

## ENG 645: Libraries of Life: Species and Print, Extinction and Archive

Prof. Gordon M. Sayre

Spring term 2016 ~ CRN 36715

Wednesdays from noon to 3 in PLC 253

draft syllabus

The species concept is fundamental to environmentalism today. The Endangered Species Act is the most powerful tool in United States law for the protection of species and habitat, and therefore is intensely politicized (see grey wolf, northern spotted owl, marbled murrelet, snail darter, and others). Species extinction is a particular 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 rare species and maintaining biodiversity seems self-evident. In the broader public, the sentimental appeal of charismatic megafauna like polar bears undergirds support for protecting habitats and reducing carbon emissions.

And yet 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 hotly contested by scientists. These questions also need to be scrutinized by environmental humanists. In science, politics and aesthetics, we use several different definitions of living species that operate on different scales, and that arose out of different historical moments. 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 bestowed by specialist naturalists, or even a number associated with a database file. 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 treasured type specimens, the referential guarantee for the Linnaean binomials of the quickly expanding dictionary of plants, animals, and insects.

This seminar is based on my research for a project that explores how biological species diversity has always relied on the media available to represent and classify natural organisms. 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.

Books at the UO Store:

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)

~~[John James Audubon, Penguin Nature Library edition]~~ The Audubon book is unavailable, so we will use the Pitt library site instead, as it has all of the *Ornithological Biography* and the sketches of American Scenery and Character.]

**Writing Assignments:** three short or medium-length papers, one of which is the topic of a seminar presentation, and another is the term-end project. Students can choose which is which. Meet with me during the first two weeks to discuss these topics.

Archive assignment: write about an old natural history book, herbarium, museum exhibit, fossil collection or any way in which species are represented stored or catalogued.

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.

Theory assignment: 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.

### **Schedule of Readings:**

#### **March 30th: The Sixth Extinction & Biodiversity in a Genomic Age**

- Ursula Heise, “Lost Dogs, Last Birds, and Listed Species: Cultures of Extinction” *Configurations* 18 (2010); 49-72.
- My draft article, “The Alexandrian Library of Life: A Flawed Metaphor for Biodiversity”
- E. O. Wilson, “The Major Historical Trends of Biodiversity” and Gordon McGregor Reid, “Taxonomy and the Survival of Threatened Species: A matter of Life and Death” in *Systema Naturae 250: The Linnaean Ark*, ed. Andrew Polaszek (Taylor and Francis, 2010), 1-4, 29-51.

I'll use my notes for my introduction, and explain about how the number of species has been growing quickly in the age of high-throughput genomics. We will discuss various definitions of species (use Ernst Mayr) and the ways they've been defined (article by Hamilton and Wheeler in *ISIS* 99:2) Discuss species/specie/specimen, inspired by Jean-Joseph Goux's *Symbolic Economies: After Marx and Freud*, and as Nathan did in his book, *Species of Capital*. Also, Lisbet Koerner's account of Linnaeus' cameralism and fear of losing Sweden's silver supports this, as well as her remarks on the number of species in *Nature and Nation* 44-45.

#### **April 6th and 13th: Species in Print: Renaissance Botany and Media Biology**

How do 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? Consider these reading strategies alongside our methods of finding and interpreting species in their habitats. Consider a practicum at Mt. Pisgah or Fern Ridge using plant guides, the Linnaean sexual system, and the leafsnap app. Students should go April 5th talk by Ralph Bauer, “Alexander von Humboldt and the Crucible of the Tropics”

April 6th first half of seminar will be in Special Collections, 12 to 1:30 to look at:

Linnaeus, *Systema Naturae* 501 L649

Bartram's *Travels* in 1793 Dublin edition (3rd, after 1791 Philly and 1792 London) 917.5 B286t

Andrea Alciati, *Emblemata* 879 A117

John Gerard, the *Histoire des drogues*,

Leonard Fuchs, *De historia stirpium*, octavo edition

Rembert Dodoens, and other herbals and botany books

Buffon, *Histoire Naturelle: Botanique* (Burgess 044)

