



## 2022 CER Lunchtime Lectures - Humboldt, Science, and The Geography of Nature

### Western Culture and the Study of Nature

January – Natural Philosophy and the Study of Nature

February – Natural History and the Taxonomy of Nature

March – Ecological Imperialism and the Geography of Nature

April – Physical Geography and the Science of Nature



### Humboldt and the Science of Nature

May – The Science of Nature: Humboldt and the Empirical Earth

June – The Romance of Nature: Science, Imagination, and the Poets of Nature

July – The Invention of Modern Nature: The Earth as a “Natural Whole”

August – The Evolution of Nature: Humboldt, Darwin, and Biogeography

September – The Economy of Nature: Ecology, Culture, and Cosmos

### Humboldt and the Geography of Nature

October – The Great Disruptors: Physical Geography as Modified by Human Action

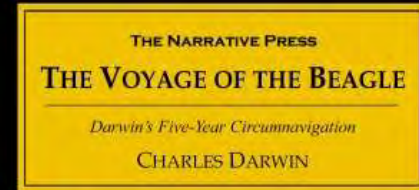
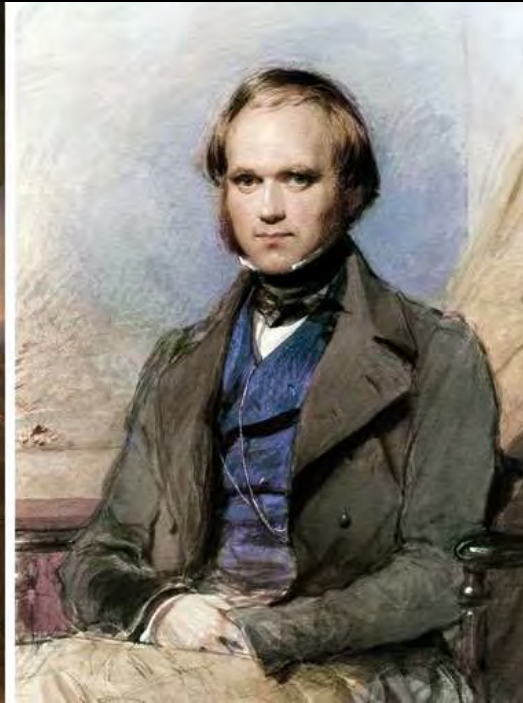
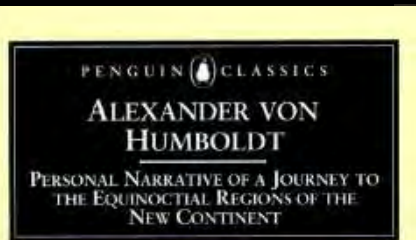
November – The Earth Managers: New Science and Environmental Change

December – The Anthropocene: Gaia and the Geography of Nature



# The Evolution of Nature: Humboldt, Darwin, and Biogeography (Humboldt's Progeny)

Kevin M. Anderson Ph.D.  
Austin Water Center for Environmental Research



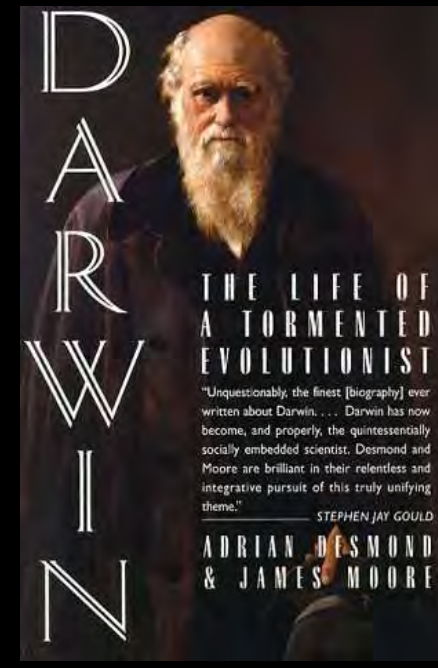
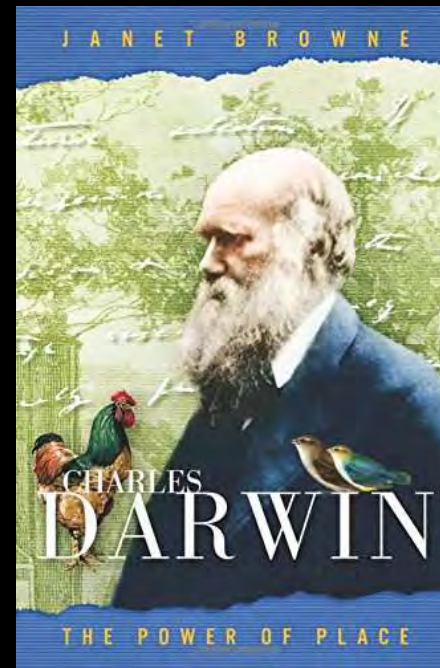
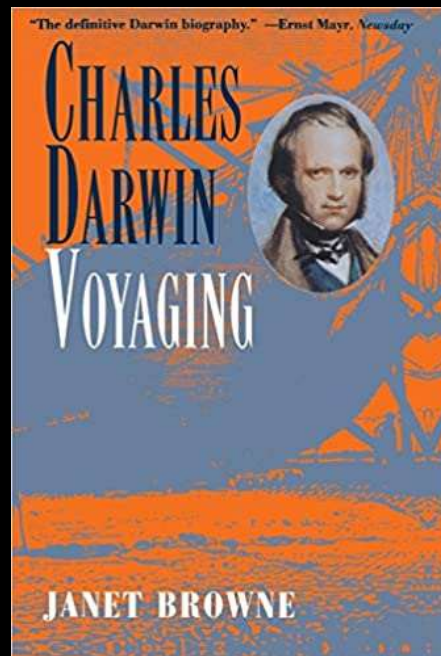
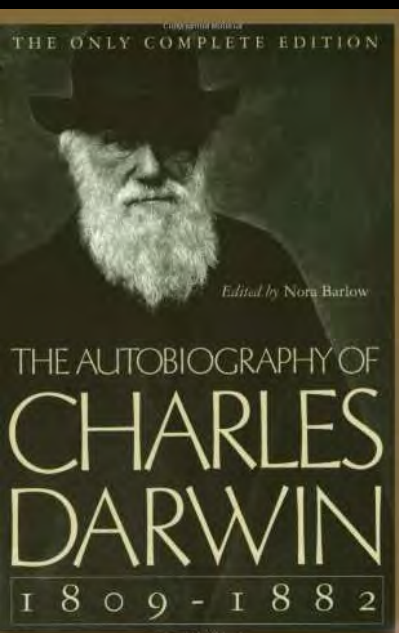
# Humboldt's Progeny - Charles Darwin 1809-1882

Darwin spent two years at Edinburgh University from 1825 to 1827, studying for a medical degree. Although the teenage Darwin showed some aptitude for doctoring, the lectures bored him and he could not stand witnessing operations.

He did not find it difficult to divert his attention from medicine to his real interest which, since childhood, was natural history.

Having abandoned medicine as a career in April 1827, the only other career his father could imagine for Charles was that of clergyman.

Darwin took the rest of the year off to revise his Greek ready to go to Christ's College, Cambridge. Darwin came up at the beginning of 1828 to obtain a BA.

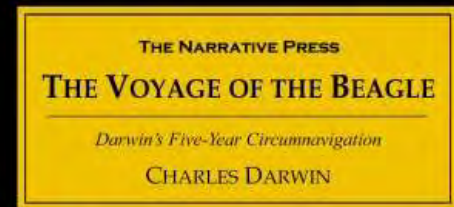


## Humboldt's Progeny - Charles Darwin 1809-1882

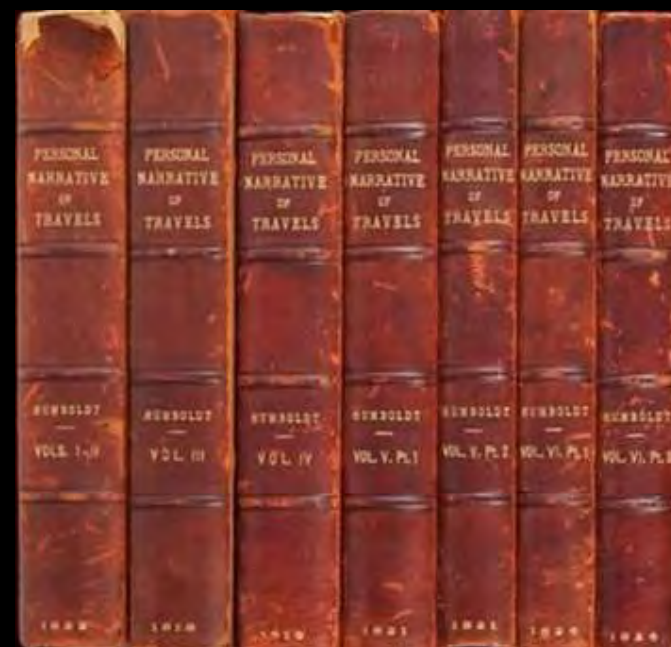
It was in Cambridge that Darwin met the man who fanned the flames of his scientific ambition. John Stevens Henslow (1796-1861), Professor of Botany, was perhaps the first man really to recognize Darwin's exceptional abilities.

It was Henslow who nurtured Darwin's passion for travel and natural history and inspired him to resume his study of geology. Henslow encouraged Darwin to read Alexander von Humboldt's account of his travels to the 'New World'

Henslow's parting gift to Darwin when he set sail on the Beagle was a set of the seven volumes of Helen Maria Williams's English translation of Humboldt's *Personal Narrative*.



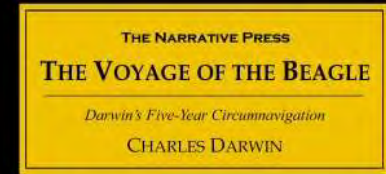
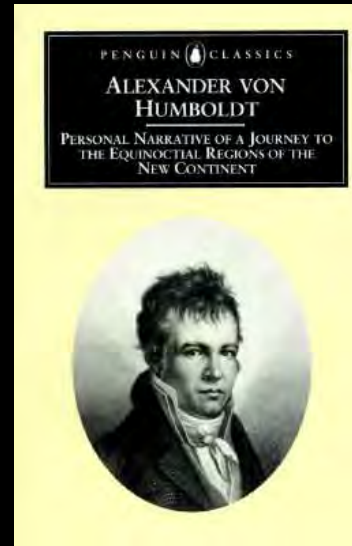
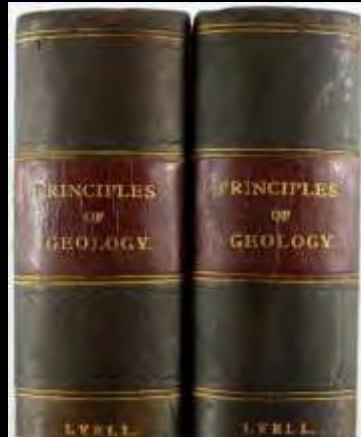
NUMBER 51 IN THE HISTORICAL ADVENTURE AND EXPLORATION SERIES



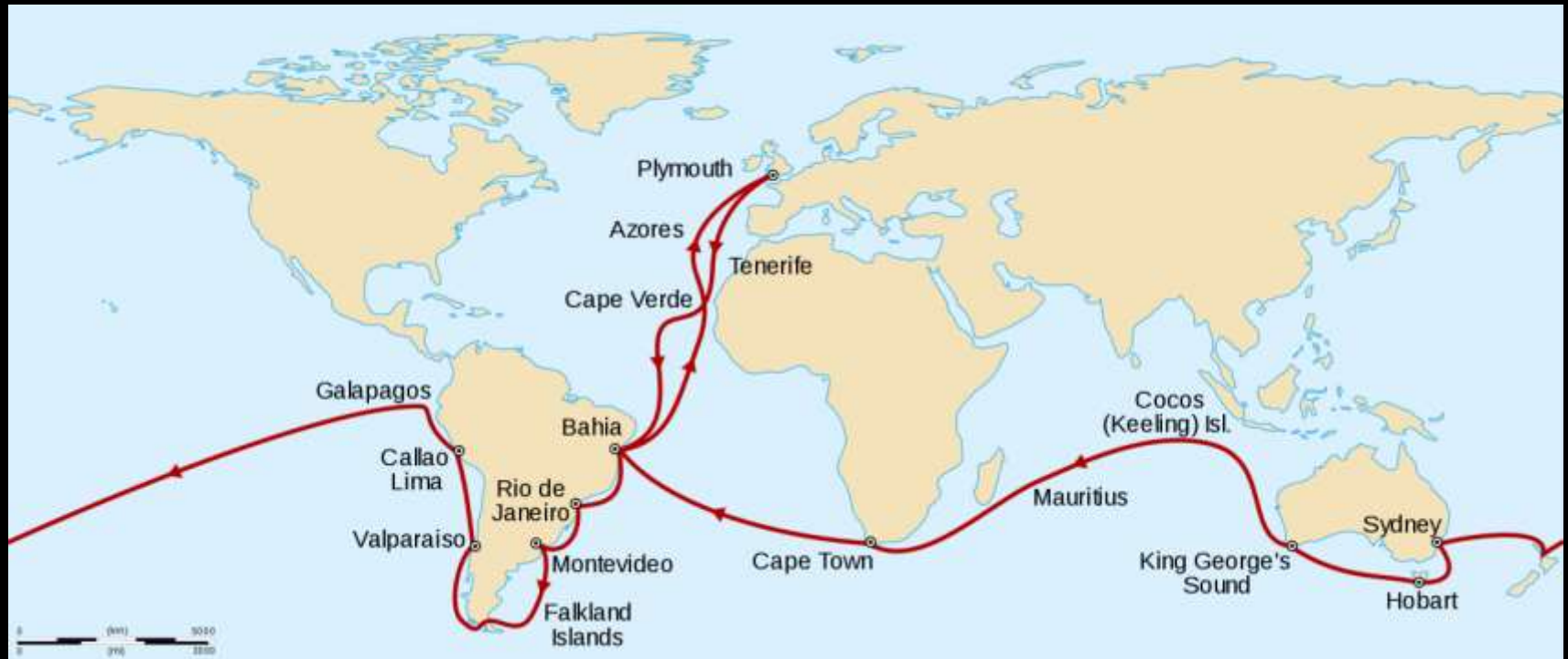
# Humboldt and Darwin

## The Voyage of the Beagle 1831-36

Published 1839



NUMBER 51 IN THE HISTORICAL ADVENTURE AND EXPLORATION SERIES





## Humboldt “the rare union of poetry with science”

“I spent a very pleasant afternoon lying on the sofa, either talking to the Captain or reading Humboldt’s glowing accounts of tropical scenery. — Nothing could be better adapted for cheering the heart of a sea-sick man.” (Dec 31, 1831)

In a later entry he describes Humboldt’s writing as “the rare union of poetry with science” and notes that “I am at present fit only to read Humboldt; he like another Sun illumines everything I behold.” (Feb 28, 1832).

## Humboldt and Darwin – 40 Year Age Difference

In 1839, Humboldt sent a letter that Darwin prized as much as any he ever received. Humboldt wrote,

“You told me that, when you were young, the manner in which I studied and depicted nature in the torrid zones contributed toward exciting in you the ardor and desire to travel in distant lands. Considering the importance of your work, Sir, this may be the greatest success that my humble work could bring. Works are of value only if they give rise to better ones.”

Darwin meets Humboldt 1842 – Darwin was 32, Humboldt 72





## Humboldt's Progeny - Charles Darwin

Darwin's epitaph for his hero, written in a letter to his friend Joseph Hooker the year before Darwin's own death.

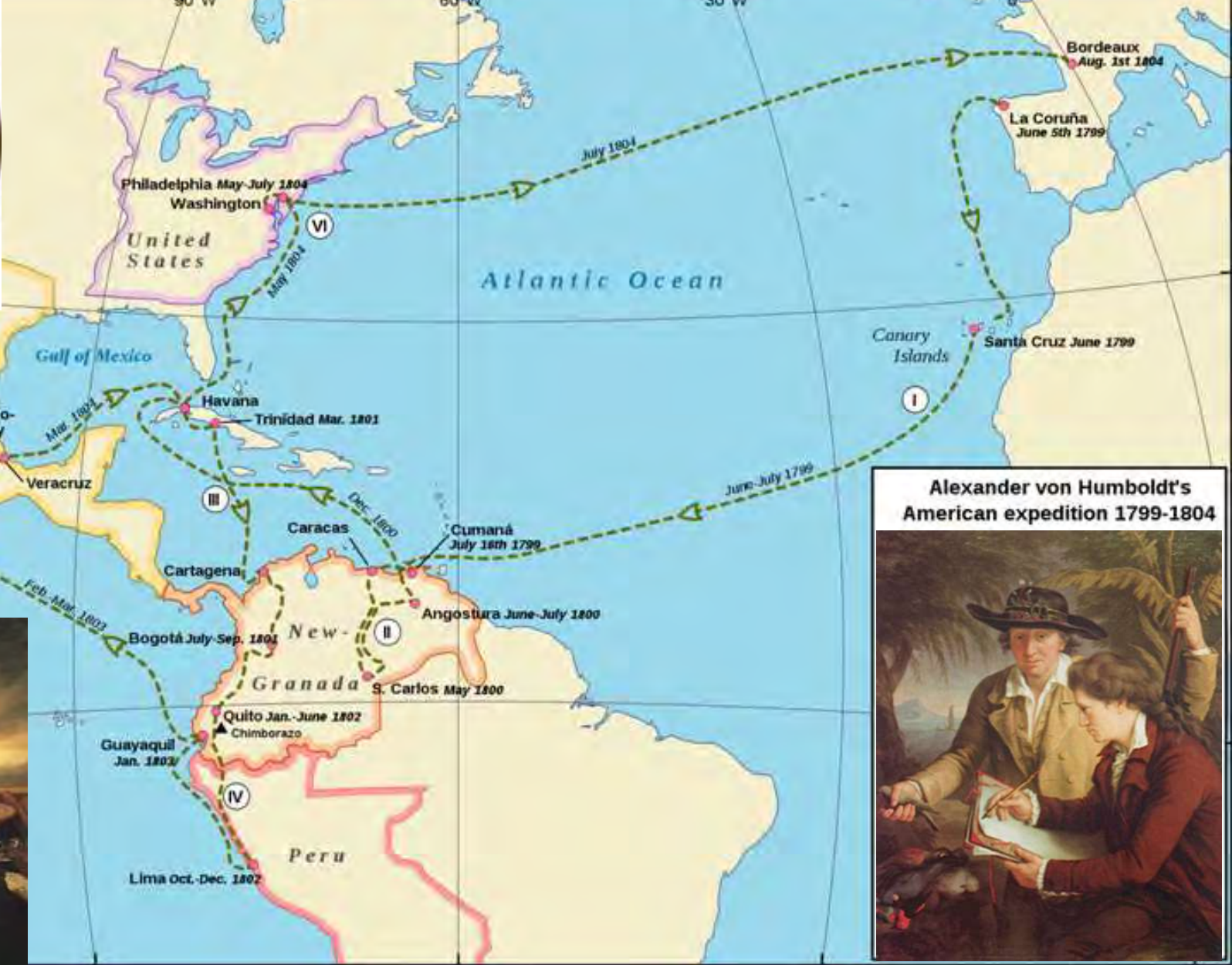
"I believe that you are fully right in calling Humboldt the greatest scientific traveler who ever lived. You might truly call him the parent of a grand progeny of scientific travelers, who taken together have done much for science.'



