

ENG 645: Species and Print, Extinction and Archive
Prof. Gordon M. Sayre
Winter term 2020 ~ CRN 22273
Mondays and Wednesdays from 10:00 to 11:20 in PLC 448

This course takes an innovative approach to literature and environment by combining the history of science with book history, and art, animal, and media studies. The species concept is fundamental to environmental politics, particularly in the United States, and species extinction is an acute concern now due to the threat of the Sixth Extinction and its role in marking the onset of the Anthropocene. For eco-critics and environmental activists, the importance of protecting biodiversity seems self-evident. In the broader public, the sentimental appeal of charismatic megafauna such as polar bears undergirds support for protecting habitats.

However, the definition of species and sub-species, the counting and documentation of species for the measurement of biodiversity, and indeed the very concept of species are all contested among scientists. These questions also need to be scrutinized by environmental humanists. In science, politics, and aesthetics, different definitions of species, which arose out of different historical moments, all operate on different scales and discourses. For some purposes, a species matters only if it has a visible identity and emotional impact, if we can see it in a zoo or possibly in the wild. For other purposes, microbial species matter even though they are not visible and known only by a Latin name, or even gene sequence in a database. Herbaria stocked with pressed leaves and flowers began in the sixteenth century, and by the eighteenth the collections of new natural history museums and academic gardens included type specimens, the referential guarantee for the Linnaean binomials of the quickly expanding dictionary of plants, animals, and insects.

We will follow the development of natural history from antiquity to contemporary bio-science, through the changing modes of species media. Species definitions rely on modes of reproduction and representation. As media have changed, from manuscript to print, from painting to printing to photography, and from specimen collections to genomic databases, species diversity has changed as well. Both visual and verbal conventions for species classification operate within the constraints of media reproduction technologies. We will study natural history and species media from the Renaissance to the age of genomics, and devote particular attention to two 18th and 19th-century American naturalists important both in literary history and the history of science, and talented at both writing and drawing: William Bartram and John James Audubon.

The seminar also offers insights on the development of eco-criticism, a fast-changing field of what is now known as environmental humanities. The sub-field was pioneered in the early 1990s by UO English faculty including Glen Love and Molly Westling. We will review how nature writing, re-wilding, deep ecology, and science studies have each contributed to the growth of the discipline.

Books at the UO ~~Book~~-Duck Store:

John James Audubon, *Writings and Drawings*, Library of America edition

William Bartram, *Travels*, Library of America edition

Beth Shapiro, *How to Clone a Mammoth* (Princeton UP, 2015)

Londa Schiebinger and Claudia Swan, eds., *Colonial Botany: Science, Commerce, and Politics in the Early Modern World* (U Penn Press, 2005)

Writing Assignments: three short or medium-length papers (2000 - 5000 words) on Archive, Fieldwork, and Theory. The three essays are due on January 29th, February 24th, and March 17th. One of the three should be related to the topic of the seminar presentation, and another will be the end of term project, which should have more bibliography and scholarly references. Each student may choose to arrange the Archive, Fieldwork, and Theory papers in any order. Meet with me during the first two weeks to discuss how you plan to complete the assignments.

Archive essay: write about an old natural history book, herbarium, museum exhibit, fossil collection or any way in which species are represented stored or catalogued. Consider how extinct species are memorialized and archived by various institutions.

Fieldwork practicum: go out in the field to search for and identify species, using some guide or app such as leafsnap. Or, report on a species conservation issue in the region. This is an opportunity to explore how books mediate people's knowledge of an interaction with living species.

Theory analysis: report or review an eco-critic writing on these issues. Could be Foucault or Haraway or Latour or could discuss additional critical assessments of one of the figures we are reading, such as Audubon, Buffon, or Bartram.

Presentation: In weeks four through eight we will schedule presentations by each student.

An English graduate seminar is a chance to both explore new areas of research and to build upon one's own interests and special fields, as well as learn library research methods. The assignments outlined here are meant to provide flexibility for students who wish to pursue individual interests in theoretical or inter-disciplinary topics. The assigned readings are just a sample of the material I have prepared for the seminar, and I encourage students to meet with me regularly to discuss ideas for writing and research. Please choose by week 4 how you intend to arrange the three assignments.

Schedule of Assignments (subject to revision)

Week 1: The Sixth Extinction & Biodiversity in a Genomic Age

Since around 1990 four developments have profoundly changed humans' relations to the earth's biota: advances in genomics, global climate change, the extinction of species and loss of biodiversity, and the concept of the Anthropocene. How do the four trends relate and interact? How can environmental humanities contribute to understanding these trends?

