises of Lizars' printing firm.⁹⁰ In the final volume of the series, in the last sentence of the advertisement, Lizars credits his printing partner William Banks, "who has all along superintended the Printing and Colouring of the numerous Plates."⁹¹

The archival record does not reveal much about women colorists. It is likely that they were teenage girls. An article published in *The Star of Freedom*, published in Leeds, West Yorkshire,

⁸⁸ W. H. Lizars to W. Jardine, June 2, 1827, NMS Jardine Papers. Susan Sheet's Pyenson transcribed this as "radical scamps" in their article "War and Peace in Natural History Publishing," 67. Christine E. Jackson transcribed it as "radical skamps" in their article "Hand-Coloured Zoological Illustrations," 45. It is hard to decipher from the original letter but the work radical is clearly used.

⁸⁹ W. H. Lizars to W. Jardine, June 8, 1827, NMS Jardine Papers.

⁹⁰ Jackson, "The Painting of Hand-Coloured Zoological Illustrations," 39-42.

⁹¹ Advertisement included in the fortieth volume of the *The Naturalist's Library: Birds of Great Britain and Ireland: Part IV* (Edinburgh: Lizars, 1835, xii).

England on January 30, 1847 titled “Labour in New York” has an interesting passage on female colorists, noting “some of the work is very fine, and requires a good deal of care and skill. Such of this is performed by girls who have partially studied painting and drawing, and frequently by those who have taught those branches, and find themselves out of employment.” It goes on to report:

The harvest of colourists comes about mid-winter, when all the shops, high and low, are preparing for St. Valentine’s Day. Then delicate pick-fingers are in huge demand, and their lucky proprietors can have as much work as they choose. Better prices, too, are given at this time for all kinds of colouring...

The majority of the girls engage in the business are tolerably and some very well educated, and they are generally of good character. Most of them reside with their relatives or friends and nearly all have a great fondness for showy dresses – a taste which, whether acquired by their high-coloured labours or derived from the instinctive inspirations of the sex, many of them strain every nerve to gratify.⁹²

While the article was discussing female colorists in New York, there were probably similarities in Britain. The young women are described as having a good character and some were educated. It also discussed the frivolity of their profession and how it could lead them to spending money on showy, colorful dresses. This seems to indicate it was a job for women of a certain class who did not necessarily need the money.

⁹² “Labour in New York,” *The Star of Freedom*, January 30, 1847. Newspapers.com (Accessed May 16, 2022).

Conclusion

The Pictorial Legacy of *The Naturalist's Library*

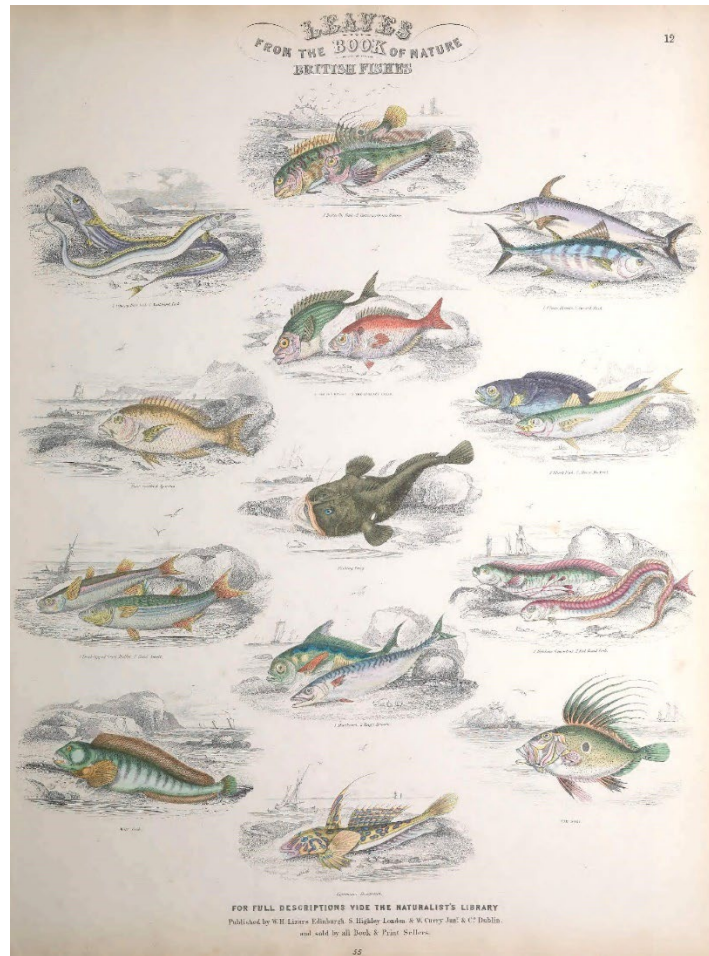


Figure 17. Collection of fish illustrations from *The Naturalist's Library* re-issued in *Leaves from the Book of Nature*, published by Lizars and Jardine in the 1840s.