PENGUIN CLASSICS

ALEXANDER VON HUMBOLDT

*Personal Narrative of a Journey to the  
Equinoctial Regions of the New Continent*



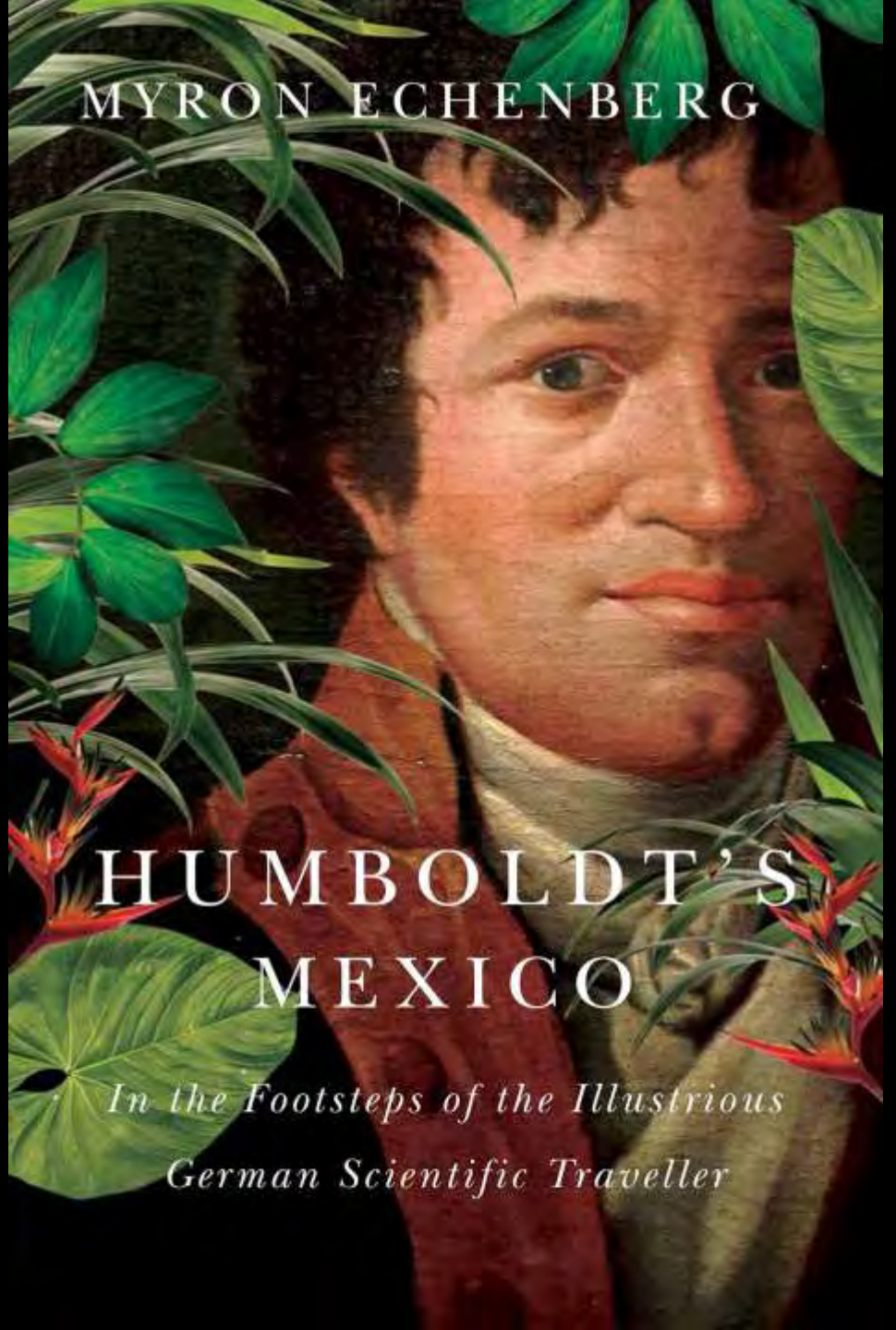
Humboldt's Scientific Travelers – Bougainville, Cook, Forsters



# Mexico 1803-4



MYRON ECHENBERG

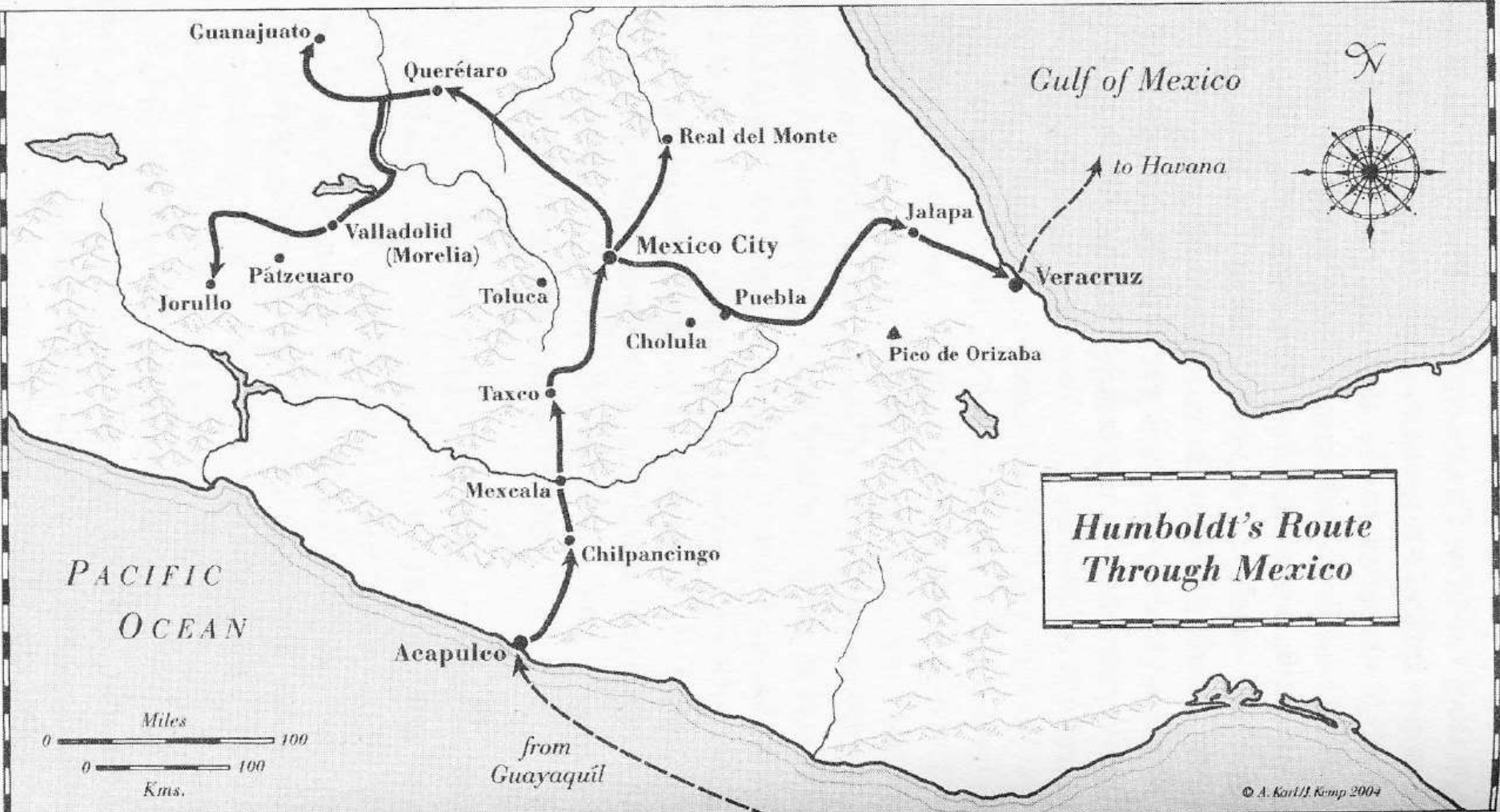


# HUMBOLDT'S MEXICO

*In the Footsteps of the Illustrious  
German Scientific Traveller*

# Mexico 1803-4

His visit to Mexico began in Acapulco on March 22, 1803, and lasted for almost a year. He left Mexico via Veracruz for Cuba on March 7, 1804.





Humboldt went to see Jorullo Volcano, since it was a rare example of a brand new volcano. Jorullo first erupted in September 1759 and activity continued until 1774.

## Volcanoes

Santa María Regla, in the state of Hidalgo, north of Mexico City, is the best known location in Mexico for basalt columns.

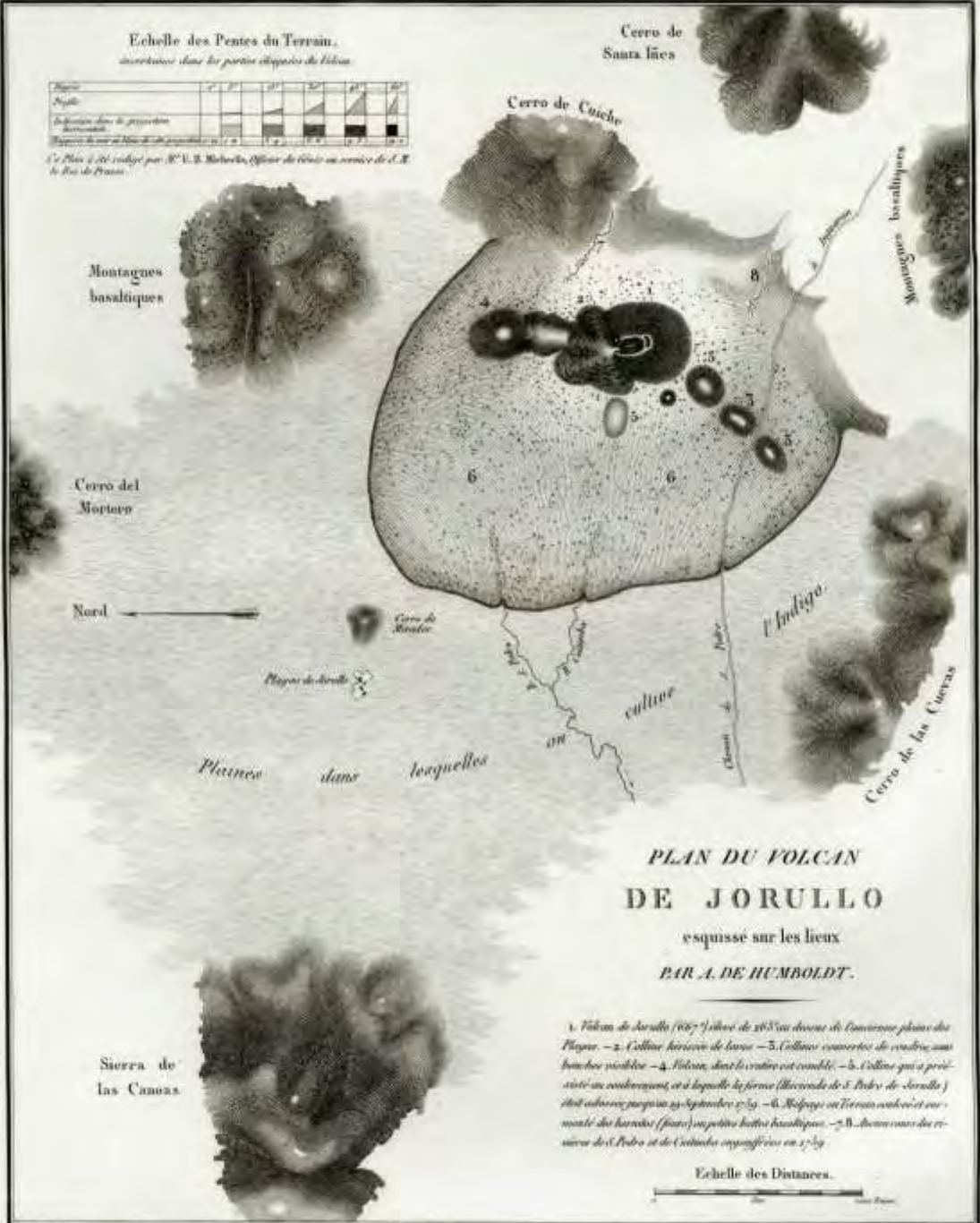


*Rochers basaltiques et Cascade de Regla.*

Echelle des Pentes du Terrain.  
*insérées dans les parties obliques de l'échelle*

Hauteur	0'	10'	20'	30'	40'	50'	60'	70'	80'	90'	100'
Profils											
de l'altitude dans la perspective											
de l'altitude dans la perspective											

Ce Plan a été corrigé par M. V. B. Michotte, Officier de Génie au service de S. M. le Roi de France.



**PLAN DU VOLCAN  
 DE JORULLO**  
 esquisse sur les lieux  
 PAR A. DE HUMBOLDT.

1. Volcan de Jorullo (607') élevé de 103' au dessus de l'ancienne plaine des  
 Plénes. — 2. Colline hérissée de laves. — 3. Colline couverte de cendres sans  
 branches visibles. — 4. Volcan dont le cratère est comble. — 5. Colline qui a pré-  
 senti un endormement, et à laquelle la ferme (Maison de S. Pedro de Jorullo)  
 fut rebâtie par suite de l'éruption de 1762. — 6. Volcan en Terrain aride et sur-  
 monté des bords (fleur) ou petites laves basaltiques. — 7. B. Ancien cratère de la  
 source de S. Pedro et de Cuatrecasas occupés en 1762.

Echelle des Distances.



Humboldt also spent his time looking into ancient ruins, indigenous culture, and 35 indigenous languages

*Views of the Cordilleras* published 1810

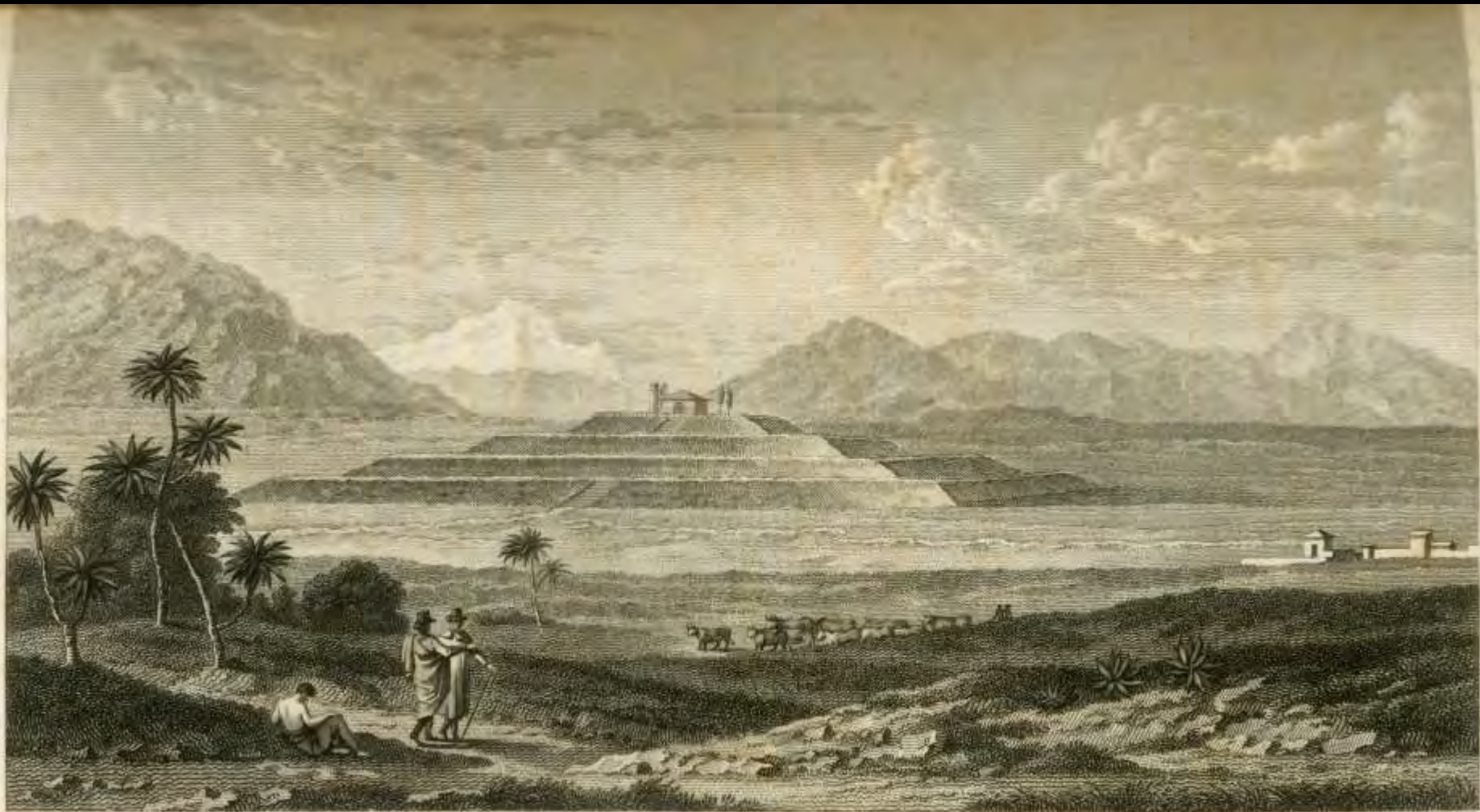
- First to analyze Aztec and Incan art
- Aztec calendar and language
- New World and Old World culture equal



*Views of the Cordilleras and Monuments of  
the Indigenous Peoples of the Americas*

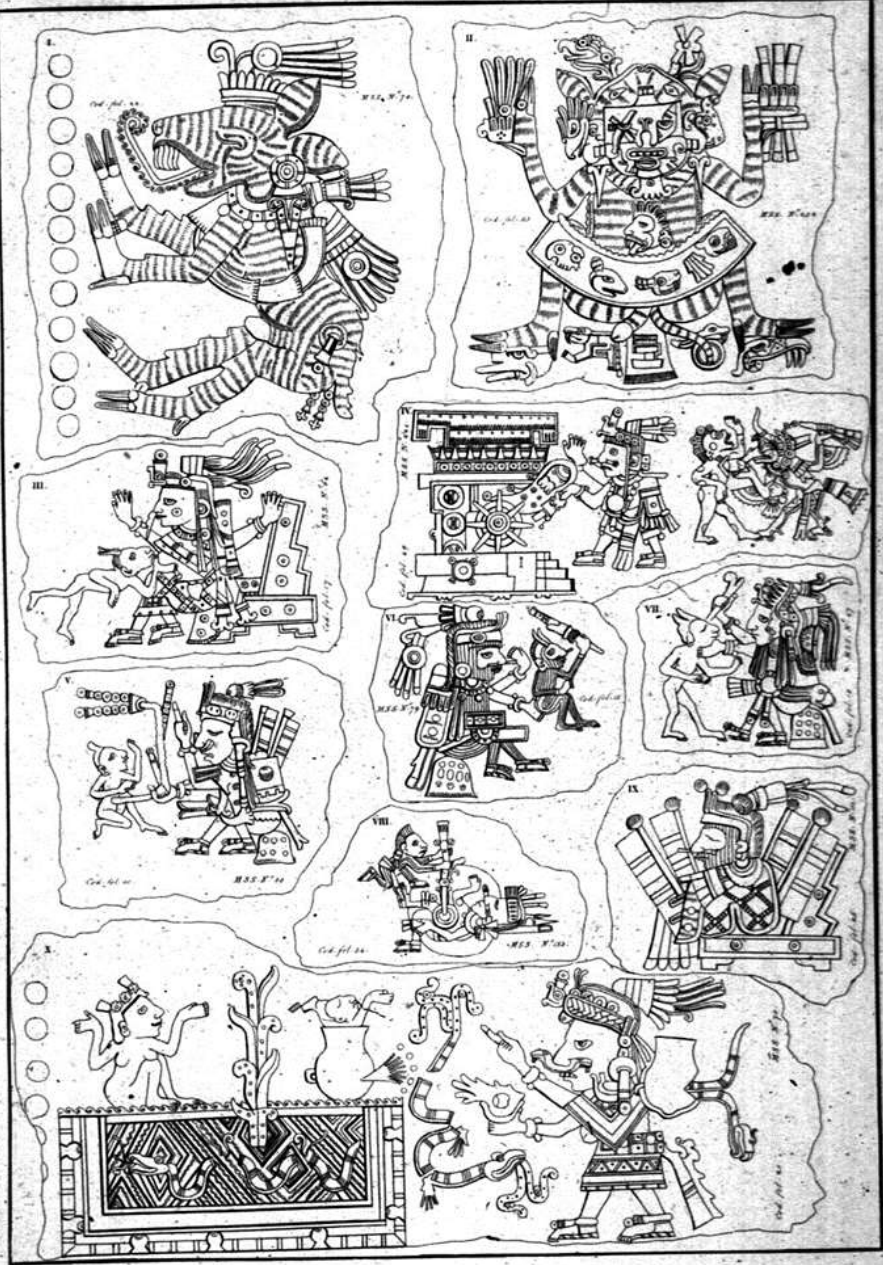
*A Critical Edition*





Bouquet sc.

Pyramide de Cholula.