January 6th: Extinction and the genres of literary history

- Ursula Heise, "Lost Dogs, Last Birds, and Listed Species: Cultures of Extinction" *Configurations* 18 (2010); 49-72.
- E. O. Wilson, "The Major Historical Trends of Biodiversity" in *Systema Naturae 250: The Linnaean Ark*, ed. A. Polaszek (Taylor and Francis, 2010), 1-4 (pdf)
- Joseph Meeker, excerpt from *The Comedy of Survival*

January 8th: The Library of Life

- Gordon McGregor Reid, "Taxonomy and the Survival of Threatened Species: A matter of Life and Death" in *Systema Naturae 250*: 29-51.
- Elizabeth Kolbert, "The Lost World" pt. 1 *The New Yorker*, Dec. 16th, 2013.
- Gordon M. Sayre, "The Alexandrian Library of Life: A Flawed Metaphor for Biodiversity" *Environmental Humanities* 9:2 (November 2017), 280-299.

Weeks 2 and 3: Species in Print: Renaissance Botany and Species Media

In the Rhineland in the 1530s were published the first comprehensive illustrated guides to plants, with woodcut prints accurate enough to identify plants in the field. This new form of media made species possible, and thus contributed to a scientific revolution. These books mark an important link between species and print, but it also require a different strategy of reading from what we are used to as literary scholars. How can we read Latin plant books? Do we just look at the woodcuts? Do we observe the structure of each entry or the order of entries as a taxonomy? We will consider these reading strategies alongside fieldwork methods of finding and interpreting species in their habitats.

January 13th: How are species like books? How did the species of America transform European natural history?

- Gordon M. Sayre "Species in Print: Renaissance Illustrated Plant Books and the Study of Species Diversity" (draft chapter)
- Claudia Swan, "The Uses of Realism in Early Modern Illustrated Botany" in *Visualizing Medieval Medicine and Natural History, 1200-1500*
- Whitney Trettien, "Plant > Animal > Book" *Postmedieval: A Journal of (not) early modern studies*

January 15th: Words, Pictures, or Specimens? Which is most essential for the identification of species? Fieldtrip: meet in Knight Library Special Collections

- Brian Ogilvie, "The Many Books of Nature: Renaissance Naturalists and Information overload" *Journal of the History of Ideas* 64:1 (January 2003), 29-40
- Sachiko Kusukawa, "Leonard Fuchs on the importance of pictures." *Journal of the History of Ideas* 58:3 (July 1997), 403-427.
- Karen Reeds, "When the botanist can't draw: the case of Linnaeus" *Interdisciplinary Science Reviews* 29:3 (2004), 248-258
- Review the guide "UOSC Fieldtrip notes" on Canvas

January 20th ~ no class Martin Luther King Jr. holiday

January 22nd: Structuralism and structures of nature: Foucault's epistèmes in the history of science.

- Michel Foucault, from *Les Mots et les choses* trans. *The Order of Things: An Archaeology of the Human Sciences* (1966) New York: Vintage, 1973. Part I, Chap. 5 "Classifying" 128-165.
- Walter Mignolo, from "Commentary" to José de Acosta, *Natural and Moral History of the Indies*. trans. Frances López-Morillas. Duke UP, 2002, pp. 456-474

Week 4: American nature and indigenous taxonomy in natural history manuscripts

Transporting specimens from American habitats to European "centres of calculation" (Bruno Latour's term) was difficult in the early modern period, even for pressed plants. Daniela Bleichmar has called this "the fragility of knowledge in motion." And aside from live and preserved specimens, many superb illustrated natural history manuscripts from America did cross the Atlantic but were not published, preserved, or widely studied in Europe. Gonzalo Fernandez de Oviedo, Francisco Hernandez, the *Codex Badianus*, Maria Sybilla Merian, Louis Nicolas and Jane Colden are a few of these authors and manuscripts. The few available sources on early modern indigenous taxonomy in Native American cultures are evidence for the study of ethnobotanical knowledge, or folkbiology.

January 27th - The *Codex Canadensis*

- *The Codex Canadensis and the Writings of Louis Nicolas*, the first translation and full edition of Nicolas' work, is a very large book and is in the Knight library reserves. Request it at the circulation desk, and look through the illustrations, and read about the Moose, Beaver and Michipichik, pp. 330-349

- Gordon M, Sayre, “Michipichik and the Walrus: Anishinaabe Natural History in the 17th century work of Louis Nicolas” *JEMCS* 17 (2017)
- Jared Diamond and K. David Bishop, "Ethno-ornithology of the Ketengban People, Indonesian New Guinea" in *Folkbiology*, ed. Douglas L. Medin & Scott Atran, (MIT Press, 1999).

