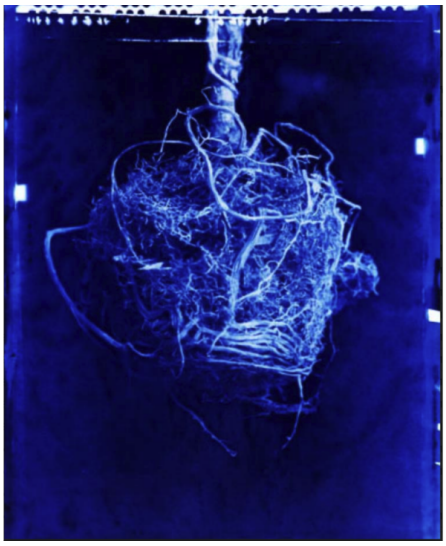
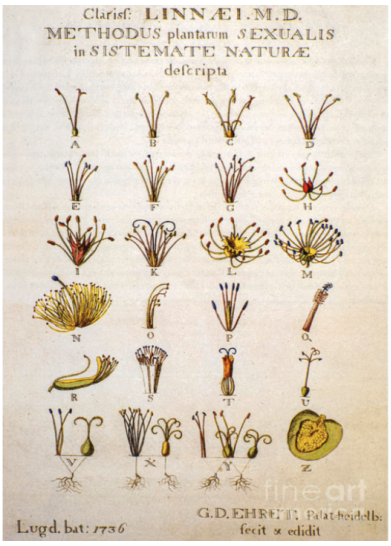
post-apocalyptic botany:
towards a new science, nature, politics

Monstrorum Historia, Ulisse Aldrovandi 1642



Rootball 2000



Carl Linneaus Systema Naturea 1735

Jake Kosek & Paul Fine
Geography & Integrative Biology (GEOG 154 & IB C165)
Thursdays 9:30am -12:30pm

Course Number: (GEOG 154 & IB C165)
Instructors: Paul Fine & Jake Kosek
Effective Start Term: Spring 2023
Semester Offered: Every other Spring
Course Description: (500 characters): This class focuses on the scientific practice of modern botanical taxonomy as a colonial formation that conditions our modern relations. First, we will explore how plants are classified and what anomalies trouble current botanists. Next, we study how specific taxonomic orderings were often forged to be of service to empire-building and how their enduring legacies within modern botanical practices. Last, we will develop classification keys that acknowledge, produce, and imagine other relationships.
Grading: Letter
Number of Units: 4
Final Exam: (alternative final exam which consists of a final project and a presentation)
Course format: 3 hours of lecture and discussion weekly, plus three field trips
Prerequisites: none
Repeatable for Credit: No
Enrollment restrictions: Undergraduates
Meeting Pattern: Thursdays 9:30 am-12:30 pm, 3-weekend field trips
Expected enrollment: 22 students
Justification: why is this course being proposed (1000 characters)

Botany and Taxonomy may seem ancillary to many of these central issues of our time, but our belief is that by taking them for granted, we miss a basic possibility of imagining and living in a world with radically different relations, with other affinities, kinship, and communities. In fact, the basic elements of classification that underlie most of our relations today (species, humanity, ecology, etc.) were created through debates related to colonial botany and empirical expansion. This also means that it is most likely that those tools, modes of thought, and ways of ordering that we are using to address this moment of crisis are either inadequate or complicit or both. We believe both that the many and varied legacies of colonial taxonomies reside not in abstract ideas but in ongoing and quotidian scientific practices of ordering and that other orderings are not only possible but necessary.

SYLLABUS

Course Description:

Every day the news feed offers an astounding collection of global calamities and staggering metrics. The extinction rate is now 1000 times higher than background levels; 7 of the hottest years in the last 140 have occurred since 2014; in one year, the World Health Organization estimates, 7 million people died - one in eight of total global deaths – as a result of air pollution exposure, 10 million of people in the last decade have become climate refugees. Once-in-a-century fire, 500-year floods, 1000-year droughts, not-since-the-ice-age glacier retreats, never in recorded history climatic events happen so frequently that they hardly surprise us even as they profoundly transform, in vastly unequal ways, all our everyday lives.