*Hiéroglyphes Azteques  
du Monument de Teotihuacan*



*Relief en Basalte  
représentant le Calendrier Mexicain*

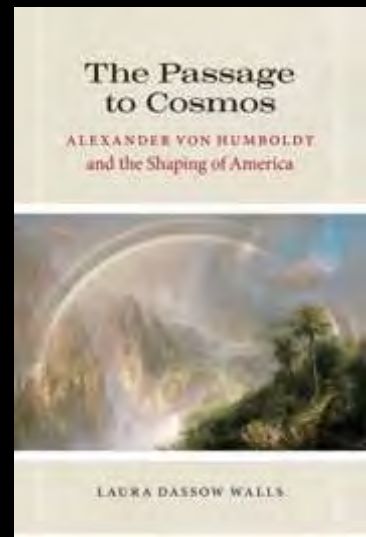


“Contemplating the statue leaves Humboldt with a congeries of questions: Why has she feet but no hands? Is she truly a priestess? A deity? Or simply an Aztec woman? Where did such imagery originate? Perhaps here is a reflection of the light from Asia that led to “the commencement of American civilization.”

But these questions cannot be answered. In the vacuum left by the wholesale Spanish destruction of her civilization, the words she speaks cannot be heard.”

Laura Dassow Walls *Passage to Cosmos*

This figure, now a major work in the canon of Aztec art, identified as “the goddess of groundwater.”

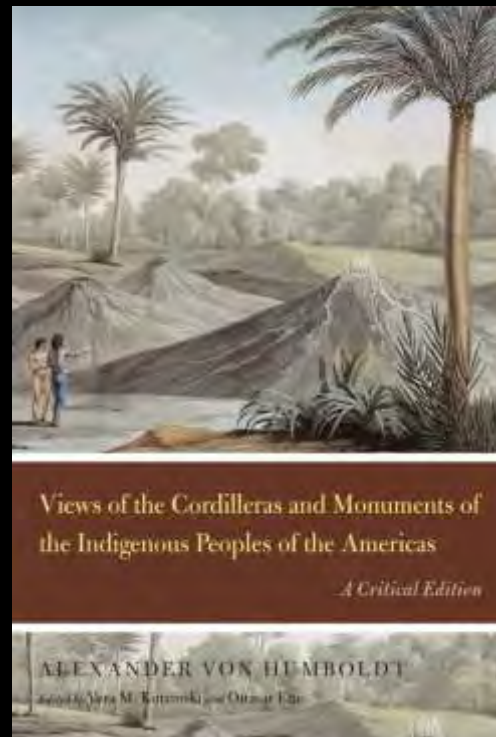
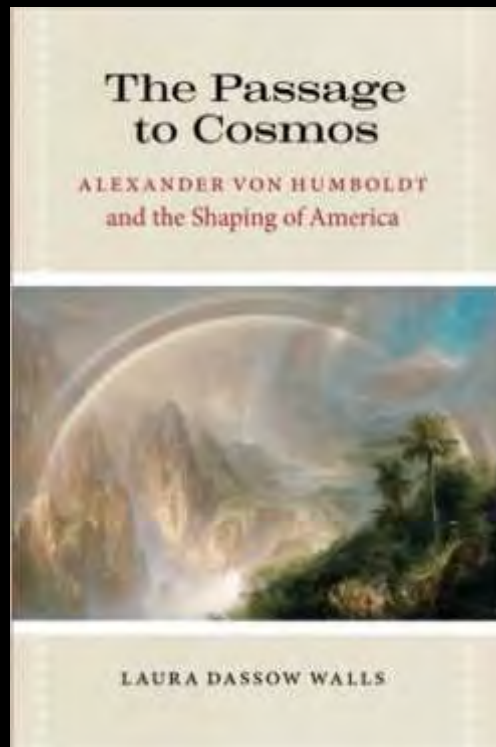




“Humboldt attempted, in short, to create a counternarrative to the drumbeat of imperial progress, and in this attempt he effectively created what we would now call an environmental discourse.

His foundational assumption was that neither humans nor nature can be understood in isolation. In his social writings, nature was never merely background but played an essential role in the development of human societies; in his natural writings, the ways various societies construct their views of nature were crucial to understanding their physical environment.”

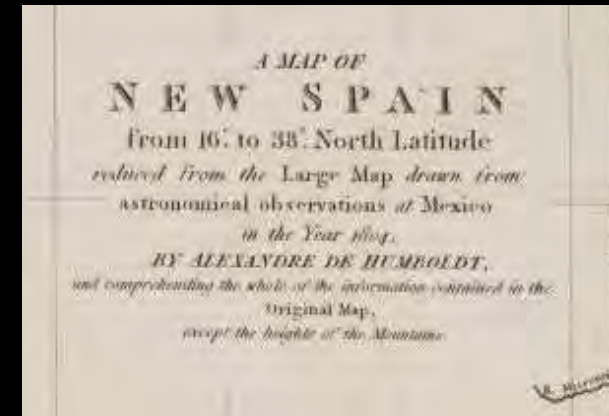
Laura Dassow Walls, *Passage to Cosmos*



# New World Politics – Cultural/Human Geography

## *Political Essay on the Kingdom of New Spain 1811*

- Statistical analysis of Mexico
- Criticism of Spanish treatment of indigenous population
- The most detailed, accurate map of the West



### Political Essay on the Kingdom of New Spain

VOLUME 1 *A Critical Edition*

ALEXANDER VON HUMBOLDT

*Edited with an Introduction by Peter H. Rasmussen, and Thomas J. Barrow*



### Political Essay on the Kingdom of New Spain

VOLUME 2 *A Critical Edition*

ALEXANDER VON HUMBOLDT

*Edited and with an Introduction by Peter H. Rasmussen and Thomas J. Barrow*

*A MAP OF*  
**NEW SPAIN**

from 16° to 33° North Latitude  
*reduced from the Large Map drawn from  
astronomical observations at Mexico  
in the Year 1804.*

*BY ALEXANDRE DE HUMBOLDT,*  
*and comprehending the whole of the information contained in the  
Original Map,  
except the heights of the Mountains.*

*A. Mission*



A MAP OF  
**NEW SPAIN**

from 16° to 38° North Latitude

reduced from the Large Map drawn from  
astronomical observations at Mexico  
in the Year 1804.

BY ALEXANDRE DE HUMBOLDT,

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Original Map,  
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Texas 1800



# To Cuba and the United States 1804

In March 1804 they sail to Cuba planning to go directly to France, but American consul to Cuba, Vincent Gray, convinces Humboldt to visit Washington to meet President Jefferson.

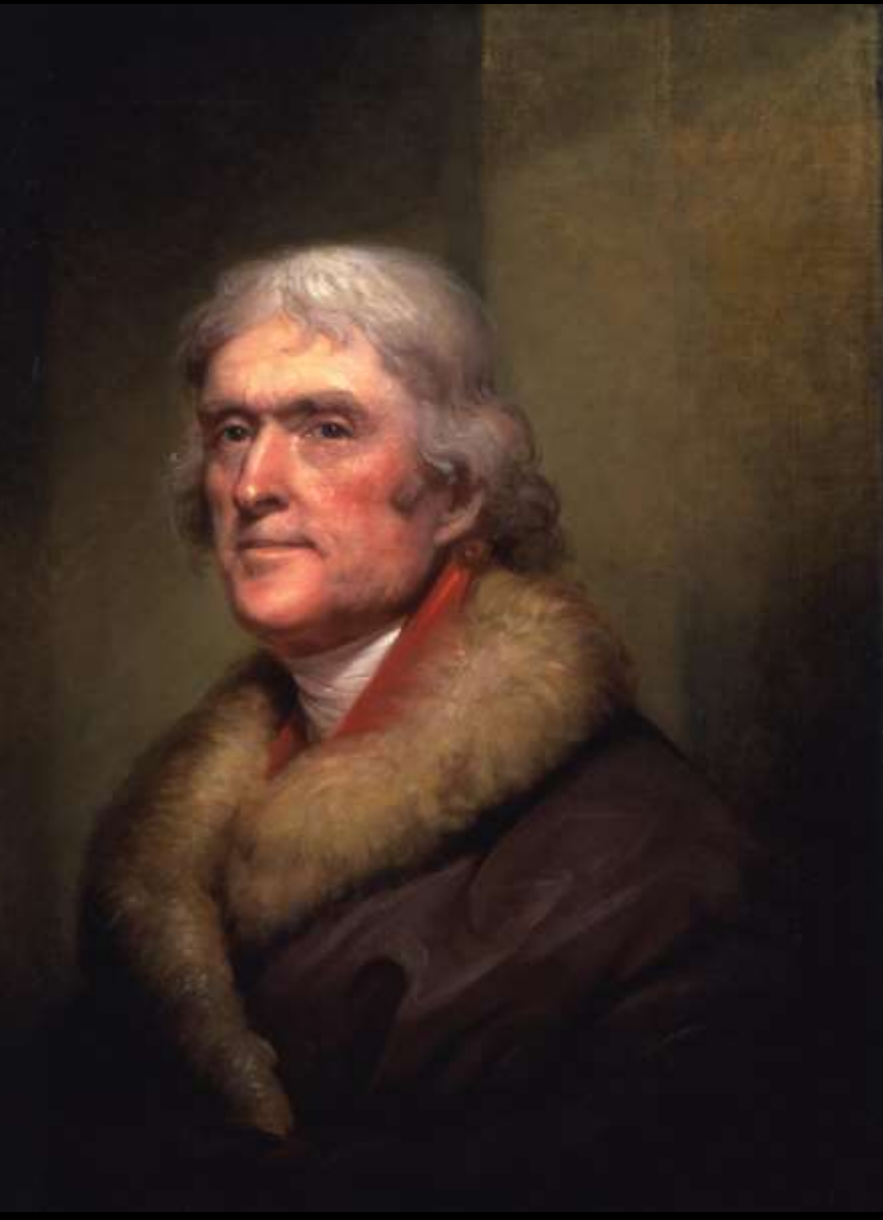
Arrive in Philadelphia and spends six weeks meeting and befriending political, cultural, and scientific leaders of the United States.



Thomas Jefferson

(1743 – 1826)

Rembrandt Peale 1805



Humboldt

(1769 – 1859)

Charles Peale 1804



# The Meeting

“I consider him – Humboldt – the most important scientist whom I have met.”

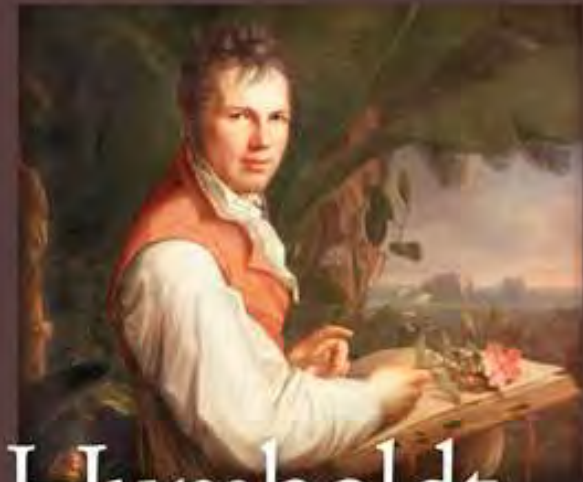
— Thomas Jefferson

On May 19, 1804, the 34 year old Alexander von Humboldt arrived in the United States...Thomas Jefferson had just turned 61.

“Mr. President, Arrived from Mexico on the blessed ground of the republic, whose executive powers were placed in your hands, I feel it my pleasant duty to present my respects and express my high admiration for your writings, your actions, and the liberalism of your ideas, which have inspired me from my earliest youth. I could not resist the moral obligation to see the United States and enjoy the consoling aspects of a people who understand the precious gift of Liberty.”

1<sup>st</sup> letter from Humboldt to Jefferson 1804

SANDRA REBOK



## Humboldt and Jefferson



A Transatlantic Friendship  
*of the Enlightenment*

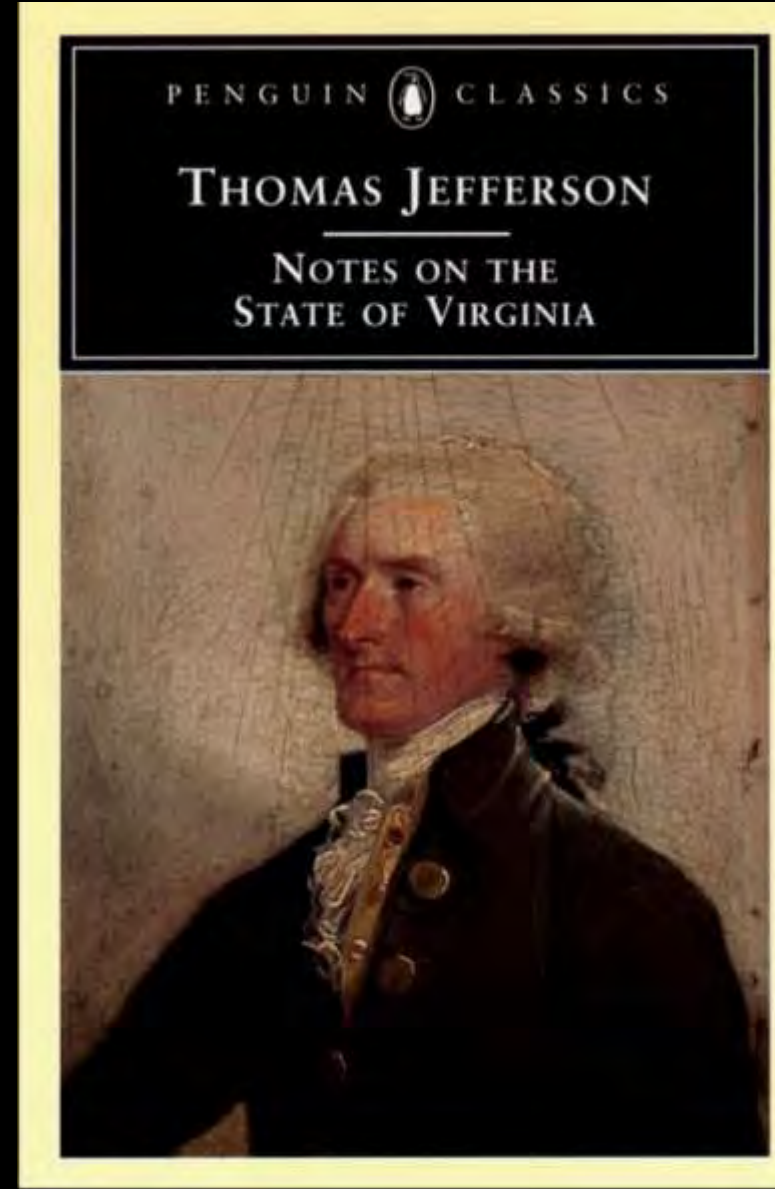




# Notes on the State of Virginia (1785)

## Jefferson, Natural History, and the Defense of American Nature

- Old World vs New World
- Natural Wonders vs. Human Wonders



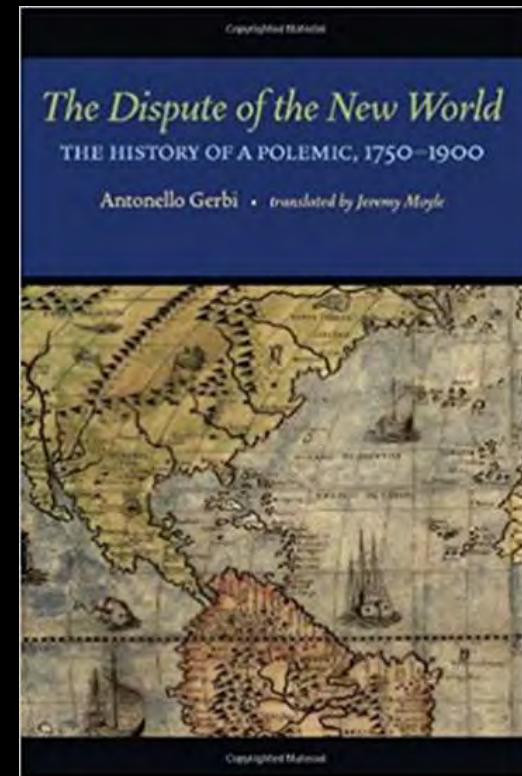
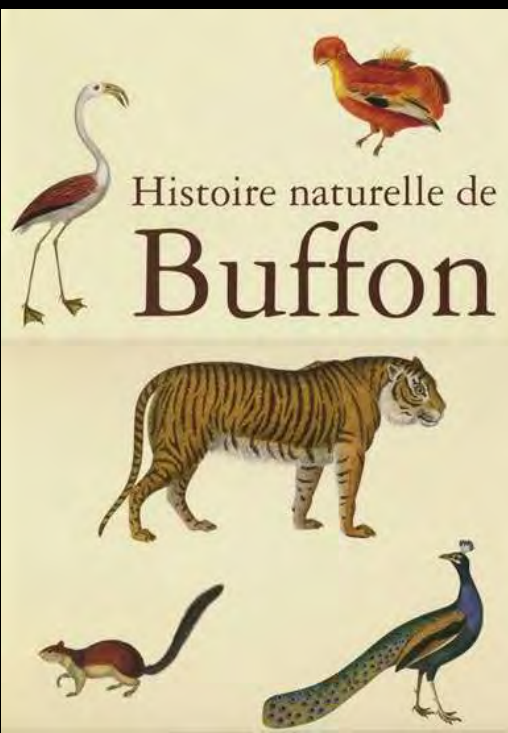
# Theory of Degeneracy of American Nature - Comte de Buffon 1707–1788

In his *Histoire Naturelle*, published in 1761, Buffon argued for the theory of degeneracy of American Nature.

“Elephants belong to the Old Continent and are not found in the New...one cannot find there any animal that can be compared to the elephant for size and shape...

Living nature is thus much less active there, much less varied, and we may even say, less strong.”

He argues that, as a result of living in a cold and wet climate, all species found in America were weak and feeble.



# Theory of Degeneracy of American Nature – The American Swamp

“...the crude state in which nature is found...in this state of abandon, everything languishes, decays, stifles. The air and the earth, weighed down by the moist and poisonous vapors, cannot purify themselves nor profit from the influence of the star of life.

The sun vainly pours down its liveliest rays on this cold mass ... it will never produce anything but humid creatures, plants, reptiles, and insects, and cold men and feeble animals are all that it will ever nurture.” (1761)

America is a land of swamps, where life putrefies and rots.

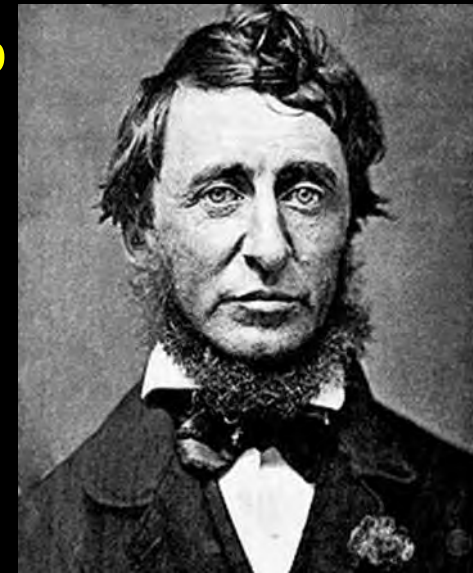


## Wildness is the preservation of the world – The Swamp

Henry David Thoreau, *Walking* (1862)

“This statement will do at least to set against Buffon’s account of this part of the world and its productions...

When I would recreate myself, I seek the darkest wood, the thickest and most interminable, and, to the citizen, most dismal swamp. I enter a swamp as a sacred place — a sanctum sanctorum. There is the strength — the marrow of Nature.

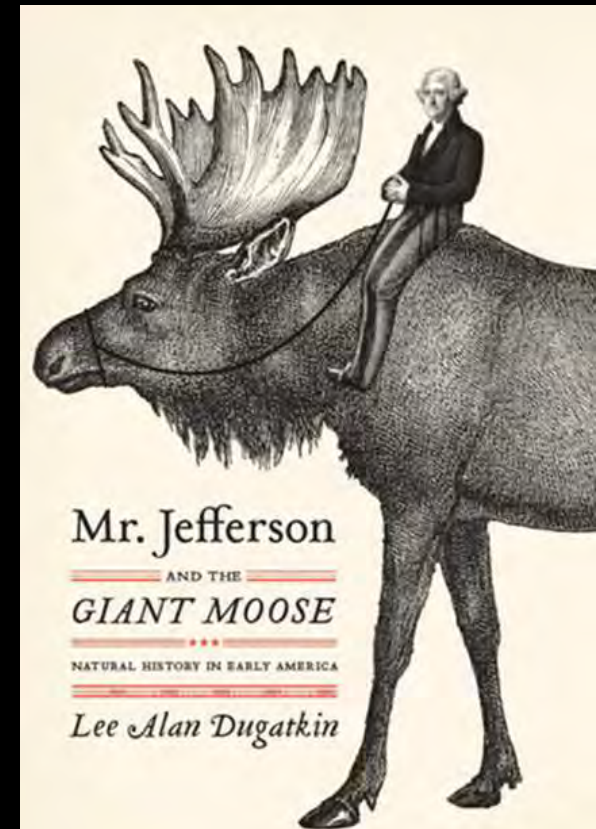


# Theory of Degeneracy of American Nature and Thomas Jefferson

U.S. Minister to France 1784-89

## The Giant Moose

Engaged in scientific debate with the Comte de Buffon about the theory that North American climate caused degeneration of humans and wildlife by importing examples of American wildlife larger than their European counterparts.