Jan. 29 - Folk Biology and the Aztec Herbal ; Presentation by _____, Project #1 due

- Daniela Bleichmar, “Books, Bodies, and Fields” in *Colonial Botany*
- Deborah Hassig, “Transplanted Medicine: Colonial Mexican Herbals of the Sixteenth Century” *RES: Anthropology and Aesthetics* 17/18 (1989), 30-53.

Week 5: Linnaeus and Modern Taxonomy

The Swedish botanist Carl Linnaeus (1707-1778) devised the sexual system of classification for flowering plants, and subsequently also popularized the binomial nomenclature that has become the standard for species identity. His *Systema naturae* is the foundation of modern taxonomy. The system was particularly influential in Britain, where it helped inspire the popular mania for gardening and natural history from the 1750s through 1850s. But this influence obscures his real biography, and the biases of his approach. This week we will study Linnaean botany and taxonomy in cultural and historical context.

February 3rd: Linnaeus, the sexual system in botany, and binomial nomenclature

- Lisbet Koerner, “Carl Linnaeus in his time and place” and Londa Schiebinger, “Gender and natural history” in *Cultures of Natural History*, ed. Jardine and Spary, 1996, pp. 146-177.
- Koerner, *Linnaeus: Nature and Nation* (Harvard UP, 1999) pp. 26-45
- Stefan Muller-White, “Walnuts at Hudson Bay, Coral Reefs in Gotland: The Colonialism of Linnaean Botany” in *Colonial Botany*

February 5th: *The Loves of the Plants* - Poetry, Botany, and Gender. Presentation by _____

- Erasmus Darwin, from *The Loves of the Plants*, part 2 of *The Botanic Garden* [e-text]. 1st canto, including lines 139-150, about the *Silene* or Catchfly plant
- Janet Browne, “Botany for Gentlemen: Erasmus Darwin and *The Loves of the Plants*” *ISIS* 80 (1989), 593-621
- Antonio Lafuente and Nuria Valverde, “Linnaean Botany and Spanish Colonial Biopolitics” in *Colonial Botany*.

Week 6: Jefferson and Buffon on American Degeneracy, and visit to UO's fossil collections

Georges-Louis Leclerc, Comte de Buffon, was born in the same year as Linnaeus, but the two became rivals with contrasting theories and styles of natural history. Whereas Linnaeus’ binomial nomenclature became foundational for species taxonomy, his writings in Swedish and Latin are not widely studied today. Buffon’s theories receive less attention today, but his multi-volume *Histoire naturelle* was among the most widely read texts in eighteenth-century Europe. Buffon became associated with the theory that American nature was less fertile and healthful than that of Europe, which set off a polemic that influenced the creole revolutions of the 1770s-1820s.

February 10th

- Thomas Jefferson, *Notes on the State of Virginia*, Query VI (e-text). Presentation by _____
- Buffon’s chapters on Lion and “Animals of the New World” and “Animals Common to the two continents” in vol. 5 of William Smellie, trans., *Natural history, general and particular, by the Count de*

Buffon London, 1785, 9 vols. It is available at UO library website through ECCO: Eighteenth-Century Collections Online.

February 12th: Visit to species archive

Prof. Greg Retallack of the UO Dept. of Earth Sciences will lead a tour of fossil collections. Meet in his office in 300 Cascade Hall

Beth Shapiro, *How to Clone a Mammoth* pp. TBA

Week 7-8: William Bartram

Because America in the 18th century lacked a printing and publishing infrastructure of skilled engravers, woodcutters, type foundries, papermakers and printers, natural history as practiced in America in some ways was forced to step back to a stage prior to the print revolution. The barriers of distance and time meant that species representation in America in the 17th and 18th centuries could occur only when one person united many skills, to travel, find, collect, interpret, comprehend, describe and depict, new species and specimens. William Bartram, Maria Sybilla Merian, and John James Audubon were among a very few who had first-rate artistic talents to go with the other skills. Bartram also was able to bring romantic literary imagination to Latinate Linnaean binomials, and to interrogate the divisions between plant, animal and human.

February 17th: Bartram day 1; Presentation by _____

- William Bartram, *Travels through North and South Carolina, Georgia, East and West Florida...* Introduction, Part I, and Part II, chapters 1, 2 (pp. 13-78)
- Thomas Hallock, "Male Pleasure and the Genders of Eighteenth-Century Botanic Exchange: A Garden Tour" *William and Mary Quarterly*, 3rd Series, Volume LXII, Number 4 (Oct. 2005)

February 19th: Bartram day 2; Presentation by _____

- William Bartram, *Travels through North and South Carolina, Georgia, East and West Florida...* Part II, chapters 3-5 (pp. 79 - 152)
- Monique Allewaert, "Swamp Sublime: Ecologies of Resistance in the American Plantation Zone" *PMLA* 123: 2 (March 2008)

February 24th Bartram day 3 Project #2 due

- William Bartram, *Travels through North and South Carolina, Georgia, East and West Florida...* Part II, chapters 7, 10 (pp. 187-214, 223-252)
- Christopher Looby, "The Constitution of Nature: Taxonomy as Politics in Jefferson, Peale, and Bartram" *Early American Literature* 22 (1987), 252-273.