The success of *The Naturalist's Library* can be attributed to the beautiful hand-colored steel engravings that were included in each volume. During the 1830s it was still quite rare to have so many colored images in a moderately priced work of non-fiction. Near the conclusion of the series in the 1840s, Lizars and Jardine released a book of just the hand-colored steel engravings titled *Leaves from the Book of Nature, Containing the Principal Illustrations in Jardine's Naturalist's library, Upon One Hundred and Seventeen Sheets*. At the bottom of each plate it stated

“for full descriptions vide The Naturalist’s Library” which was “sold by all book & print sellers.” (Figure 17). Which could mean that the issued this book of plates as a way of hooking consumers and motivating them to buy the actual volumes. Copies of the *Leaves from the Book of Nature* are scarce, so it appears they did not produce many.

Illustrations that first appeared in The Naturalist’s Library began to show up in other natural history publications all over Europe. An example of this includes the German language book by Georg Friedrich Treitschke, *Naturhistorischer Bildersaal des Thierreiches: nach William Jardine*, published in 1840-43. As the title indicates, they credited William Jardine. Many illustrations from The Naturalist’s Library, such as the plate depicting the common flying fish (Figure 18) were recreated in the *Naturhistorischer Bildersaal des Thierreiches*, but slightly altered during the process (Figure 19).

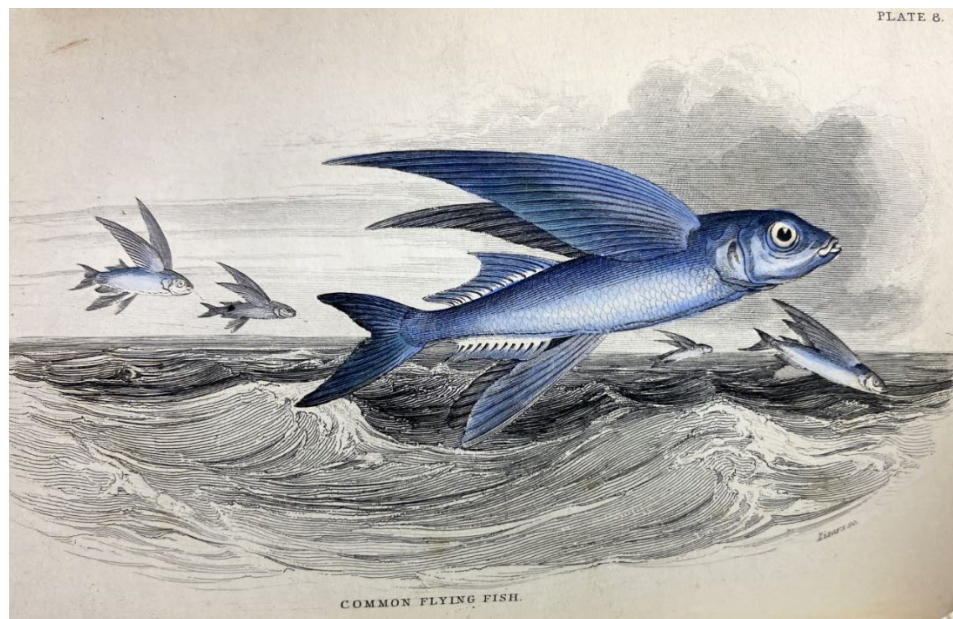


Figure 18. Common flying fish from *The Naturalist’s Library* book on Ichthyology, 1840