# Jefferson – American Natural Wonders

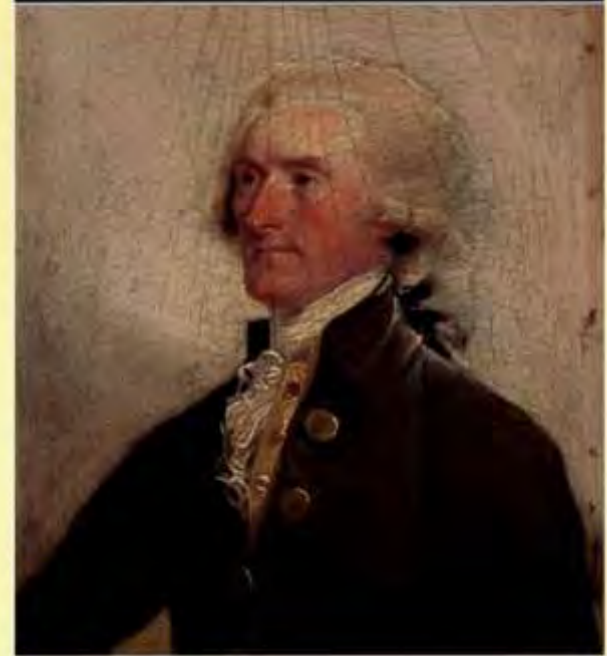
## The Mammoth

### A comparative View of the Quadrupeds of Europe and of America.

#### I. *Aboriginals of both.*

	Europe.	America.
	lb.	lb.
Mammoth		
Buffalo. Bifon		*1800
White bear. Ours blanc.		
Carribou. Renne.		
Bear. Ours.	153.7	*410
Elk. Elan. Original palmated		
Red deer. Cerf.	288.8	*273

PENGUIN CLASSICS  
 THOMAS JEFFERSON  
 NOTES ON THE STATE OF VIRGINIA

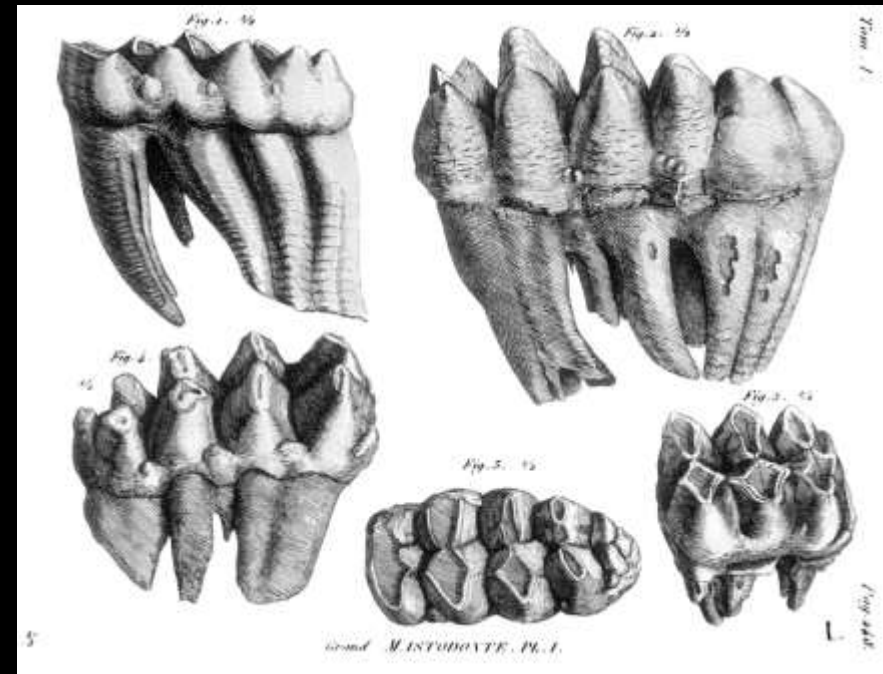


“As a friend of science, you will excuse the indulgence of my admiration. I would love to talk to you about a subject that you have treated so ingeniously in your work on Virginia, the teeth of mammoth which we discovered in the Andes...My friend Citoyen Cuvier may be expect to furnish me with an anatomical description.”  
 - Humboldt’s first letter to Jefferson 1804



# Georges Cuvier (1769-1832)

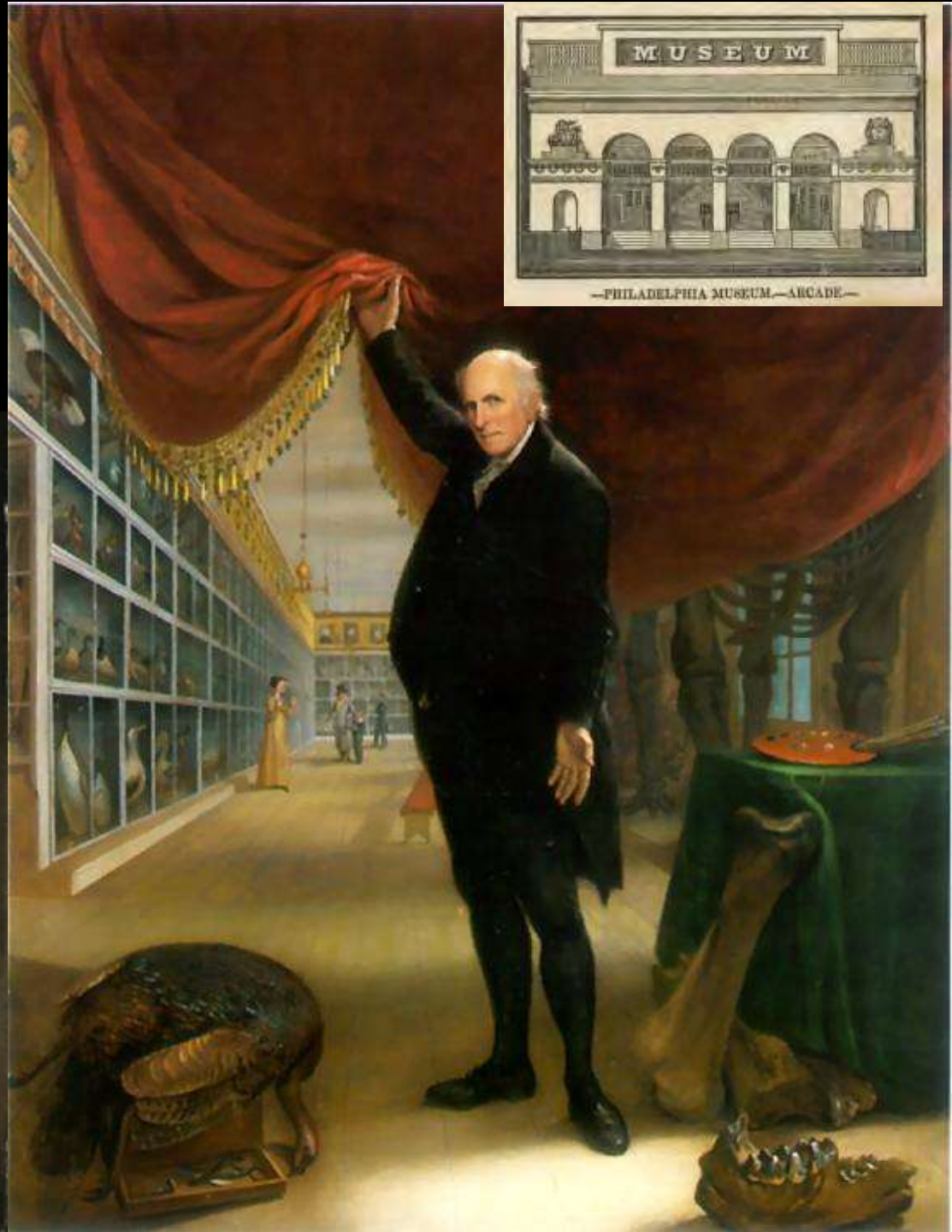
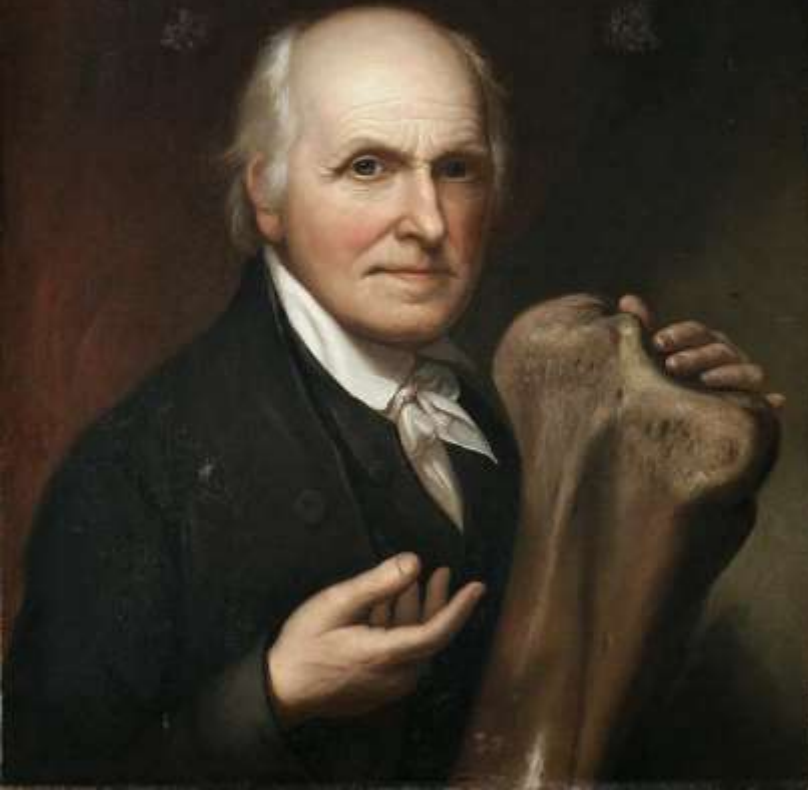
- The "founding father of paleontology"
- Cuvier established that elephant-like bones found in North America belonged to an extinct animal he later would name "mastodon" proof of extinction
- Anti-Evolution - Believed there was no evidence for evolution, but rather evidence for cyclical creations and destructions of life forms by global extinction events such as deluges.
- Pro-Ancient Earth - "All of these facts, consistent among themselves, and not opposed by any report, seem to me to prove the existence of a world previous to ours, destroyed by some kind of catastrophe."
- Racist - Conducted racial studies which provided part of the foundation for scientific racism, and published work on the supposed differences between racial groups' physical properties and mental abilities.



# Charles Willson Peale (1741 – 1827)

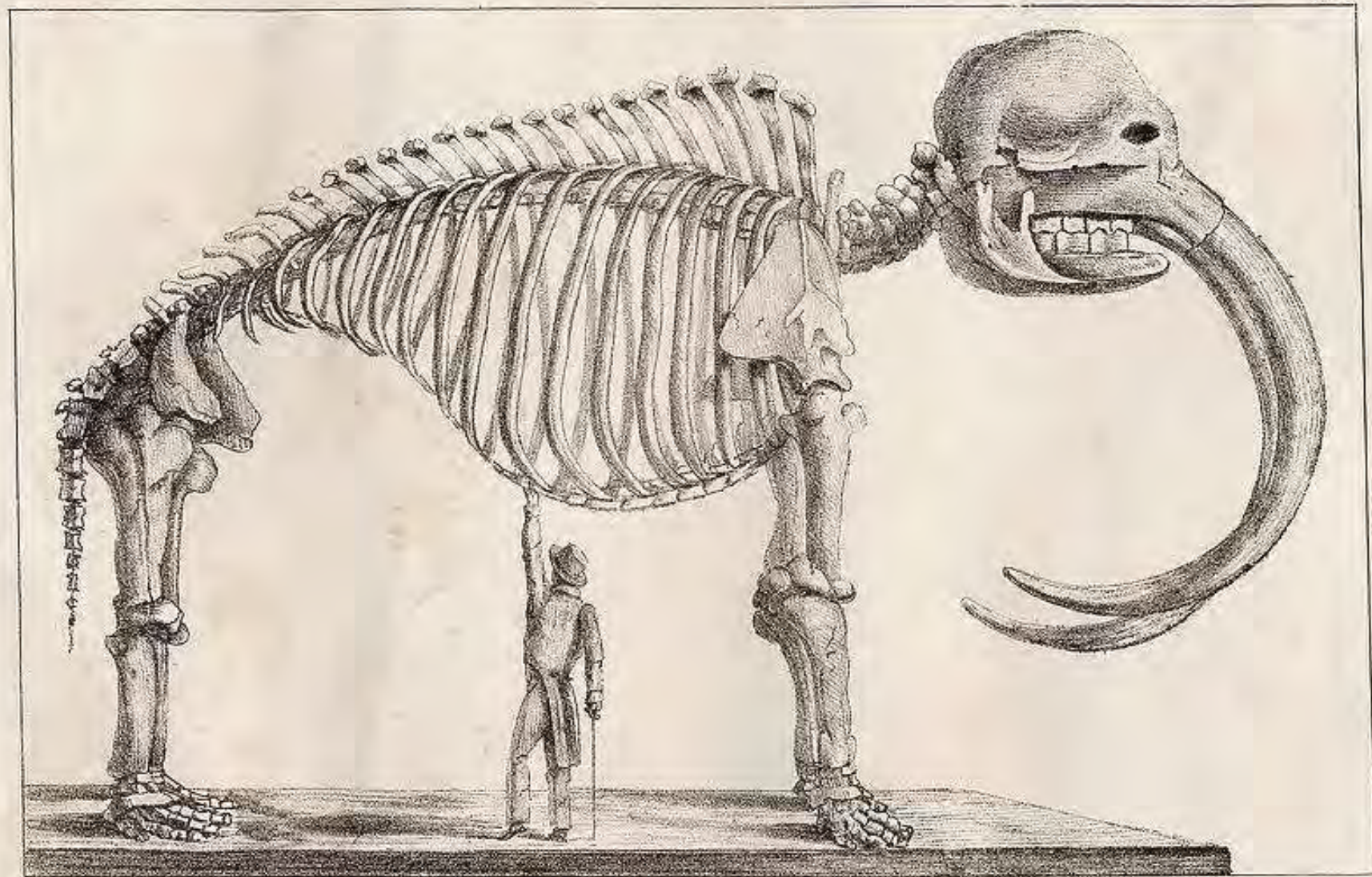


# Self-Portrait with Mastodon Bone, 1824



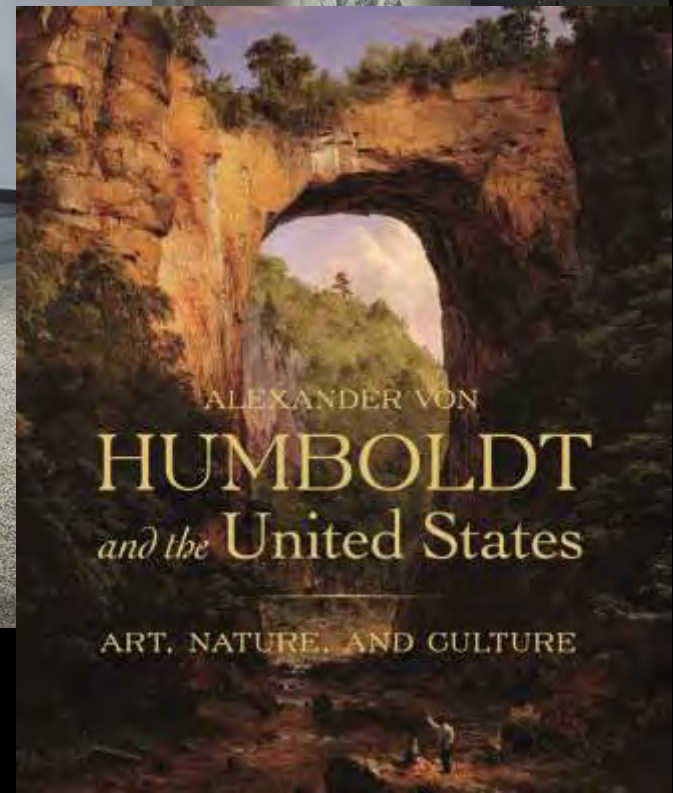






des. et lith. par Ed. de Montolin.

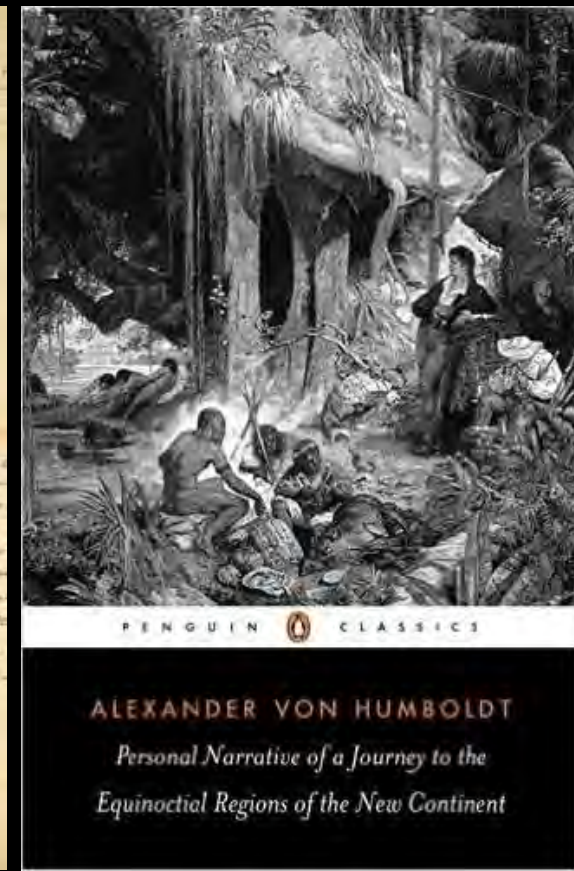
*Squelette d'un jeune Mammouth.  
Dessiné au musée de Philadelphie.*



# Humboldt, Buffon, and New World Nature

“Certain celebrated writers, more struck by the contrasts than the harmonies in nature have been pleased to depict all America as a land of swamps...it would be superfluous for me to refute here M. de Buffon’s hazardous assertions on the alleged degeneration...

