THE HAUNTED FOREST

NEW WORLD PLANTS & ANIMALS

AN EXHIBITION

OF

BOOKS FROM THE DEPARTMENT OF SPECIAL COLLECTIONS

Kenneth Spencer Research Library

University of Kansas

Lawrence, Kansas

In commemoration of the quincentenary of the arrival of Christopher Columbus in the New World, October 12, 1492

This exhibition is dedicated to my father, Robert Lee Haines (1903-1982), naturalist, and member (adopted) of the Wolf Clan of the Seneca Nation of Indians

Imagine for a moment this scene at the Port of Palos, Spain, just prior to embarkation of Genoese map-maker Christopher Columbus with his small fleet on August 3, 1492:

… *The dock is lined with cheering people. Columbus speaks:*

"My friends, my friends, I mean *my friends!* … This is positively the finest exhibition ever to be shown … well … eh … be that as it may -- I, your Wizard *par ardua ad alta,* am about to embark

upon a hazardous and technically unexplainable journey into the outer stratosphere …" (Crowd cheers)*

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In this year of revisionist interpretations of Columbus's epoch-making landfall on the shores of the New World, we decided with this exhibition to take our own revisionist view of the historic events of 1492. Being like the Wizard of Oz "an old Kansas man" ourselves (woman, in fact, and by way of New Jersey) and full of the spirit of American humbug, we couldn't help but notice in the story of the Discovery a metaphor for The Americas as Land of Oz, and for the man Columbus as part Wizard, part Dorothy, carried by a wind machine on a voyage to a new land beyond the rainbow.

It isn't that we refuse to have truck with other revisionist viewpoints -- on the contrary, we would be the first to admit that the Man from the Emerald City (where he was just as much an interloper as was our Admiral of the Ocean Sea on American soil) turned out to be a very *bad* Wizard – and we all know what mischief went on in Oz. Few historians of any stripe will argue that Columbus was the first Old Worlder to reach the shores of the New World, but fewer still would argue against the notion that *his* arrival had the greater impact, for better or for worse, on the subsequent history of the whole world, both Old and New.

Vicente, I've a feeling we're not in the Old World anymore …

Much of the native flora and fauna that we take for granted today was so new and strange to Columbus – and to the European explorers who followed in his wake – that along with the presence of the American Indian, it was his first clue that something had gone amiss in his attempt to reach the Indies – it must have been rather

like taking off in a balloon from the Kansas State Fair and crash-landing in the Haunted Forest.

In this exhibition, illustrated books spanning five centuries depict a few of these "new" forms of life. Some, such as maize and tobacco, were to play an important role in the Columbian Exchange, that enormously accelerated transference of species that followed the Discovery. Many of our New World species remain to this day uninvestigated – and the Exchange continues. The journey of species from Old World to New is another story, for another, future exhibition.

Our collections are ideally suited for exploration of early American natural history, so join us in the spirit of *Ad astra per aspera* expressed in the above speech by Columbus *qua* Wizard on your own voyage of discovery in the Department of Special Collections. Welcome to The Haunted Forest: *I WOULDN'T TURN BACK IF I WERE YOU*. The exhibit captions will provide more than enough wind for your travel-machine.

SALLY HAINES
October 12, 1992

*Quotations (and misquotes) are, unless otherwise noted, from the screenplay for The Wizard of Oz, by Noel Langley, Florence Ryerson & Edgar Allen Woolf, from the book by L. Frank Baum. New York, Dell, 1989.