Botany and Taxonomy may seem ancillary to many of these central issues of our time, but our belief is that by taking them for granted, we miss a basic possibility of imagining and living in a world with radically different relations, with other affinities, kinship, and communities. This also means that it is most likely that those tools, modes of thought, and ways of ordering that we are using to really address this moment of crisis are either inadequate or complicit, or both. In fact, the basic elements of classification that underlie most of our relations (species, humanity, ecology) were created through debates related to colonial botany and imperial natural history. The distinctions derived from the context of these colonial sciences are so assumed that the questions derived from questioning their order seem almost nonsensical, even though we know there have been and continue to be radically different ways of understanding and delineating them. How do we know and define who is we and who is they? How do we come to delineate the line between one species and another, between the human & animal, living & non-living, subject & object? A serious anti-colonial approach to the science of botany requires a deep engagement with the scientific practices of taxonomy, a situated and attentive tracing of these practices and orderings within the colonial histories of science, and finally, a creative method of grounded exploration that acknowledges and imagines other modes of thought and relation.

This class focuses on the classificatory element of this story that is at the core of the relations we have with others, and the profound ways the residues of this scientific order of things, continue to

shape our relations. Importantly for us, an anti-colonial science of botany requires more than an abstract critique but instead a deep and critical engagement with the scientific practices of taxonomy themselves, a situated and specific grounding of these practices and politics within colonial histories of science and their enduring forms, and finally, we believe, it spurs a need for an open and creative method of remaking taxonomic practice through investigation that acknowledges and imagines other modes of thought and relation.

COURSE REQUIREMENTS

This course is designed to run as an intensive seminar. You are expected to read ALL of the material for the class. Weekly commentaries of 400–500 words will make up 25% of your grade, the class presentation will make up 15%, participation in discussions will make up 25%, and a final project will make up 35%. We also require that you attend all three field trips.

Alternative Final Exam: Final Project

Your final project will be a functional alternative taxonomic key of your own making. Using principles and methods learned in class, you will develop a means of assembling an alternative classification of relationships among things /beings, and you will present your key to the class, explaining what is enabled by your particular mode of classification. This project is equivalent to a final exam for this class.

Class Participation

As a seminar, this class requires your attendance and engaged participation. Everyone is allowed two free, no-questions-asked absences during the semester. Each subsequent absence will negatively affect your participation grade. You are responsible for bringing the readings with you to class. This is an unplugged seminar; electronic devices aren't allowed in class. After the second week, we will be working with the Slack app post and communicating outside of class.

Please Note: We will accommodate students who have conflicts due to religious observance. Please contact the instructors to make arrangements.

Field Trips

There will be 3-weekend field trips in this class. They are a very important part of this course. We will provide transportation and organize where to stay (including camping equipment, if needed). In the case of illness or inability to attend for any other approved reasons (family emergency, conflict with other classes, etc.), the students will be excused for the field trip and still obtain their full participation points. Students who are not excused will lose 5% of their participation points. For course conflicts, please discuss this with instructors as soon as possible (and at least a week before the field trip). Illnesses and family emergencies, of course, may not allow for advance notification.

Required Texts for Course

The course reader will be available at Copy Central and online by the end of the second week.

INTRODUCTION

January 19th: Welcome and enticements, the stakes of taxonomy, and the future of the world's end.

PART 1: THE ORDER OF THINGS: TAXONOMIES, CLASSIFICATIONS, KEYS

January 26th: Plant Taxonomy: From Linneaus to de Candolle to Cronquist to de Quieroz.

Linnaeus, C. 1735. *Systema Naturae*, Nieuwkoop de Graaf, University of Amterdam: 7-30.

Cronquist, A. 1999. The Evolution and Classification of Flowering Plants (2nd ed.). New York Botanical Garden, Bronx, New York.

de Queiroz, K. 2007. Species Concepts and Species Delimitation. *Systematic Biology* 56: 879-886.

February 2nd: Phylogenetics and the molecular revolution in plant taxonomy

Judd, W. S. 2002. Plant Systematics: A Phylogenetic Approach (2nd ed.). Sinauer Associates, Sunderland, MA.

February 9th: Taxonomy in 2023: species descriptions, keys, floras, phylogenies, field guides

Jepson Flora Project (eds.) 2022. Jepson eFlora, https://ucjeps.berkeley.edu/eflora/

February 16th: What is a species? Species concepts and speciation, with a special emphasis on manzanitas (*Arctostaphylos* (Ericaceae)

Mishler, B. D. 2021. *What, if anything, are species?* CRC Press, Milton.