These ideas were easily propagated, because they flattered the vanity of Europeans...When the facts are carefully examined, naturalists perceive nothing but harmony where this eloquent writer announced discordancy.” (1811)



# Cultural and Political Impacts Humboldt in the US

Charles Willson Peale  
1804 silhouette of Humboldt



Charles Willson Peale  
Humboldt, 1804

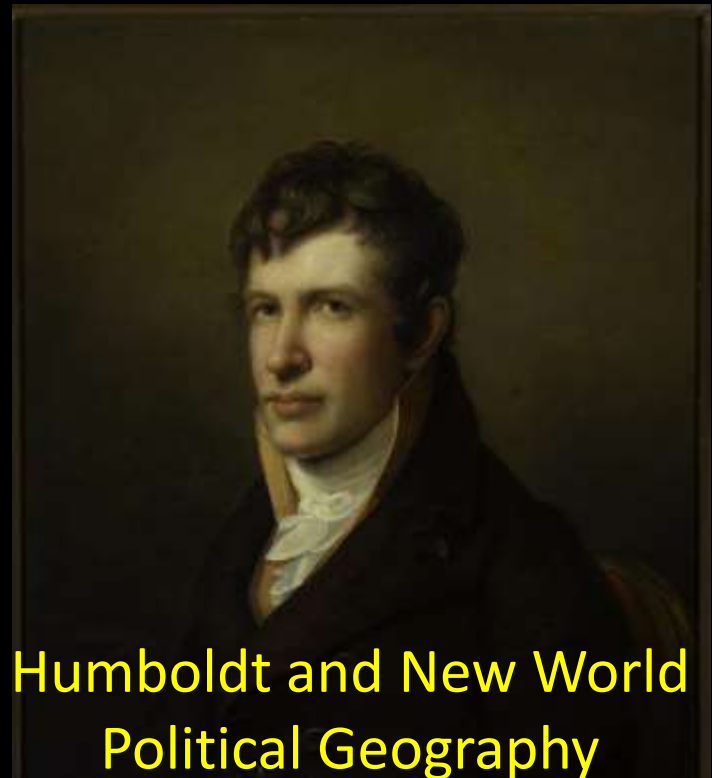


Rembrandt Peale  
Humboldt 1809





*A MAP OF*  
**NEW SPAIN**  
*from 16° to 38° North Latitude*  
*reduced from the Large Map drawn from*  
*astronomical observations at Mexico*  
*in the Year 1804,*  
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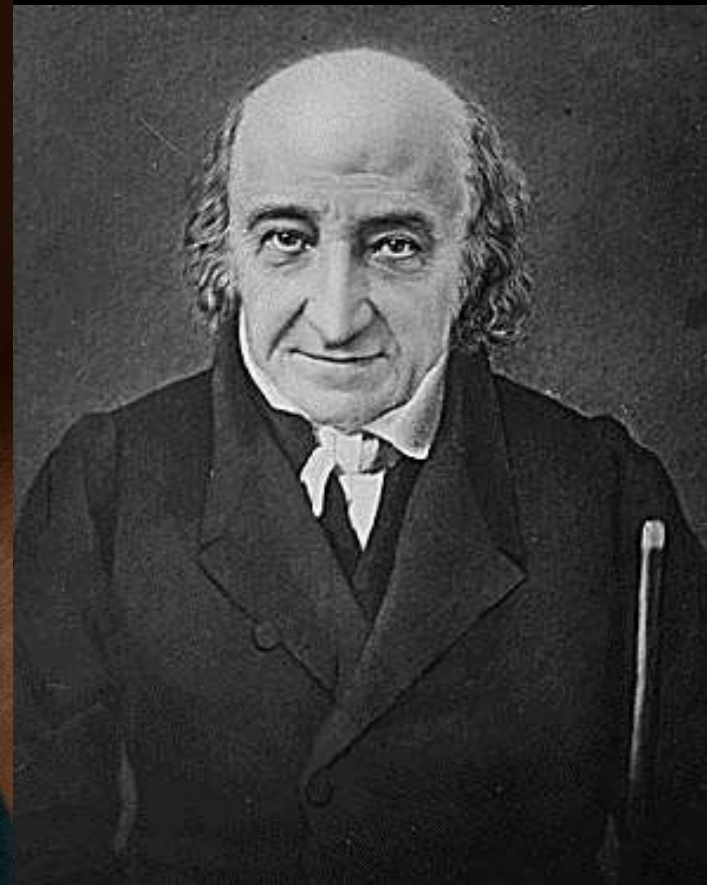
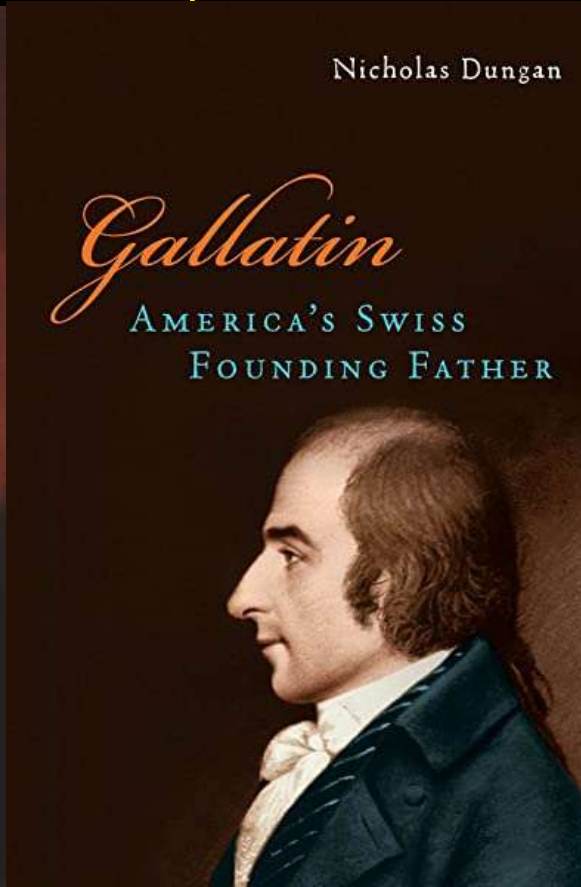


Humboldt and New World  
Political Geography

# Political and Cultural Geography

## Albert Gallatin 1761-1849

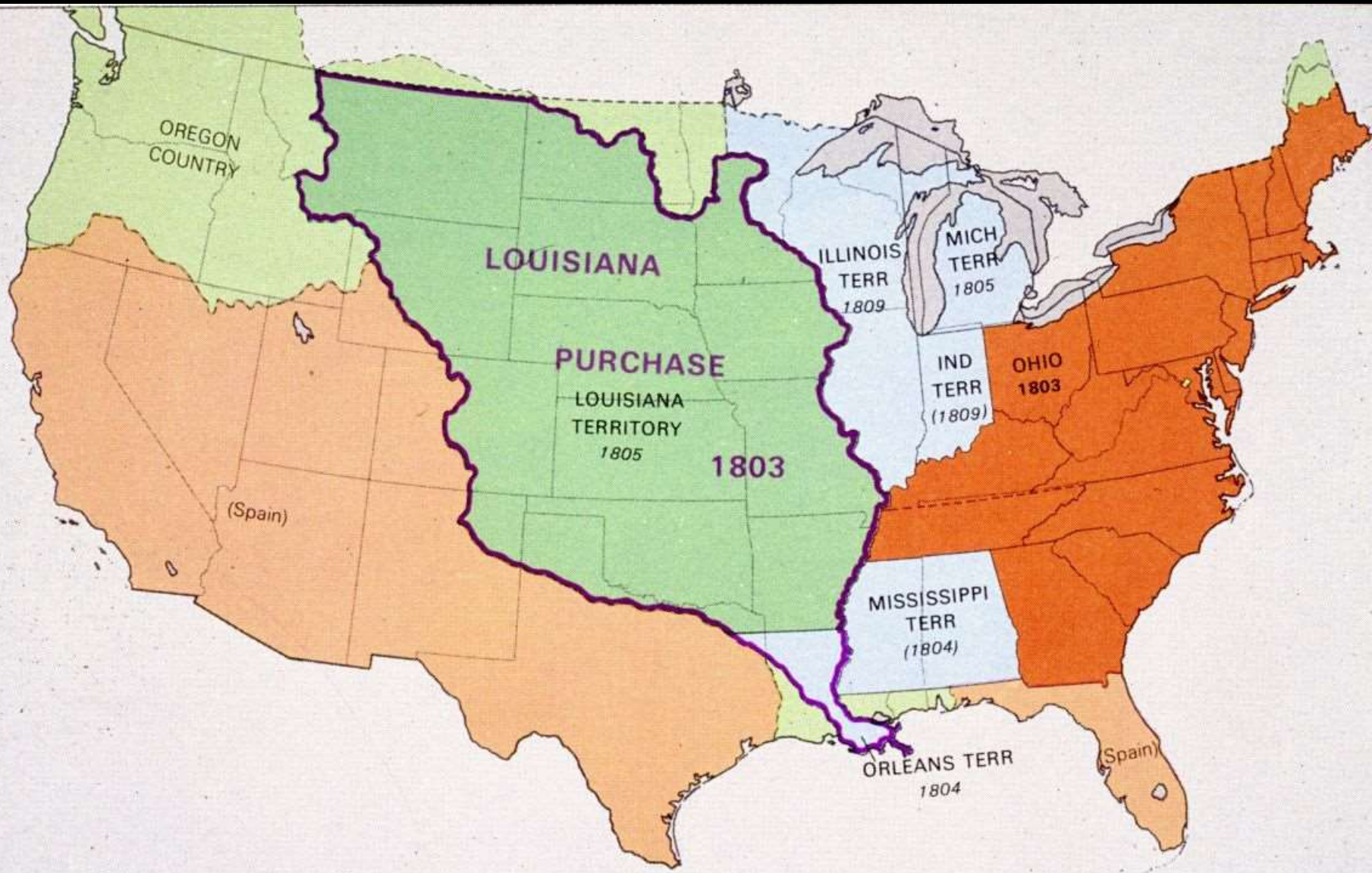
- He served as a Congressman, Senator, the longest-serving Secretary of the Treasury.
- Ambassador to France 1816-1823
- *A Table of Indian Languages of the United States* (1826)
- *Synopsis of the Indian Tribes of North America* (1836)
- The American Ethnological Society 1842



# Gallatin Copy of Humboldt's New Spain Map









**LEWIS & CLARK** Contents

cpb

GM General Motors

The Journey of the Corps of Discovery  
A Film by Ken Burns  
A GENERAL MOTORS  
MARK OF EXCELLENCE PRESENTATION



# WILLIAM H. GOETZMANN

*AUTHOR OF THE PULITZER PRIZE-WINNING  
EXPLORATION AND EMPIRE*

## NEW LANDS, NEW MEN

*AMERICA AND THE SECOND  
GREAT AGE OF DISCOVERY*



### “Humboldt’s Children”

Humboldt the Scientific Model “came to stand like a colossus over the scientific exploration and study of the continents”

"provided a model and a method for organizing all the data that poured into Europe from the ever-increasing number of expeditions to all parts of the globe."



# Home to Europe 1804

Departs the US at the end of June and arrives back in France 1 August 1804.

Travels to Rome, Berlin, and settles in Napoleon's Paris in 1808 where he remains writing his books until 1826.





PENGUIN CLASSICS

ALEXANDER VON HUMBOLDT

*Personal Narrative of a Journey to the  
Equinoctial Regions of the New Continent*



*Views of the Cordilleras and Monuments of  
the Indigenous Peoples of the Americas*

*A Critical Edition*

ALEXANDER VON HUMBOLDT

*Edited by Vera M. Kutzowski and Ottavio Lotti*



*Political Essay on the  
Kingdom of New Spain*

VOLUME I *A Critical Edition*

ALEXANDER VON HUMBOLDT



*POLITICAL ESSAY  
ON THE ISLAND OF CUBA*

*A Critical Edition*

ALEXANDER VON HUMBOLDT

*Edited by Vera M. Kutzowski and Ottavio Lotti*



*Views of Nature*

ALEXANDER VON HUMBOLDT

*Edited by Stephen T. Jackson and Laura Garbin-Walt  
Introduction by Mark W. Peterson*

*Alexander von Humboldt*  
**COSMOS**  
A SKETCH OF THE  
PHYSICAL DESCRIPTION  
OF THE UNIVERSE  
*Volume I*

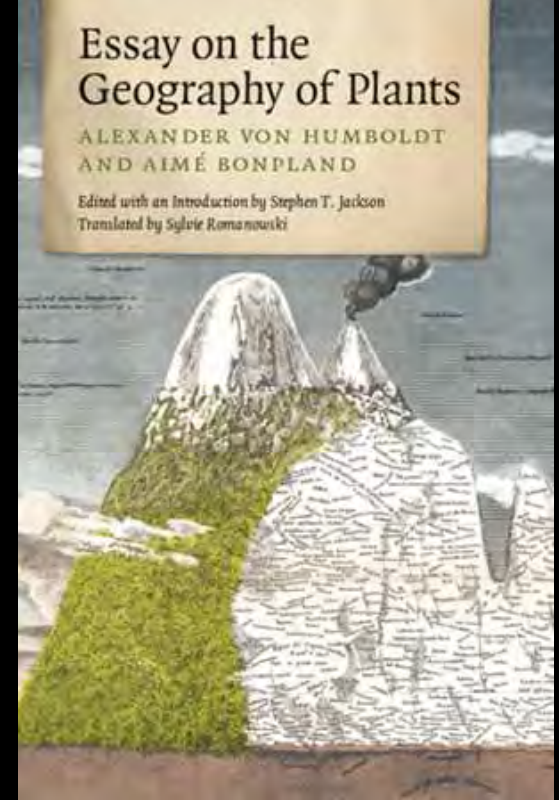


*Translated by E. C. Otté  
Introduction by Nicolaas A. Rupke*

# Humboldtian Science - Biogeography

## *Essay on the Geography of Plants* 1807

- An ecological vision - Instead of placing plants in their taxonomic categories, he saw vegetation through the lens of climate and location: a radically new idea that still shapes our understanding of ecosystems today.
- The similarity between coastal plants shows an ancient connection between Africa and South America and suggests continents geologically shift [plate tectonics]
- First to document New World domesticated plants – corn, yucca, potato, tomato, pepper, vanilla, cocoa, etc.



# Naturgemälde - Infographic



*Geographie der Pflanzen in den Tropen-Ländern;  
ein Naturgemälde der Anden,*

*gegründet auf Beobachtungen und Messungen, welche vom 10<sup>ten</sup> Grade nördlicher bis zum 10<sup>ten</sup> Grade südlicher Breite angestellt worden sind, in den Jahren 1799 bis 1805.*

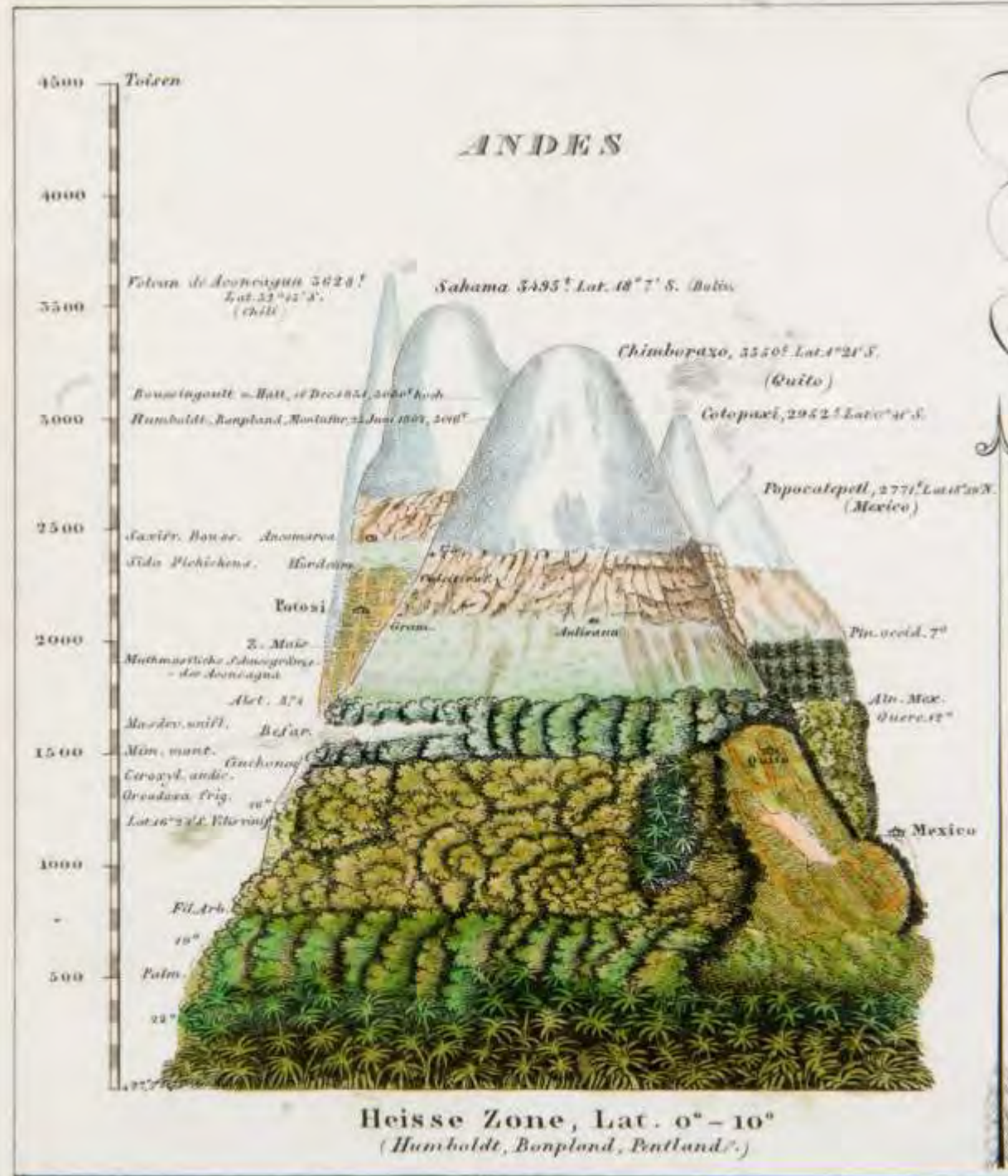
*von ALEXANDER VON HUMBOLDT mit A. G. BONPLAND.*

# Naturgemälde

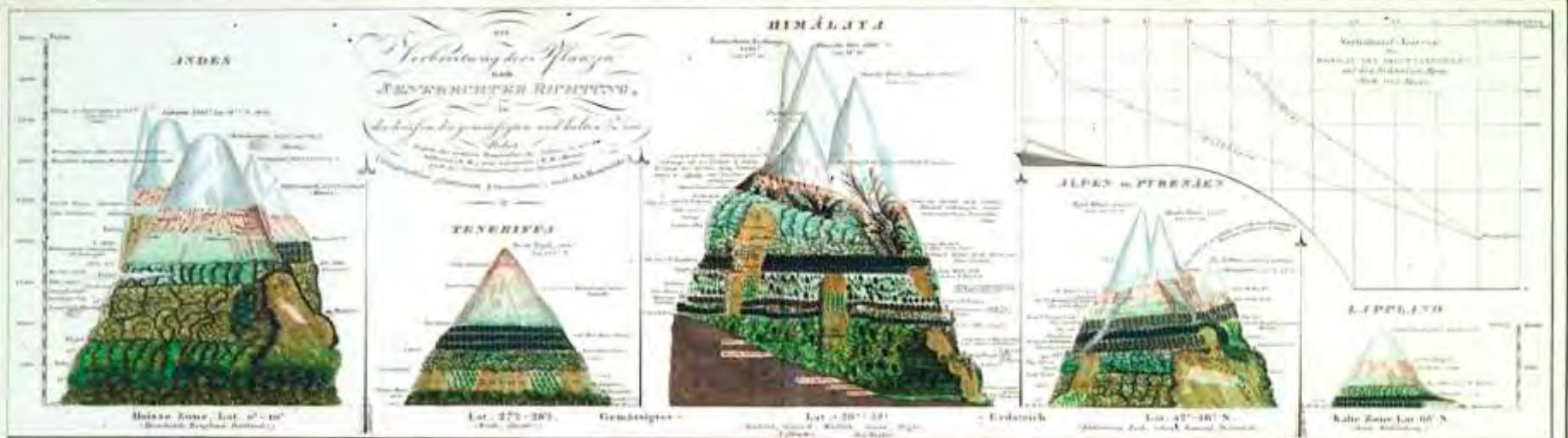
## Infographic

This variety and richness, but also the simplicity of the scientific information depicted, was unprecedented.

Plants distributed according to their altitudes, ranging from subterranean mushroom species to the lichens that grew just below the snow line.