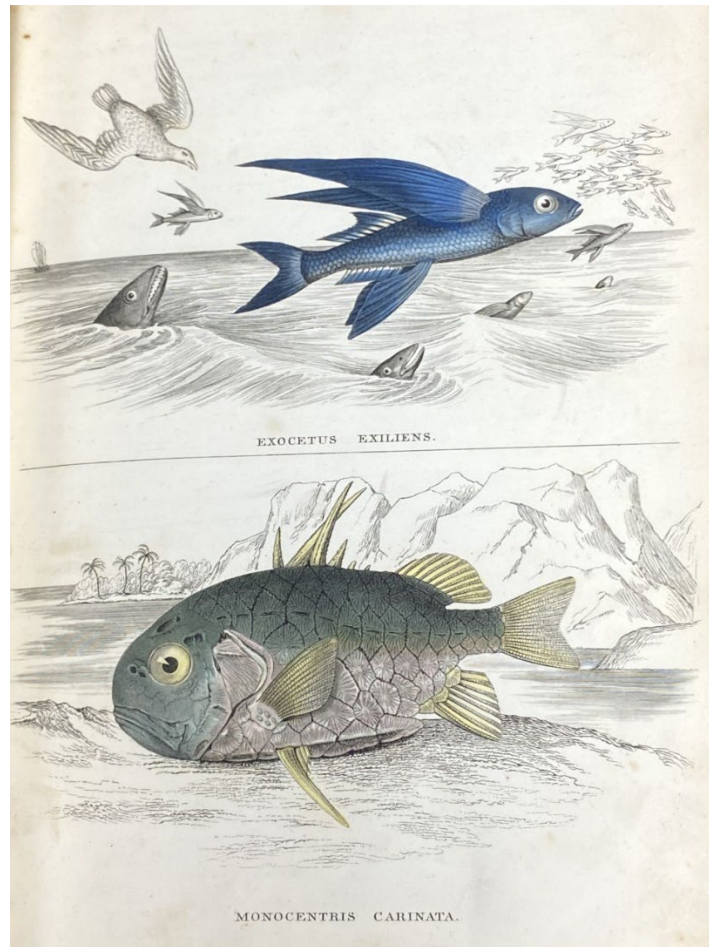


Figure 19. Hand-colored plate from *Naturhistorischer Bildersaal des Thierreiches: nach William Jardine* held by Department of Special Collections at University of Wisconsin-Madison Memorial Library.

The Naturalist's Library was immensely popular during its initial ten-year run, each of the forty volumes sold upwards of ten thousand copies. William Home Lizars and Sir William Jardine were able to capture a new audience of middle-class consumers who were dazzled and educated by zoological books with beautiful hand-colored illustrations. Lizars and Jardine were able to produce a quality product for the previously unheard-of price of six shillings per volume through utilizing new printing technology and coordinating the labor of authors, artists, printers, and colorists. After the series concluded in 1843, there were several re-prints for the next thirty years, and in 1848 London publisher Henry Bohn re-issued all forty volumes at an even lower price of

four shillings and sixpence.⁹³ Even today, almost two hundred years after *The Naturalist's Library* was first released, illustrations from the series can be found in cheap books and hung as art in people's homes.⁹⁴

The first half of the nineteenth century was an era of experimentation in print when publishers stopped exclusively producing works for the very wealthy. New formats such as periodicals, miscellanies, and serials began to proliferate among the lower classes in Britain. This coincided with a natural history craze that was spurred on by the cheap printed materials that featured illustrations of plants and animals. The study of nature was considered useful recreation among all levels of British society.

The Naturalist's Library represents a specific style of publishing that only existed for a short window of time. The inclusion of hand-colored engravings in mass-produced books only lasted for a few decades during the first half of the nineteenth century. While some publications like *Curtis's Botanical Magazine* kept up with the practice well into the twentieth century, most publishers opted to utilize new color printing processes such as chromolithography.⁹⁵ Many questions remain about the people, primarily women, who hand colored millions of images throughout the nineteenth century. These colorists breathed life into illustrations of plants and animals and contributed to the popularity of natural history during the period.

⁹³ Sheets-Pyenson, "War and Peace in Natural History Publishing," 69. Milwaukee Public Library holds a set of *The Naturalist's Library* published by Henry G. Bohn that includes the price on the spine "4s. 6d."

⁹⁴ One such book is *286 Full-Color Animal Illustrations from Jardine's "Naturalist's Library,"* Dover Publications, Inc. (Mineola, New York, 1999).

⁹⁵ Ray Desmond, *Great Natural History Books and Their Creators* (London: British Library and Oak Knoll Press, 2003), 21-23.

Some of the most well-known naturalists of the first half of the nineteenth century worked for *The Naturalist's Library* as authors and artists. In previous eras, these men would typically only communicate amongst themselves in correspondence networks of gentleman naturalists. Traditionally published expensive natural history books limited their audience to the upper class. By 1830, there was a desire by many to educate all levels of British society and encourage useful recreation. Cheap illustrated books like *The Naturalist's Library* facilitated the spread of scientific knowledge among the broader public.

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All forty volumes held by:

The American Geographical Society Library
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