Kauffmann, M., Parker, T., and M. Vasey. 2015. *Field Guide to Manzanitas: California*, North America, and Mexico. Backcountry Press, Kneeland, CA.

<u>February 18th-19th: Field Trip 1: San Bruno, Mt. Tamalpais (West Peak), UC Berkeley Point Reyes Field Station</u>

PART 2: UNMAKING THE ORDER OF THINGS: EXCEPTION WORLDS

February 23rd*:* Making THE WORLD: The Colonial Origins of Science and Taxonomy

Law, J. 2015. "'What's Wrong with a One-world World?'" *Distinktion: Scandinavian Journal of Social Theory* 16:1-14.

Pratt, M. L. 1992. "Science, Planetary Consciousness, Interiors." in *Imperial Eyes: Travel Writing and Transculturation*. London: Routledge, 16-37.

Ghosh, A. 2021. Nutmeg's Curse: Parables for a Planetary Crisis. Chicago, University of Chicago Press.

March 2nd: Making Difference: The Biologies of Race and Patriarchy

Latour, B. 1999. Circulating Reference & The Historicity of Things. In *Pandora's Hope*, Cambridge Mass., Harvard University Press.

Fara, P. 2004. Sex, Botany, and Empire, New York, Colombia University Press.

Schiebinger, L. 1993. Why Mammals are Called Mammals: Gender Politics in Eighteenth-Century Natural History. The American Historical Review. Vol 98. No.2. 382-411.

March 9th Making Natural Resources: Capitalism, Commodities, and Carbon

Malm, A. 2021. How to Blow up a Pipeline. New York Verso Press. Pages 1-45

Scott, J. 1996. State Simplifications: Nature, Space & People. Nomos, vol. 83, pages: 42-85.

March 16th The Master's Tools and the Limits of Environmental Management

Lorde, A. 2007. "The Master's Tools Will Never Dismantle the Master's House." 1984. Sister Outsider: Essays and Speeches. Ed. Berkeley, CA: Crossing Press. 110-114. 2007.

Mckittrick, 2021. Dear Science. Durham, Duke University Press: 1-32

Tuck, E. & McKenzie, M. 2015. Decolonizing Perspectives on Place, In Place in Research: Theory, Methodology and Methods. New York, Routledge.

March 23rd: Becoming Undone

Schrader, A. 2010. Responding to Pfiesteria piscicida (the Fish Killer): Phantomatic Ontologies, Indeterminacy, and Responsibility in Toxic Microbiology. Social Studies of Science.

De La Cadena, M. 2015. Uncommoning Nature. *E-flux* 65 (May-August), *pages 1-8*.

Murphy, M. 2017. Alterlife and Decolonial Chemical Relations. In Cultural Anthropology, Vol.32. No.4. pages 494-503.

March 17th-19th: Field Trip 2: Los Angeles/ The Museum of Jurassic Technology, Joshua Tree (Belle or Ryan Campground), and the LA river.

PART 3: SPECULATIVE ECOLOGIES: ALTER-TAXONOMIES FOR OTHER WORLDS.

March 30th Spring Break

Butler, O. 1993. The Parable of the Sower.

Le Guin, Ursula K. 1985. She Unnames Them. *The New Yorker*, January 21st, pages 1-3.

April 6th: Alterforms of scientific representation

Tsing, A. L. 2022. *Feral Atlas: The More Than Human* Anthropocene. Stanford University. & An interview with Anna L. Tsing.

Myers, N. 2020. How to Grow Liveable Worlds: Ten (not-so-easy) Steps for Life in the Planthroposcene.(https://www.abc.net.au/religion/natasha-myers-how-to-grow-liveable-worlds:-ten-not-so-easy-step/11906548)

Libirion, M. 2021. Pollution is Colonialism. Durham, Duke Univerity press.

April 13th: Writing Speculative Ecologies

Palmer, H. 2019. "Speculative Taxonomies." *Philosophy Today* 63, no. 4: 1111–23.

PART 4: PROJECT WORK

April 20th: Meeting with professors

April 27th: Presentations

April 14-16: Field Trip 3: Angel Island (Camp Reynolds & Point Blunt)