**ERDEWÜCHSE**

DEUTSCHLANDS ERDEWÜCHSE

1	Wald
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50	Wald

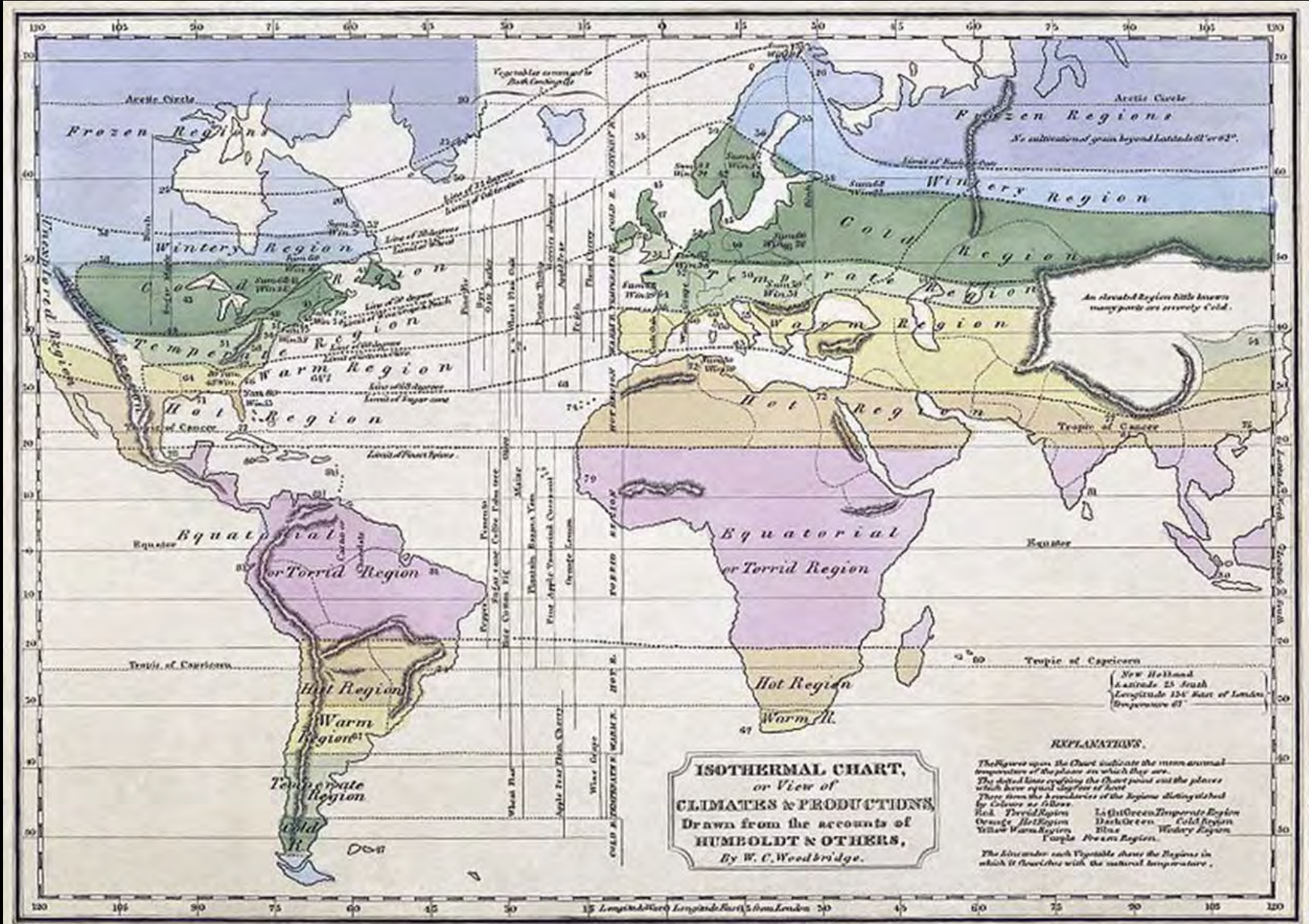
**Erklärung der Zeichen**

**Wälder einzelner**



# Humboldtian Science of Nature – Order and Change

To map and to explain the patterns of variation in geographical phenomena



# Humboldt's Progeny - Biogeography and Evolution

## Alfred Russel Wallace 1823-1913

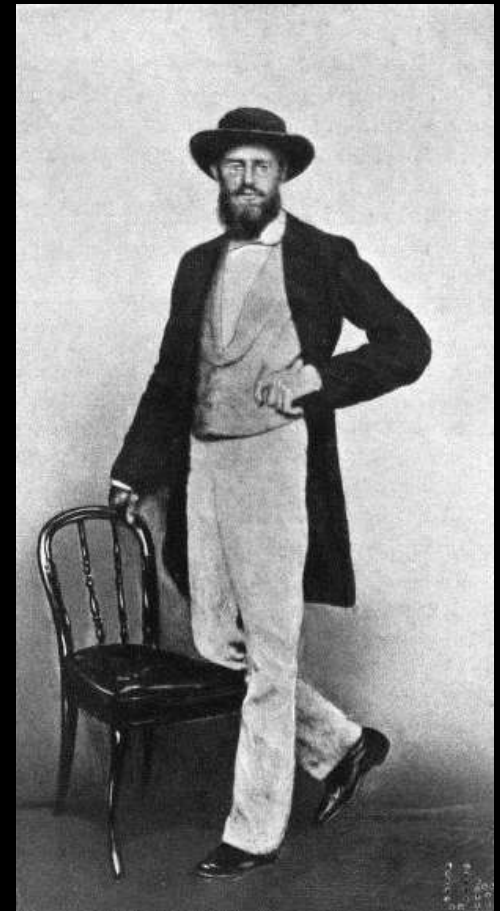
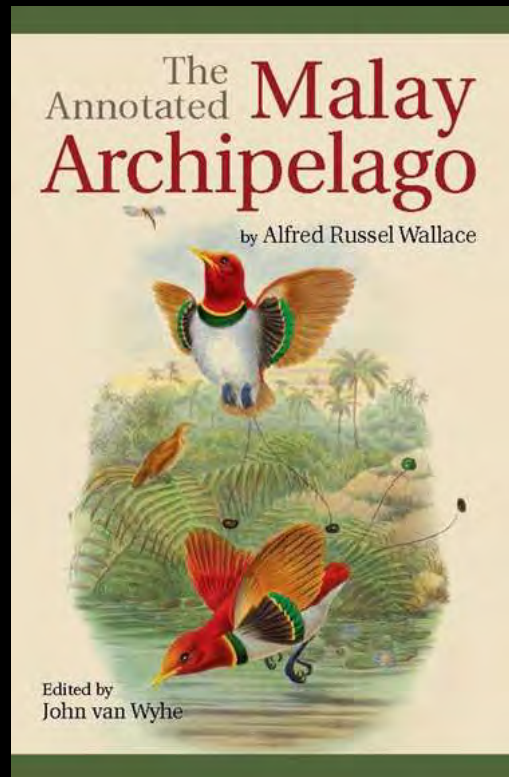
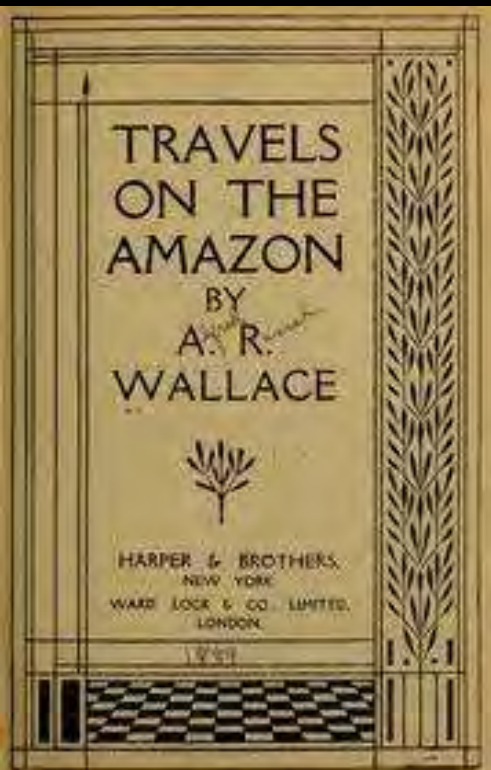
Cites two influences to travel to the tropics - Humboldt's *Personal Narrative* – “the first book that gave me the desire to visit the tropics” and Darwin's *Voyage of the Beagle*

Travels to the Amazon (1848-52)

Publishes *A narrative of travels on the Amazon and Rio Negro* (1853)

Travels to the Malay Archipelago (1854-1862)

Publishes *The Malay Archipelago* (1869)



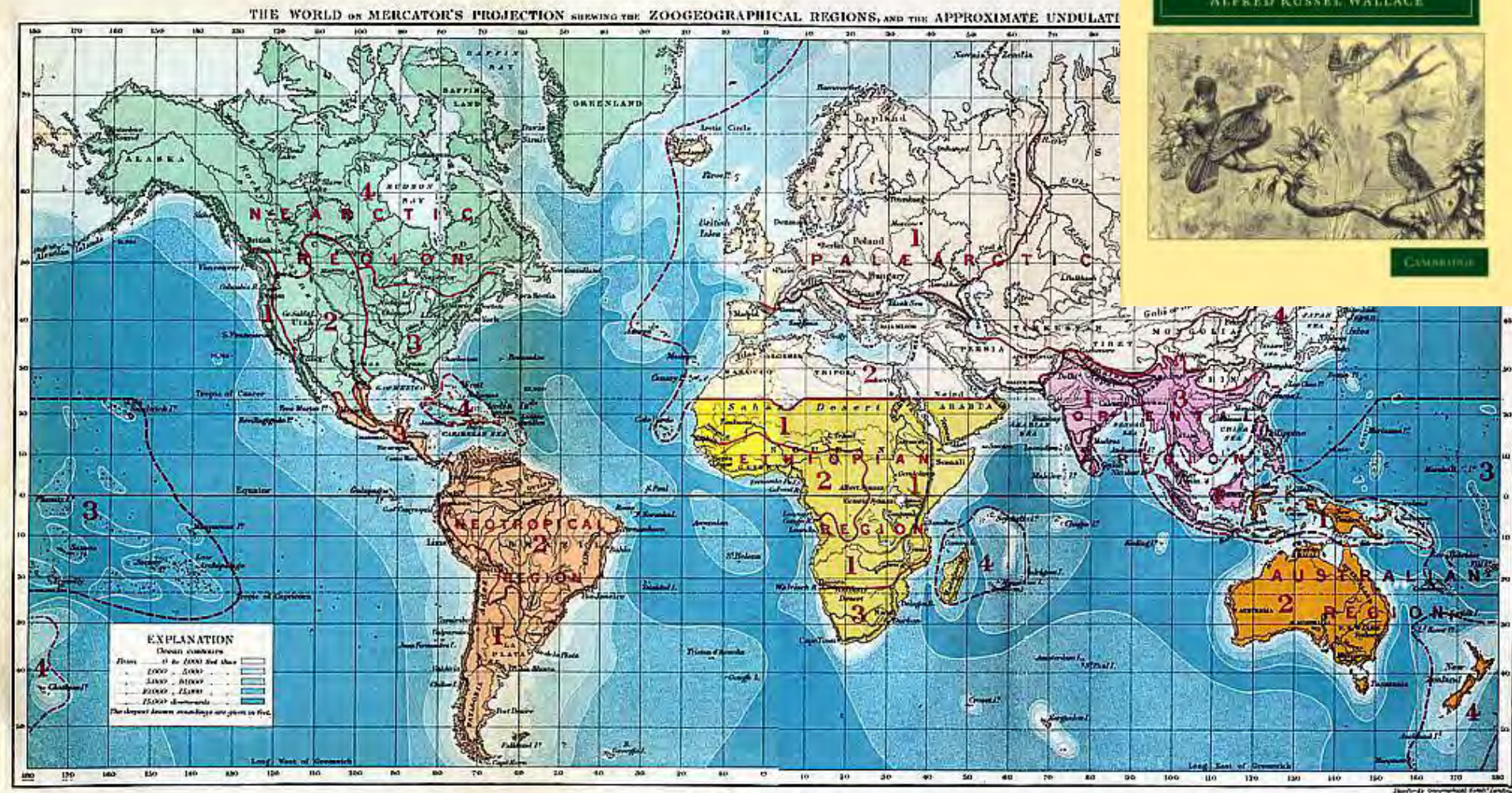
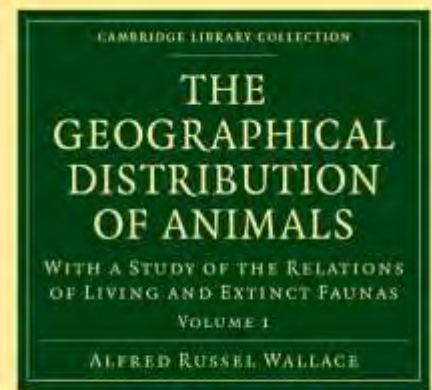
# Wallace - "Father of Biogeography"?

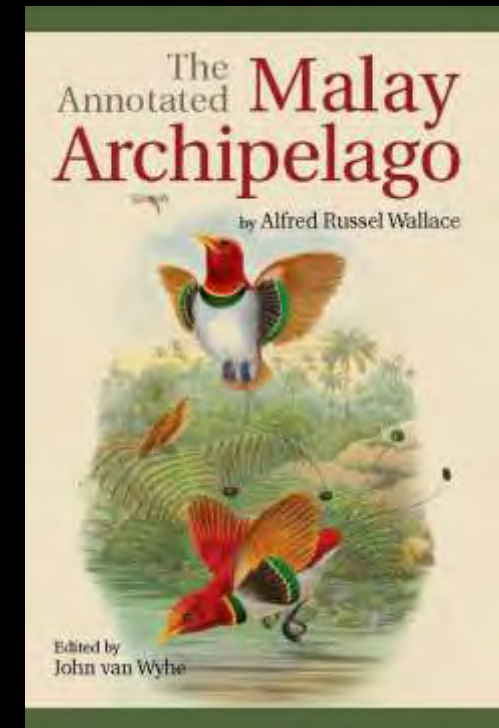
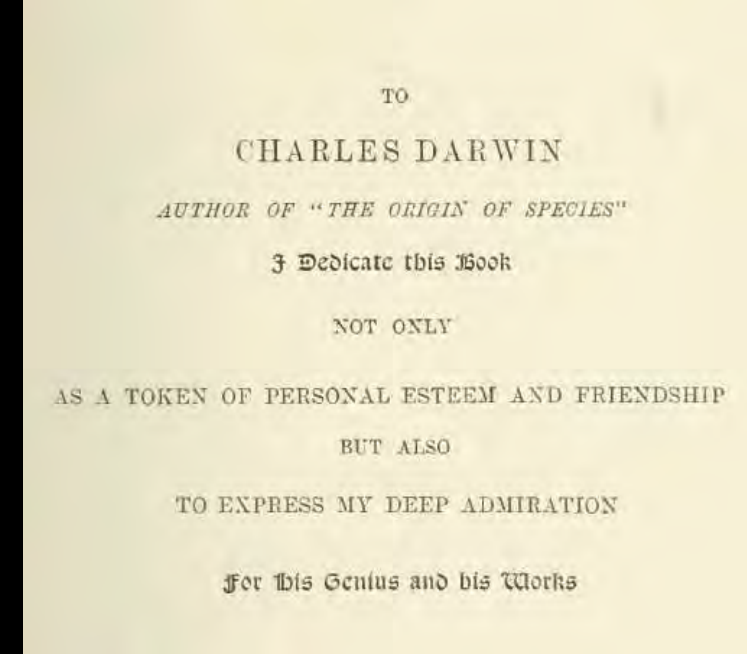
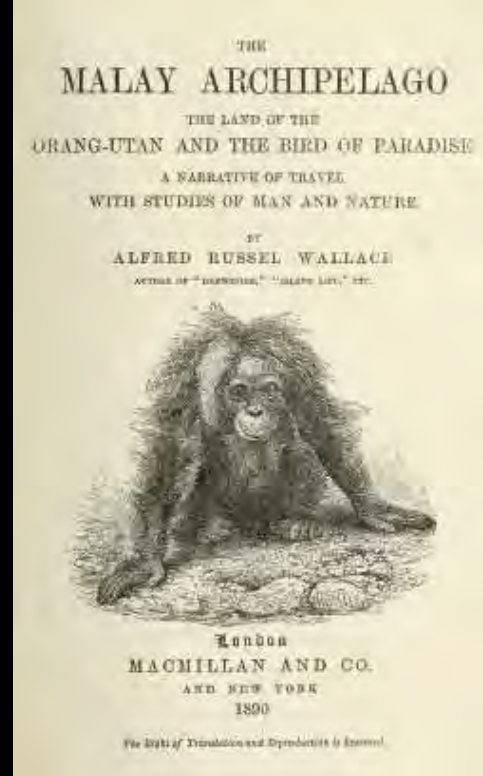
Identified the "Wallace Line" that divides the Indonesian archipelago into two distinct parts, one in which animals closely related to those of Australia are common, and one in which the species are largely of Asian origin.



# Biogeography - Wallace

## The Geographical Distribution of Animals (1876)





“Co-discovery” of the Theory of Evolution 1858

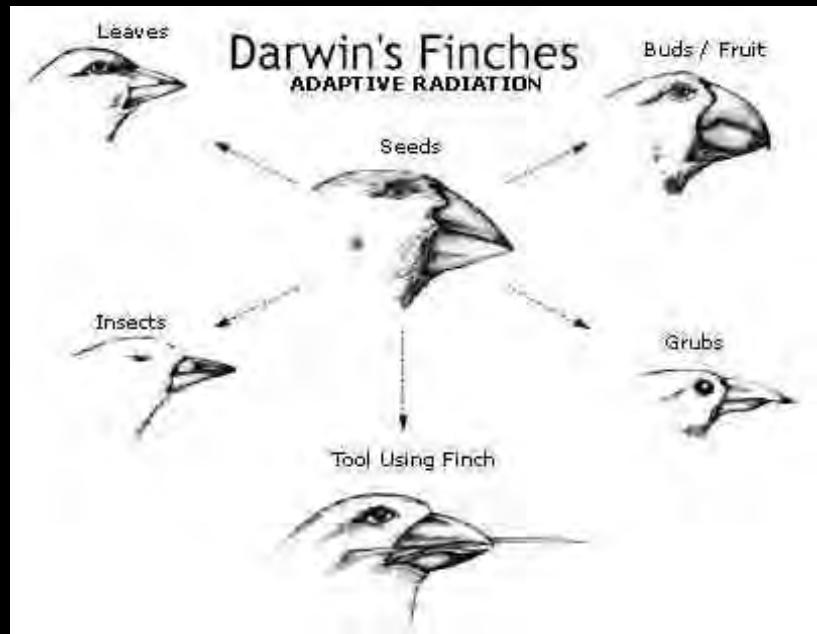
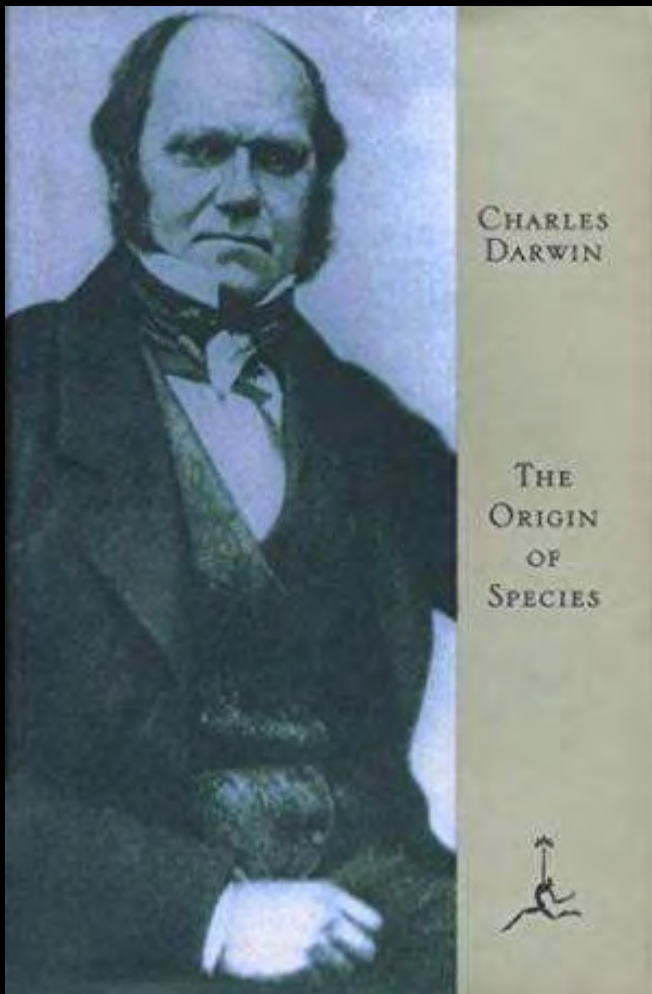
He is best known for independently proposing a theory of evolution due to natural selection that prompted Charles Darwin to publish his own theory.

“On the Tendency of Varieties to depart indefinitely from the Original Type” (1858)

# Darwin "Co-discovery" of the Theory of Evolution 1858-1859

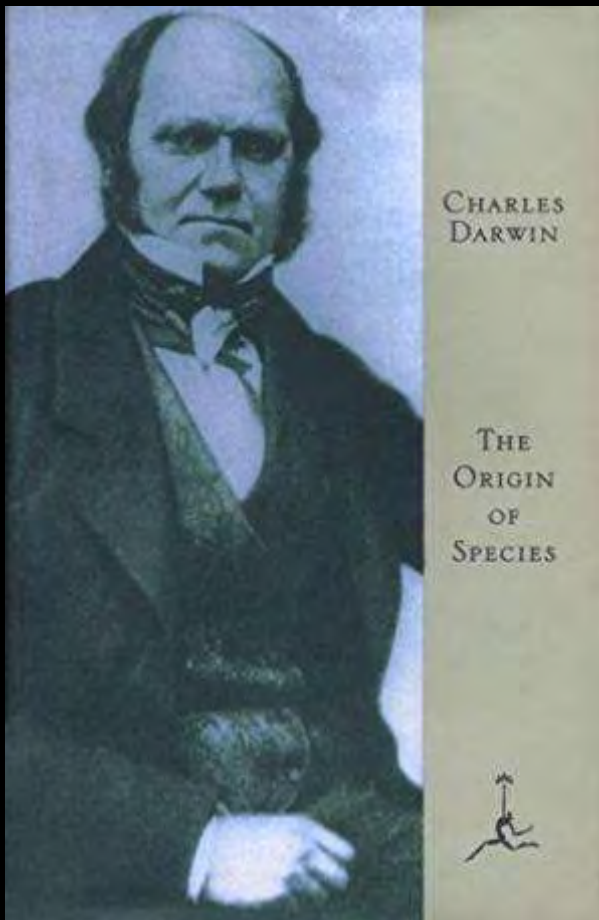
When Darwin received Alfred Russel Wallace's paper which described natural selection, he offered to give Wallace credit for the discovery.