Week 8-9: John James Audubon

Audubon is known today as an artist and ornithologist and as namesake of a major conservation organization. He was also a talented writer and storyteller, who, like Cooper's Leatherstocking, helped to form the mythic image of the settler colonial frontiersman in the early 19th century. Audubon's mysterious biography, from his birth in Saint Domingue to his claims of ties to major figures of the French Revolution, also make him a fascinating figure. With respect to this course, his work is foundational for a shift in species media; from painting and engraving to photography, and from pastoral abundance to capitalist scarcity. I provide references to our Library of America book, and, for the viewing the bird paintings (and reading the accompanying ornithological biographies) to the University of Pittsburgh library's Audubon website. www.audubon.pitt.edu

February 26th ; Presentation by _____
"My Style of Drawing Birds" (p. 531 or Vol 2 plate 158) and "Myself" (p. 1-30) Sketches: "Florida Keys I & II" (p. 451 or Vol. 2 plates 155, 160) or Vol 2 plate 140) "Spring Garden" (p. 433 or Vol. 2 plate 145) "A Flood" (p. 487 or Vol. 1 plate 30)

March 2nd ; Presentation by _____
Sketches: "Louisville in Kentucky" (p. 377 or Vol. 1 plate 85) "The Eccentric Naturalist" (p. 508 or Vol. 1 plate 90) "Live Oakers" (p. 429; *Ornithological Biography*: Passenger Pigeon, Chimney Swallow (p. 552, 560), and "Black Vulture or Carrion Crow" (vol. 2 plate 106).

March 4th ; Presentation by _____

- Laura Dugan Partridge, "By the Book: Audubon and the Tradition of Ornithological Illustration" in Amy R. Meyers, ed. *Art and Science in America: Issues of Representation*.
- Christopher Irmscher, "Audubon at Large" from *The Poetics of Natural History*

Week 10: Rewilding and de-extinction

Re-wilding as a science is subfield of ecology that began around 1985 when Michael Soulé co-founded the journal *Conservation Ecology*. It aims to restore ecosystems and food-webs to an earlier, healthier state, often by emphasizing the role of "keystone species," such as wolves, elephants, big cats, or avian and marine predators, all of which have declined due to habitat loss, hunting and eradication. Re-wilders believe megafauna and carnivores influence vegetation in their habitats (whether savannahs, deserts, forests, or boreal tundra), and also prize them for authenticity and sublime wildness. The movement has influenced popular culture by connecting modern and primitive life, such as through paleo diets, and literary epics and mythology have themselves been built upon encounters with megafauna, as Adrienne Mayor has argued and as ancient cave paintings demonstrate.

In the first week we will look at some early articulations of rewilding philosophy, and learn about how genomics may make de-extinction possible. In the second week we will study how the Mammoth and Mastodont were the species upon which the concept of extinction, the controversy over American degeneracy, and the beginnings of paleontology all relied in the late 18th century. In the last few decades, the Mammoth has also been the poster species for efforts to use genomics to "de-extinct" animals that were wiped out by humans.

March 9th: Re-wilding

- Paul S. Martin, "The Last Entire Earth" *Wild Earth* 2:4 (Winter 1992/93) 29-32.
- Michael Soulé and Reed Noss, "Rewilding and Biodiversity: Complementary Goals for Continental Conservation" *Wild Earth* 8.3 (Fall 1998), 18-28.
- [chapter from *Once and Future Giants* might be appropriate?]

March 11th: De-extinction; Presentation by _____

- Beth Shapiro, *How to Clone a Mammoth: The Science of De-Extinction* (Princeton UP, 2015)
- Tim Sweet, "The Eighteenth-Century *Archives du Monde*: The Question of Agency in Extinction Stories" [I can use published version now, but may need to ask Tim for a copy]
- Gordon M. Sayre "The Mammoth: Endangered Species or Vanishing Race?" *JEMCS* 1:1 (2001) 63-88

Final meeting during exam period 10:15 Tuesday, March 17th and Project #3 due

Keywords to learn for this term:

Species media

Type specimen, holotype, and lecto-holotype

Binomial nomenclature

Sexual system of plant taxonomy

Charismatic megafauna

Shifting baseline syndrome

Geo-myth

Re-wilding

De-extinction

Pastoral or pastoral abundance

Horizon of Authenticity

Pleistocene and Pleistocene megafauna

Island biogeography

Keystone species and trophic cascades