Buffon, *Histoire Naturelle*, Paris 1825-26 with Atlas QH45 .B78 Rare books

[there are a bunch more]

[I still need to divide these readings for each of the two weeks]

- My draft chapter, “Species in Print: Renaissance Illustrated Plant Books and the Study of Species Diversity.”
- 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.
- Sachiko Kusukawa, “Leonard Fuchs on the importance of pictures.” *Journal of the History of Ideas* 58:3 (July 1997), 403-427.
- Brian Ogilvie, “The Many Books of Nature: Renaissance Naturalists and Information overload” *Journal of the History of Ideas* 64:1 (January 2003), 29-40
- David Freedberg, “The Failure of Colour” in *Sight and Insight: Essays in Honor of E. H. Gombrich*. (Phaidon, 1994) 245-262
- F. David Hoener, “How Plants and Animals were studied in the 16th c.” in *Science and the Arts in the Renaissance* (1985), 130-148.
- Karen Reeds, “Renaissance Humanism and Botany” *Annals of Science* 33 (1976), 519-541
- Reeds, “Leonardo da Vinci and Botanical Illustration: Nature Prints, Drawings, and Woodcuts, ca. 1500” and Claudia Swan, “The Uses of Realism in Early Modern Illustrated Botany” in *Visualizing Medieval Medicine and Natural History, 1200-1500*

#### **April 20th: American nature in Manuscript:**

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. This was what Daniela Bleichmar has called “the fragility of knowledge in motion.” And even aside from live and preserved specimens, it is remarkable how many illustrated natural history manuscripts from America failed to be published, preserved, or properly studied in Europe. Oviedo, Francisco Hernandez, the *Codex Badianus*, Maria Sybilla Meriam, Louis Nicolas and Jane Colden are just a few. Discuss the idea of lost ethnobotanical knowledge, and folkbiology.

- *The Codex Canadensis and the Writings of Louis Nicolas*, I ordered at Knight reserve. Ask students to look through the illustrations, and read about the Moose and Michipichik.
- My draft article: “Michipichik and the Walrus: Anishinaabe Natural History in the 17th century work of Louis Nicolas”
- Daniela Bleichmar, “Books, Bodies, and Fields” in *Colonial Botany*
- 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).
- Deborah Hassig, “Transplanted Medicine: Colonial Mexican Herbals of the Sixteenth Century” *RES: Anthropology and Aesthetics* 17/18 (1989), 30-53.

#### **April 27th: Linnaeus and Taxonomy**

The sexual system of classification for flowering plants, and the *Systema naturae* for all living things is the foundation of modern taxonomy, and has made Linnaeus a central figure for species identity. His 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.

- Karen Reeds, “When the botanist can't draw: the case of Linnaeus” *Interdisciplinary Science Reviews* 29:3 (2004), 248-258.

- Londa Schiebinger, *Nature's Body: Gender in the Making of Modern Science* (1993) ch. 1 “The Private Lives of Plants” and/or chapter 2 “Why Mammals are called Mammals”
- 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
- Lisbet Koerner, *Linnaeus: Nature and Nation* (Harvard UP, 1999) chapters 1 & 2, pp. 14-52
- Stefan Muller-White, “Walnuts at Hudson Bay, Coral Reefs in Gotland: The Colonialism of Linnaean Botany” in *Colonial Botany*
- Janet Browne, “Botany for Gentlemen: Erasmus Darwin and *The Loves of the Plants*” *ISIS* 80 (1989), 593-621
- Visit the JSMA to see the Olga Volochkova, Nature of Religion exhibit

#### **May 4th: Buffon and the American Degeneracy controversy**

Use this week to introduce the Mammoth and megafauna theme, but also follow up on Linnaeus, and perhaps show how Buffon’s “Archives de la nature” in *Epoques de la nature* anticipates the anthropocene. My presentation from UCSB could be used here, as well as excerpts from Kalm and Thomas Jefferson that I’ve used before. Emphasizing the American Degeneracy controversy makes sense given that I have only one week.