Joseph Hooker and Charles Lyell arranged for a joint reading of papers by Darwin and Wallace to the Linnean Society on July 1, 1858.



# The "Co-discovery" of the Theory of Evolution 1858-1859

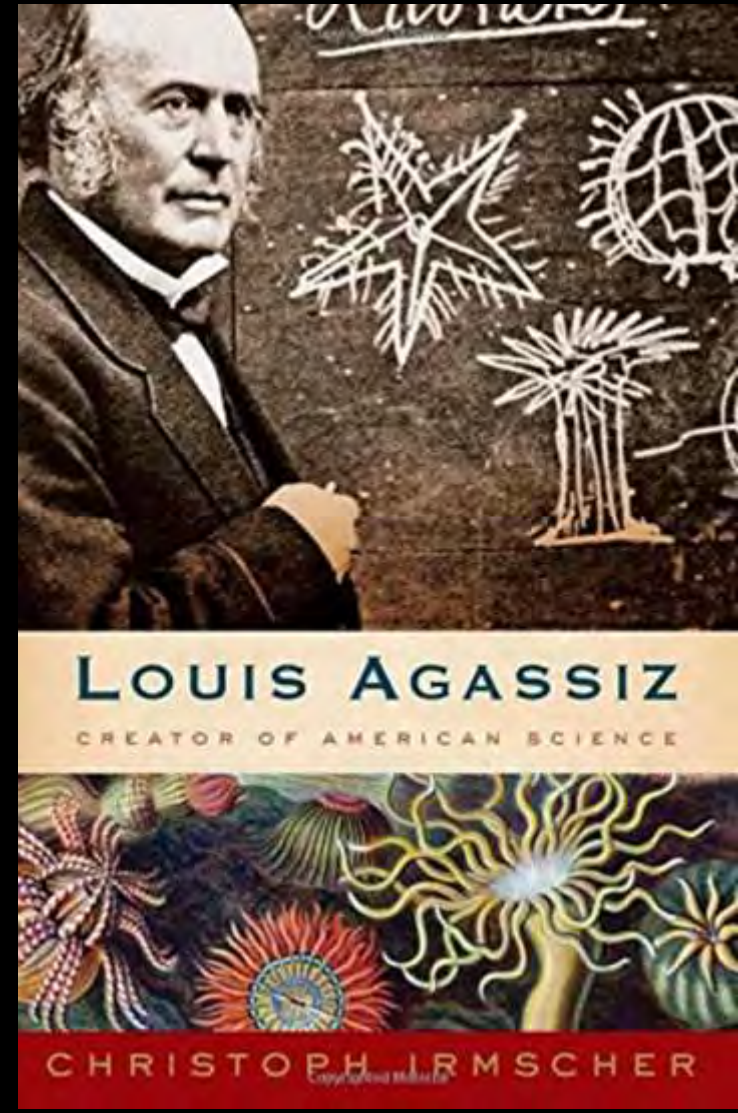
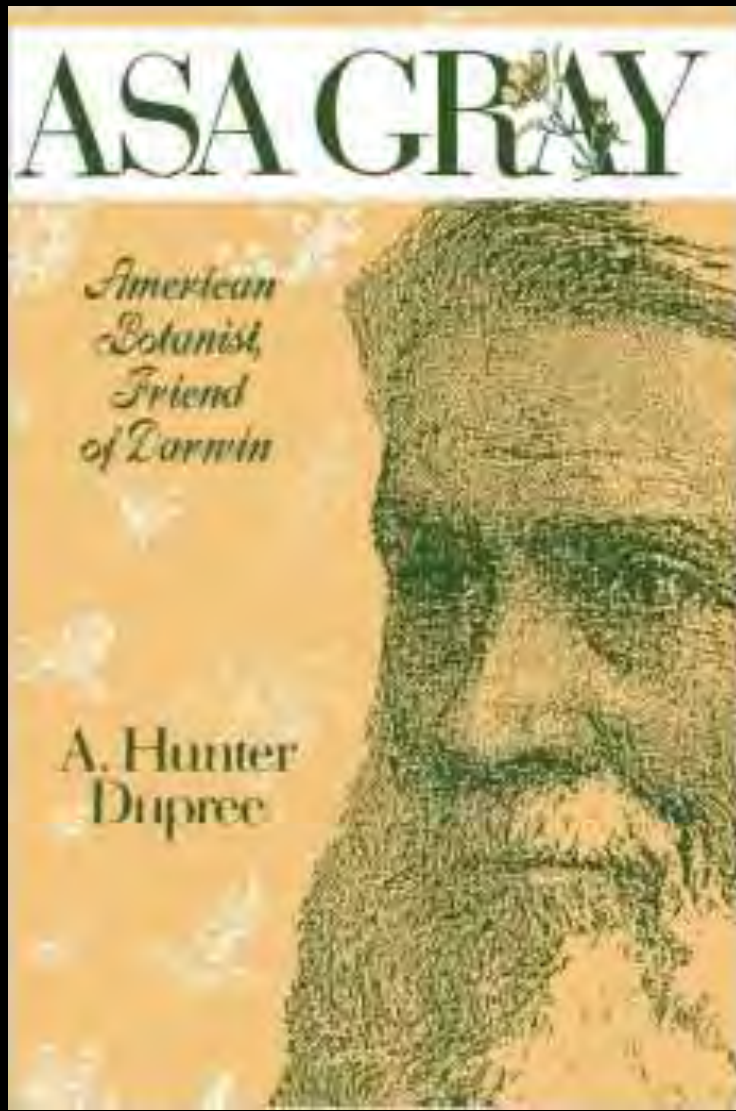
Since Darwin had nothing prepared, the reading included excerpts from his 1844 unpublished essay "On the Variation of Organic Beings in a state of Nature; on the Natural Means of Selection; on the Comparison of Domestic Races and true Species" and from a letter he had sent to American botanist Asa Gray in July 1857, outlining his theory on the origin of species.





# Emergence of American Biology and the Great Evolution Debate

## Natives and Non-Natives



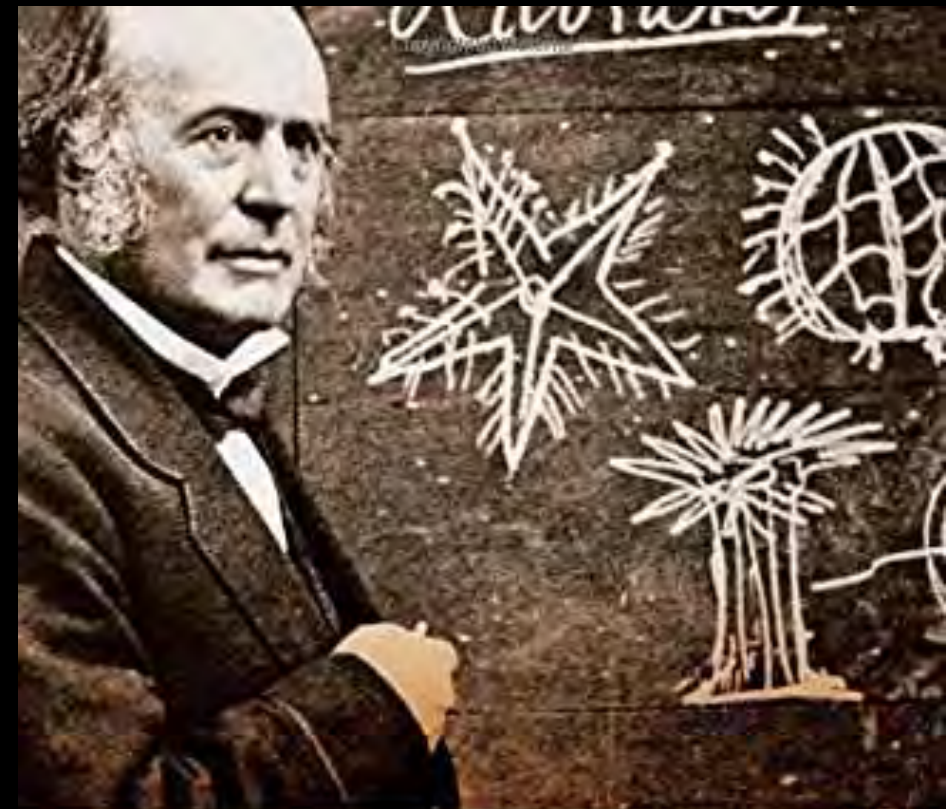
# The Non-Native Humboldt the Mentor

## Louis Agassiz 1807 - 1873

He grew up in Switzerland and studied in France during 1831-32 working closely with Cuvier on fossil fish at the Museum of Natural History in Paris.

There he became friends with Humboldt, who made a large cash gift to help Agassiz continue his work.

Later that year, he became a professor of natural history at University of Neuchâtel through Humboldt's support.



**LOUIS AGASSIZ**

CREATOR OF AMERICAN SCIENCE

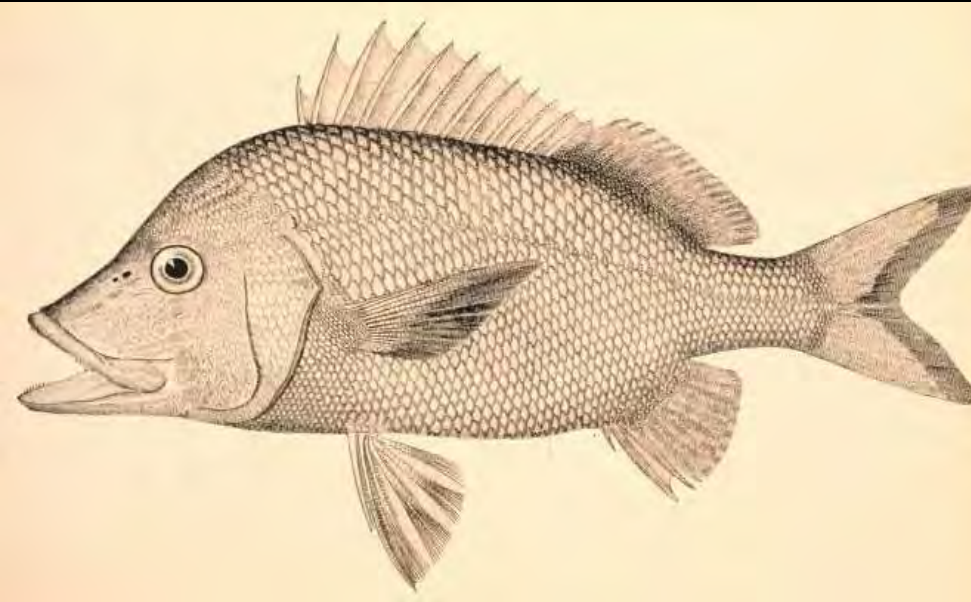
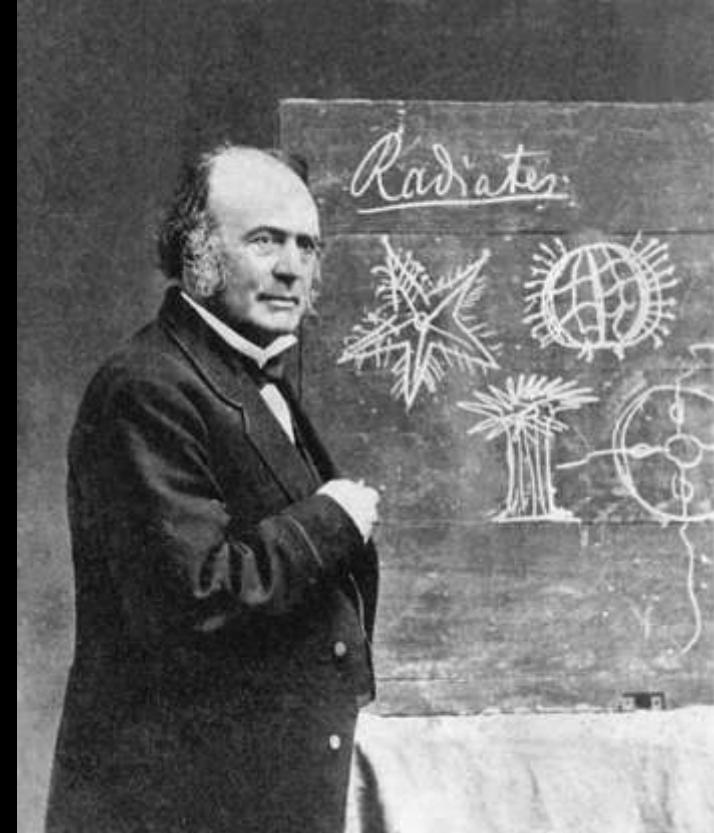


CHRISTOPH IRMSCHER

# Louis Agassiz 1807 - 1873

His two great areas of study were marine biology and glaciation.

Agassiz made extensive contributions to ichthyological classification (including of extinct species) and to the study of geological history (including to the founding of glaciology).



# Non-Natives - Agassiz and American Science

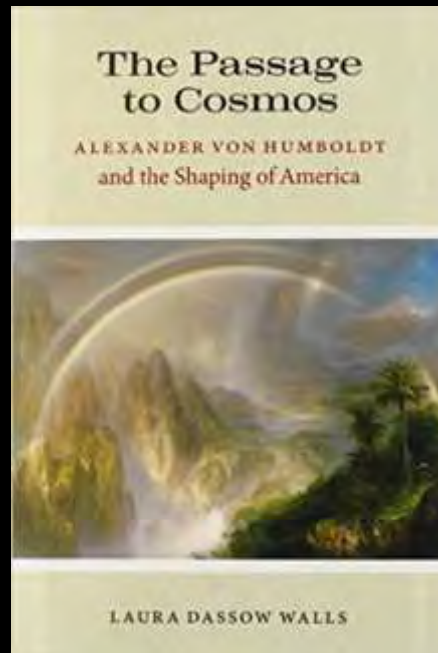
- In 1846, Agassiz came to the United States on a lecture tour arranged by Humboldt; he was a huge popular success and his expertise was widely recognized and celebrated.
- In 1848 he accepted a professorship at Harvard to be a professor of zoology and geology at Harvard and to head its Lawrence Scientific School.
- “Study Nature not Books” - His popular public lectures inspire the Nature Study movement in America – the beginning of U.S. environmental education.
- In 1859 he founded the Museum of Comparative Zoology, which opened its doors in 1860. This was the first publicly funded science building in North America.



# Agassiz vs. Humboldt – Creationism vs. Evolution

In his books, Humboldt makes no mention of God, and “he took evolution for granted even as he was baffled by its cause.” – Walls *Passage to Cosmos* 2009

- Agassiz was a staunch creationist, and he taught that after every global extinction of life God created every species anew. “A species is a thought of the Creator”
- Agassiz saw the Divine Plan of God everywhere in nature, and could not reconcile himself to a theory that did not invoke design.
- Agassiz staunchly supported the fixity of species and special creation of man, and thus became an outspoken critic of Darwin's theory of evolution.



# Agassiz vs. Humboldt – Racism vs. Anti-Racism

## Polygenesis vs. Monogenesis

### White Superiority and the Faces of Slavery

Joseph Zealy daguerreotypes, photographs of South Carolina plantation slaves that were commissioned in 1850 by Agassiz (and that ended up in the Harvard University anthropology museum).

Agassiz wanted these photographs to be read as scientific evidence for polygenesis, the idea that human races had separate origins and were thus fundamentally different.

### Humboldt vs. Agassiz and Racism

Humboldt was disgusted by Agassiz's views on race, slavery, and the superiority of white humans.

In 1859 Humboldt wrote in the NYTimes,

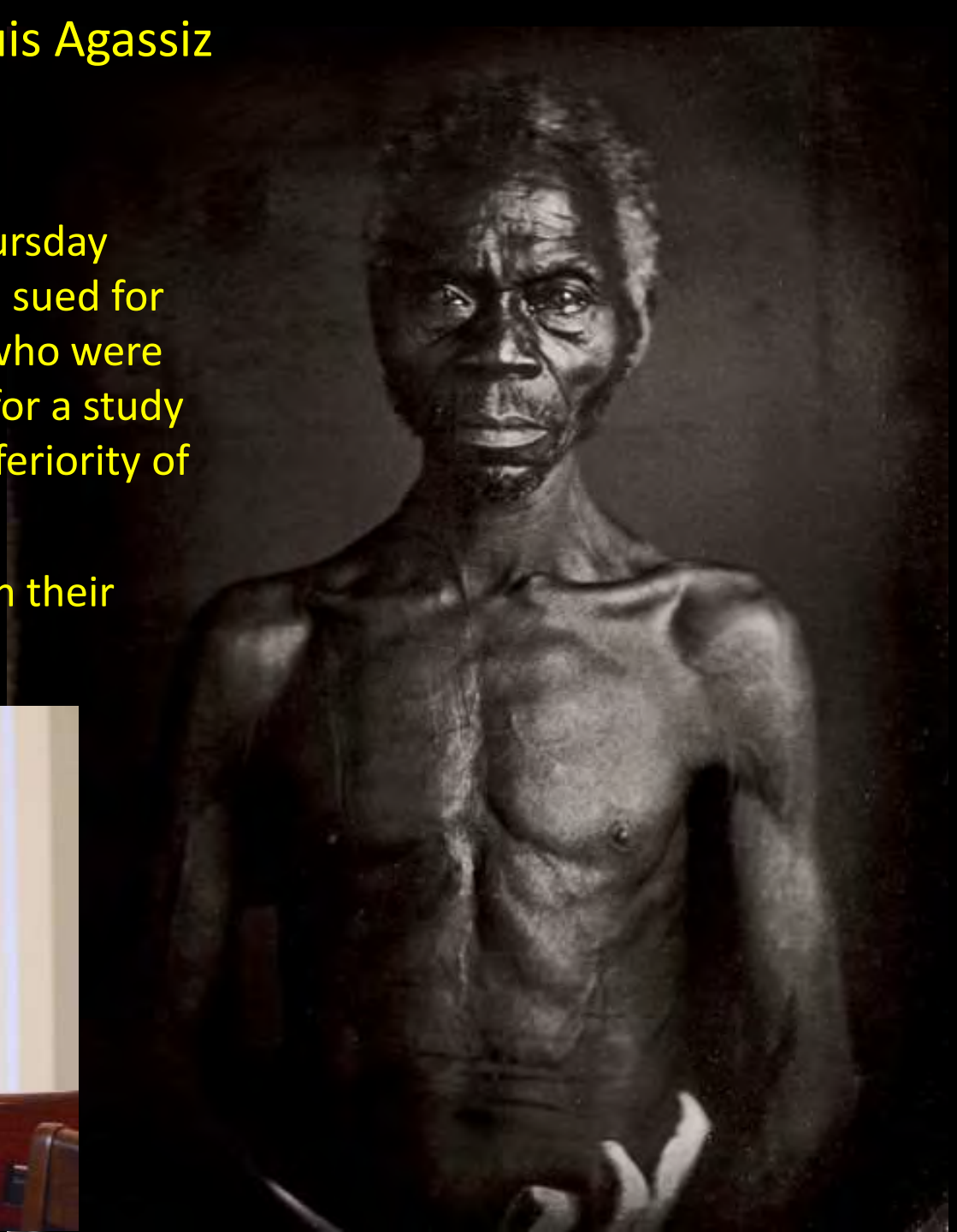
“I am half American; that is, my aspiration are all with you; but I don't like the present position of your politics. The influence of Slavery is increasing, I fear. So too the mistaken view of negro inferiority.”



# Harvard Can be Sued Over Louis Agassiz Slave Photos from 1850

BOSTON, June 23 2022 (Reuters) - Massachusetts' highest court on Thursday ruled that Harvard University can be sued for mistreating a descendant of slaves who were forced to be photographed in 1850 for a study by a professor trying to prove the inferiority of Black people.

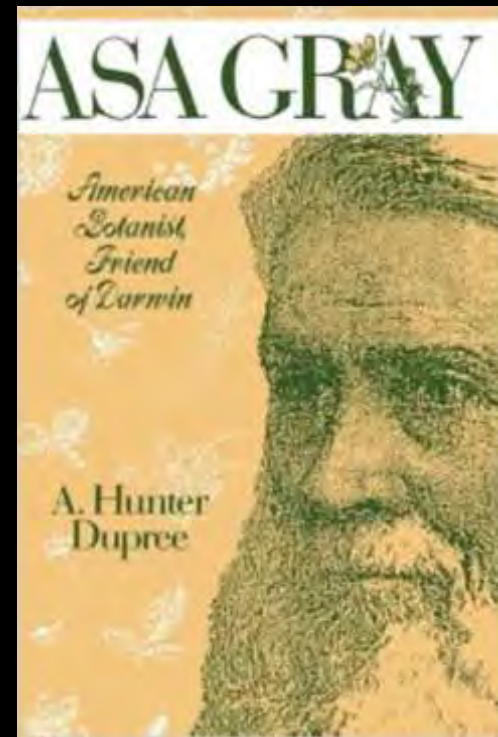
“we saw pride and determination” in their faces



# Natives – Gray and Humboldtian Science

## Asa Gray 1810 – 1888

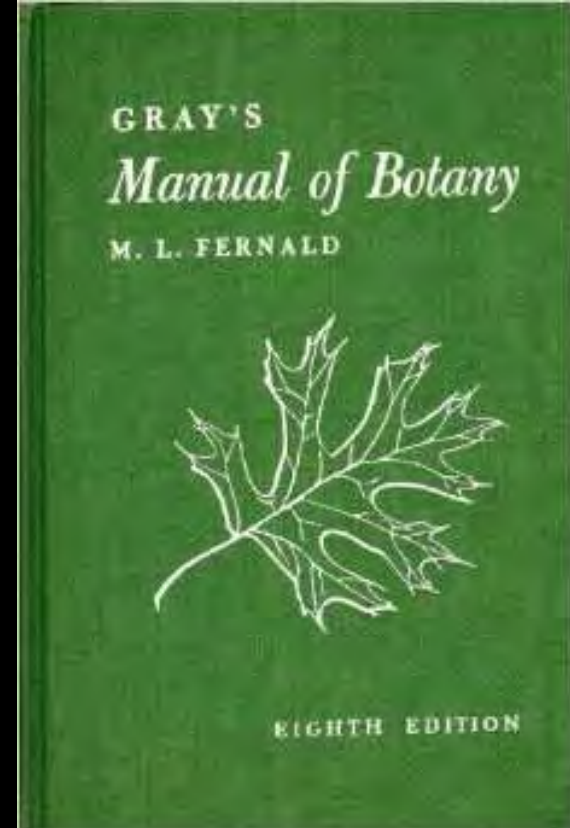
- Gray was born in Sauquoit, New York in 1810.
- Gray became an assistant to Torrey. Gray and his mentor John Torrey published *The Flora of North America* together in 1838.
- In 1838, Gray became the very first professor at the newly founded University of Michigan. Appointed the Professor of Botany and Zoology, Gray was sent to purchase books to form the university's library.
- In England he is hosted by Sir William Hooker and meets his son, Joseph Dalton Hooker who introduces him to his friend, Charles Darwin, recently back from a voyage around the world.





## Harvard and Gray's *Manual of Botany*

- On returning from Europe, Gray discovers that the job in Michigan has evaporated, but that Harvard University has a position for him.
- Gray accepted this appointment as Fisher Professor of Natural History at Harvard. The formal appointment was made in 1842.
- His most widely used book, *Manual of the Botany of the Northern United States, from New England to Wisconsin and South to Ohio and Pennsylvania Inclusive* (1848), commonly called *Gray's Manual*, has remained, in successive editions, a standard work in this subject.

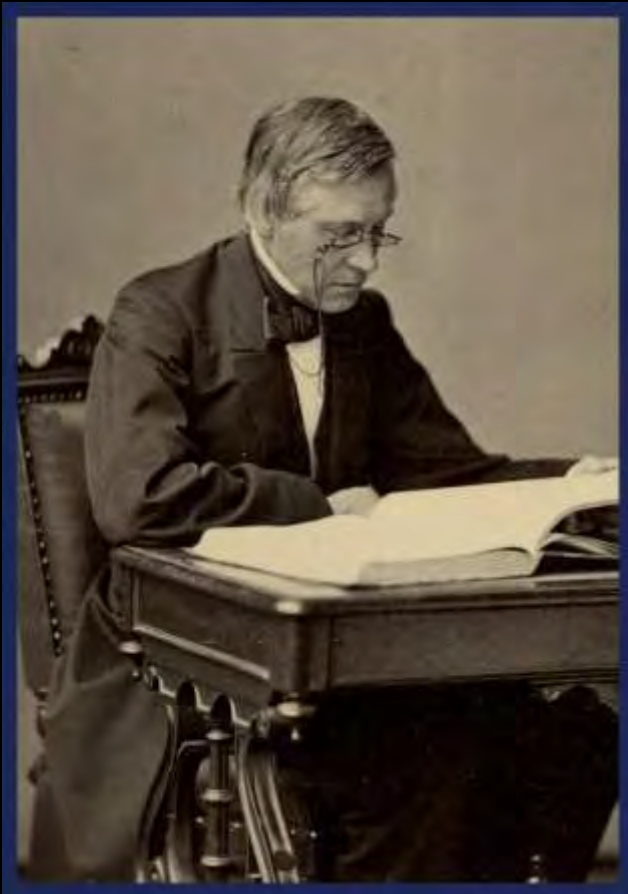


# Slavery and Human Evolution

Gray abhorred slavery.

In his view science proved the unity of all man because all human races can interbreed and produce fertile offspring; i.e., all members of a species are connected genetically.

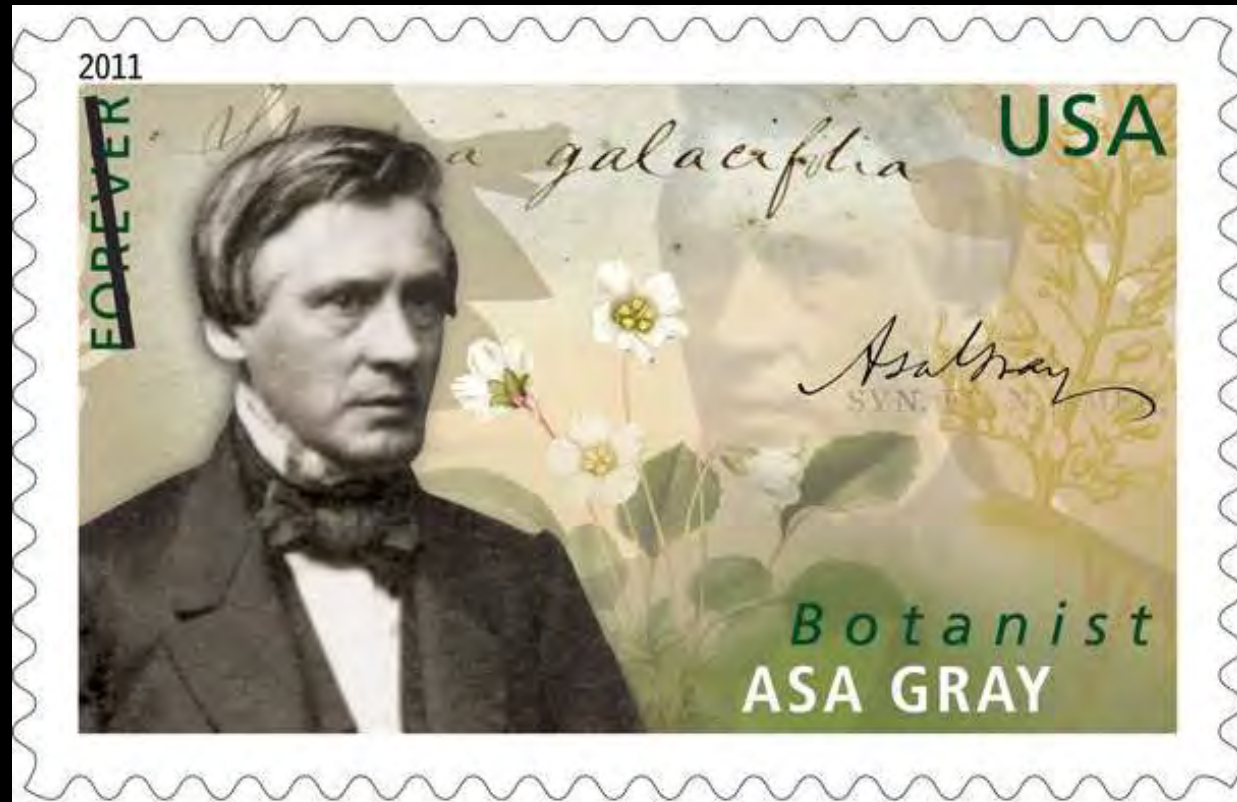
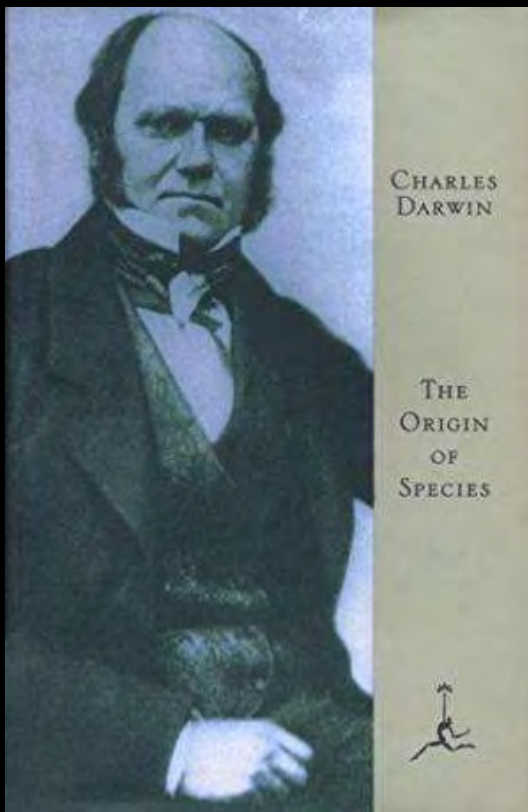
He also felt Christianity taught the unity of mankind.



# Gray and the Theory of Evolution - Darwin's Letter to Asa Gray July 1857

“As you seem interested in subject, & as it is an immense advantage to me to write to you & to hear ever so briefly, what you think, I will enclose (copied so as to save you trouble in reading) the briefest abstract of my notions on the means by which nature makes her species...

In regard to my abstract you must take immensely on trust; each paragraph occupying one or two chapters in my Book. You will, perhaps, think it paltry in me, when I ask you not to mention my doctrine...”



# Natural Selection

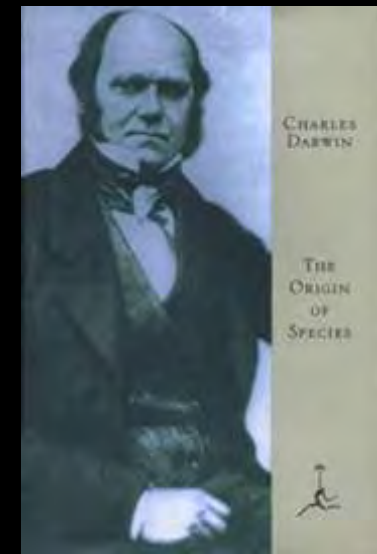
## Darwin's Letter to Asa Gray July 1857

“And it follows, I think, from the foregoing facts that the varying offspring of each species will try (only few will succeed) to seize on as many and as diverse places in the economy of nature, as possible. Each new variety or species, when formed will generally take the places of and so exterminate its less well-fitted parent.”

This, I believe, to be the origin of the classification or arrangement of all organic beings at all times. These always seem to branch and sub-branch like a tree from a common trunk; the flourishing twigs destroying the less vigorous,—the dead and lost branches rudely representing extinct genera and families”

The correspondence with Gray was thus a key piece of evidence in establishing Darwin's intellectual priority with respect to the theory of evolution by natural selection.

The publication of Darwin's letter to Gray and Gray's support of Darwin and the theory of evolution prompted fierce debate in America...and between Agassiz and Gray.

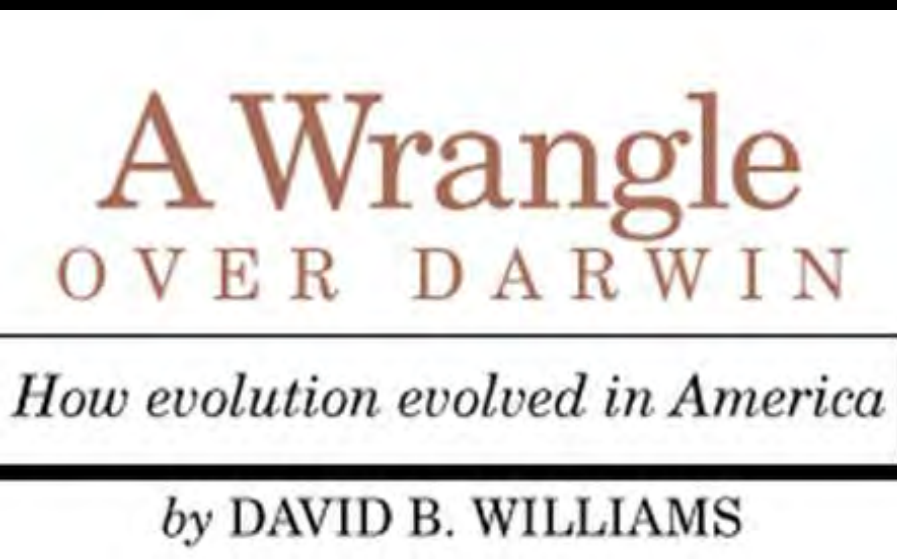


# The Great American Evolution Debate – Gray vs. Agassiz

"If Darwin is right, Agassiz is wrong."

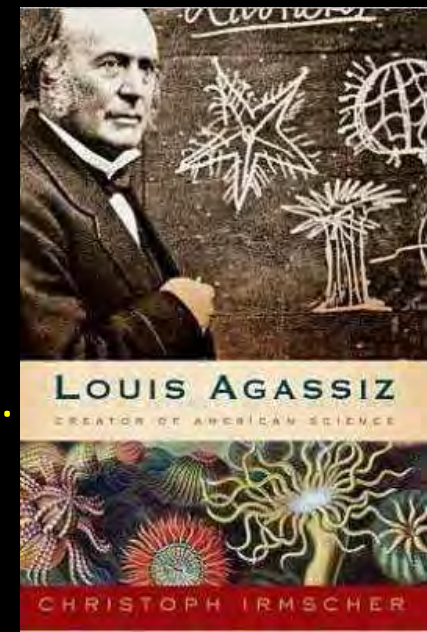
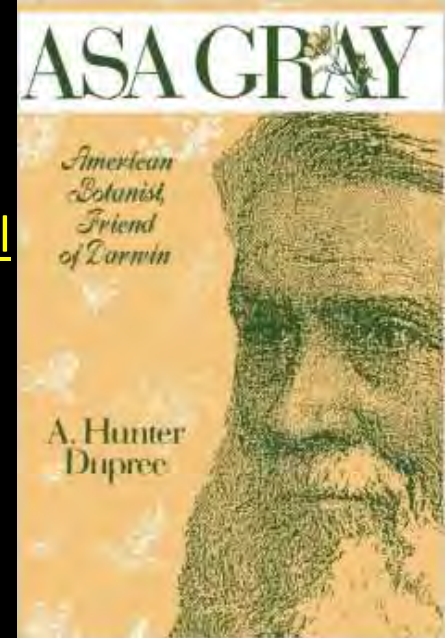
Harvard thus became the most important battleground in the initial American engagement with natural selection.

In a May 1859 meeting of the Cambridge Scientific Club, Gray began the debate "To see how it would strike a dozen people of varied minds and habits of thought, and partly, I confess, maliciously to vex the soul of Agassiz with views so diametrically opposed to all his pet notions," he explicated Darwin's theory directly, summarizing and reading parts from Darwin's Linnean Society paper and the abstract Darwin had sent him, presenting plainly Darwin's theory of evolution and natural selection and noting once again that this view of species creation directly contradicted Louis's idealist vision.



# Humboldt's Progeny and American Biology

- First copies of *Origin of the Species* arrive in US December 1859.
- Gray began his public defense of Darwin in the American Journal of Science with a positive review of *Origin of the Species* in the March 1860 issue.
- He wrote that Darwin's ideas on variation within plants and animals were "general, and even universal." Gray ultimately concluded that "The work [Origin] is a scientific one...and by its science it must stand or fall."
- Agassiz's first printed rebuttal of Darwin appeared in the July 1860 American Journal of Science, it seemed to confirm that he would rather stubbornly defend a creationist vision than undertake the critical thinking of science.
- Between 1861 and 1866 Agassiz gave scores of lectures and published four books and twenty-one articles — almost all in the popular press — asserting his brand of special creationism. Yet even as he fought, he fell. He retained virtually no scientific allies.
- By Agassiz's death in 1873, Darwin's theory as championed by Gray was broadly accepted by American biologists.



# HUMBOLDT.

The One Hundredth Birthday of  
the Philosopher.

Celebration Generally Throughout  
the Country.

Unveiling of the Bust at the  
Central Park.

ORATION BY DR. FRANCIS LIEBER.

Processions, Banquet and Speeches  
in this City.

EXTENSIVE OBSERVANCES IN BOSTON.

Eulogistic Address by Professor  
Agassiz.

IN THIS CITY.

Extent of the Observances—Decorations  
in the City and on the Shipping—  
Leading Features of the Celebration.

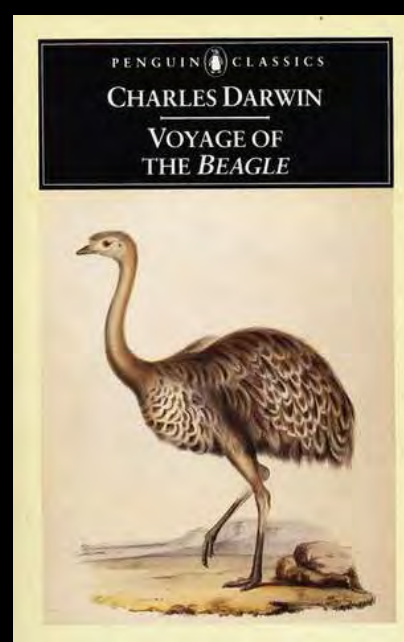
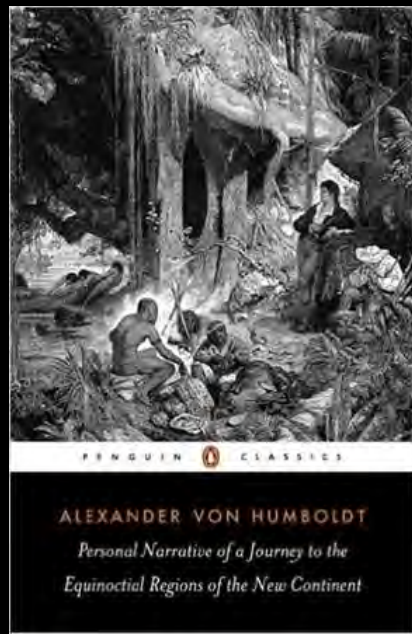
On 14 September 1869, tens of thousands of people crowded the streets of cities across the United States to mark the centennial of Humboldt's birth: Parades, speeches, concerts, monuments, and banquets honored the most famous and beloved scholar of the time. The next day the *New York Times* devoted its entire front page to coverage of the events



Humboldt died in 1859, six months before Darwin's *Origin of Species* was published.

In 1869, the centennial of his birth was celebrated across the globe, from Moscow to Mexico City and, in the United States, most cities hosted celebrations, with 10,000 people joining President Grant in Pittsburgh while 15,000 attended the festivities in New York City.

FIG. 1—The entire front page of the 15 September 1869 *New York Times*, on which these headlines appeared, was given over to coverage of the Humboldt celebrations in New York and other U.S. cities, as was additional space in that day's issue.



## Humboldt and Darwin

There is no better proof of how Darwin treasured his Personal narrative to the end of his life than his ink note written inside the back cover of volume 3 of his own copy: "July 6 1881 to p. 417 – April 3rd 1882 finished".

So the book given to Darwin by Henslow half a century before must have been one of the last Darwin ever read, or in this case re-read.

He was too ill in the following weeks to do much else.

Darwin died on 19 April 1882.



Applause