- My presentation from UCSB in 2014: “American Degeneracy: Colonial Science and Environmental Degeneracy in the 18th century”
- Thomas Jefferson, *Notes on the State of Virginia*, Query VI
- 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 on ECCO
- Antonio Lafuente and Nuria Valverde, “Linnaean Botany and Spanish Colonial Biopolitics” in *Colonial Botany*.
- Peter Kalm, *Travels in North America* (1753) Dover, 1964 pp. 54-56, 186-195, 305-309
- Hanna Roman, “Naming as Natural Process and Historical Narrative in Buffon’s *Histoire Naturelle*, 1749-1755” *Romance Studies* 31: 3-4 (Nov. 2013), 238-250.

[Gilbert Chinard’s “America as Human Habitat” is a long detailed article on the controversy]

#### **May 11th: 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 had to step back to a stage prior to the print revolution. The barriers of distance and time Bleichmar calls the “fragility of information in motion,” meant that species representation in America in the 17<sup>th</sup> and 18<sup>th</sup> 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 Meriam, 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 Latinize Linnaean binomials, and to interrogate the distinctions between plant and animal and human.

- *Travels* Introduction, Part 1, Part 2 chapters i – vi pp. 13-186.
- Chapter by Thomas Hallock in *From the Fallen Tree*, or article from *SAQ* 2001

### **May 18th: John James Audubon**

Sketches: "Louisville in Kentucky" "The Eccentric Naturalist" "Live Oakers" and "Spring Garden" because they go with Bartram. "A Flood" and "Florida Keys I & II" for shooting birds, and "My Style of Drawing Birds" and "Myself" for his methods. *Ornithological Biography*. Passenger Pigeon, Chimney Swallow, and the Vulture. I'll need to locate each of these in the Darlington Library e-text, which runs five volumes.

My presentation from MLA 2016 in Austin

- 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*. or
- Christopher Irscher, "Audubon at Large" from *The Poetics of Natural History*

### **May 25th and June 1st: Rewilding and de-extinction**

the Mammoth is a good framework to connect the 18th century material, Buffon and Cuvier and the development of the concept of extinction and the use of comparative anatomy for paleontology. Kolbert's *New Yorker* piece on Cuvier and extinction that later became a chapter in *The Sixth Extinction*. Ecologists justify a preference for charismatic or flagship megafauna due to their influence on native vegetation (in savannahs, deserts, or boreal forests and tundra), and the related notions of the horizon of authenticity, of size and wildness are very humanistic. Also, the link to the Nazi naturalists through the Heck cattle is interesting. It was Simon Schama's *Landscape and Memory* where I first read about this. And all that doesn't even scratch the de-extinction! I guess I could devote one week to re-wilding and one to de-extinction.

First week we will discuss re-wilding and the megafaunal trophic cascade using the mammoth as a focus. Then the second week we will discuss de-extinction.

Bruno Seraphin will visit the seminar on June 1st and share his research on the hoopsters in the Great Basin

- *How to Clone a Mammoth*
- Tim Sweet's article on Agency and Extinction.
- My "The Mammoth: Endangered Species or Vanishing Race?" *JEMCS* 1:1 (2001) 63-88
- Aldo Leopold on importance of predators, or something by re-wilding promoters like Michael Soulé and Paul S. Martin
- George Monbiot, *Feral* is probably the best book I've found on re-wilding, but also consider Weidensaul, *The Ghost with Trembling Wings* or Levy, *Once and Future Giants*.
- Geoffrey Bowker, "Biodiversity Datadiversity" *Social Studies of Science* 30:5 (2000) 643-683.
- Andrew Hamilton and Quentin D. Wheeler, "Taxonomy and Why History of Science Matters for Science" *ISIS* 99:2 (June 2008), 331-340