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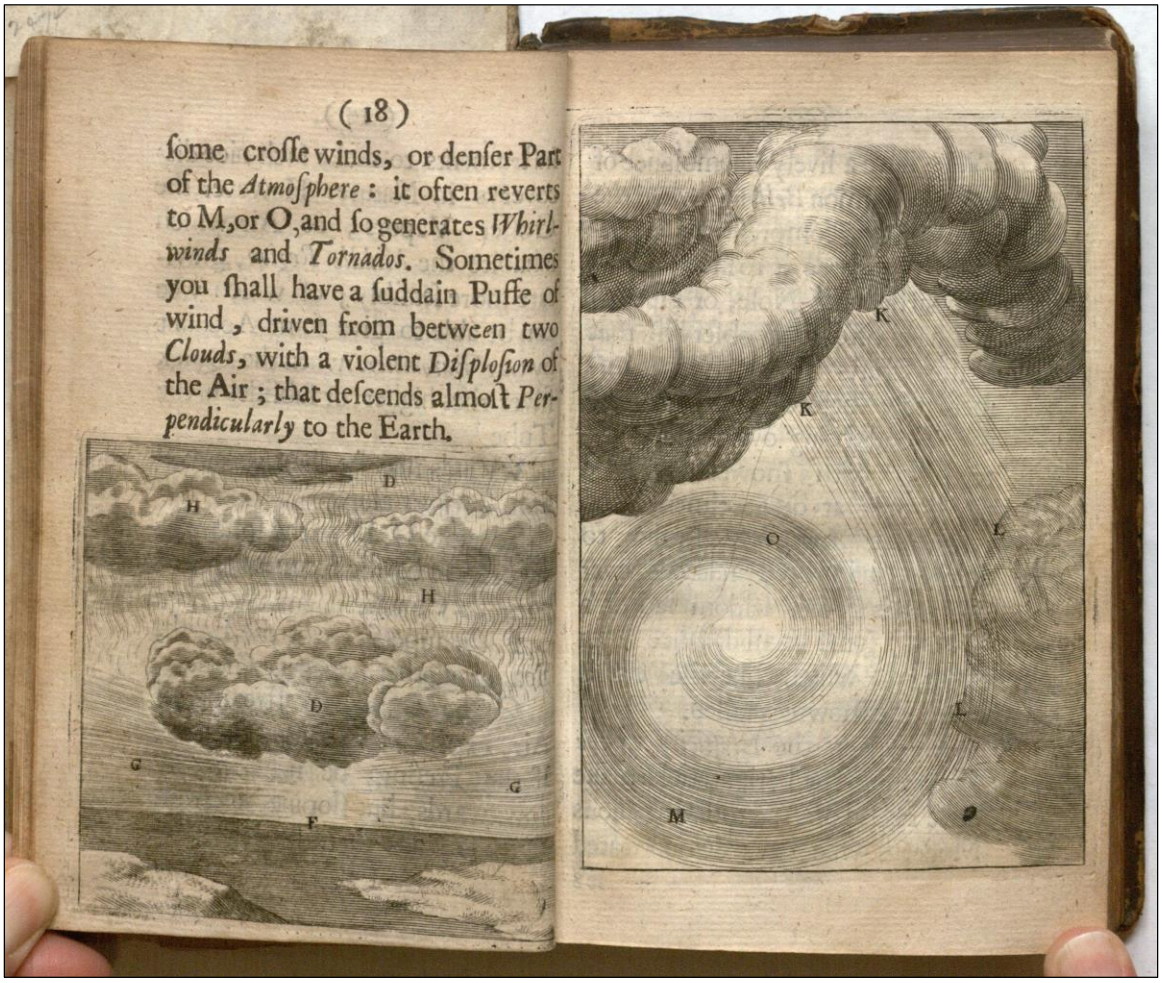
Crinoid stem – Southeastern Kansas

SETTING SAIL



(18)

ſome croſſe winds, or denſer Part of the *Atmoſphere* : it often reverts to M, or O, and ſo generates *Whirlwinds* and *Tornados*. Sometimes you ſhall have a ſuddain Puffe of wind, driven from between two *Clouds*, with a violent *Diſploſion* of the Air ; that deſcends almoſt *Perpendicularly* to the Earth.

***There's a storm blowin' up -- a whopper, to speak in the vernacular* of *the peasantry*.** (PROF. MARVEL)

THE KANZA = PEOPLE OF THE SOUTH WIND

Ralph Bohun (died 1716): *A discourse concerning the origine and properties of wind*. Oxford: Printed by W. Hall for Tho. Bowman, 1671. *B698*

WINDS OF CHANGE … Wind is a good symbol for the beginning of a journey into the relatively unturbulent Stratosphere. Students of weather and other folks who love wind and rain head for Kansas, not only because of the exciting things going at KU where one can study Atmospheric Science -- with real mock-up tornados – but just to be where a great deal of the action is, storm-

wise, Florida and Hawaii notwithstanding. In fact many Kansans much prefer the initial scenes of *Oz*, the movie, in black and white, with tornado, to the happy-sappy-over-the-rainbow stuff later on.

Columbus's first westward crossing was storm-free but winds played their part nevertheless: the trades flung his small fleet to the Bahamas, then to the Greater Antilles and on into the history books.

Bohun's book represents the first *scientific* attempt to explain weather phenomena. He searched the narratives of sea voyages for meteorological data, interviewed ships' captains and recorded their observations verbatim. Particularly vivid is a seven page account of a hurricane in the West Indies.

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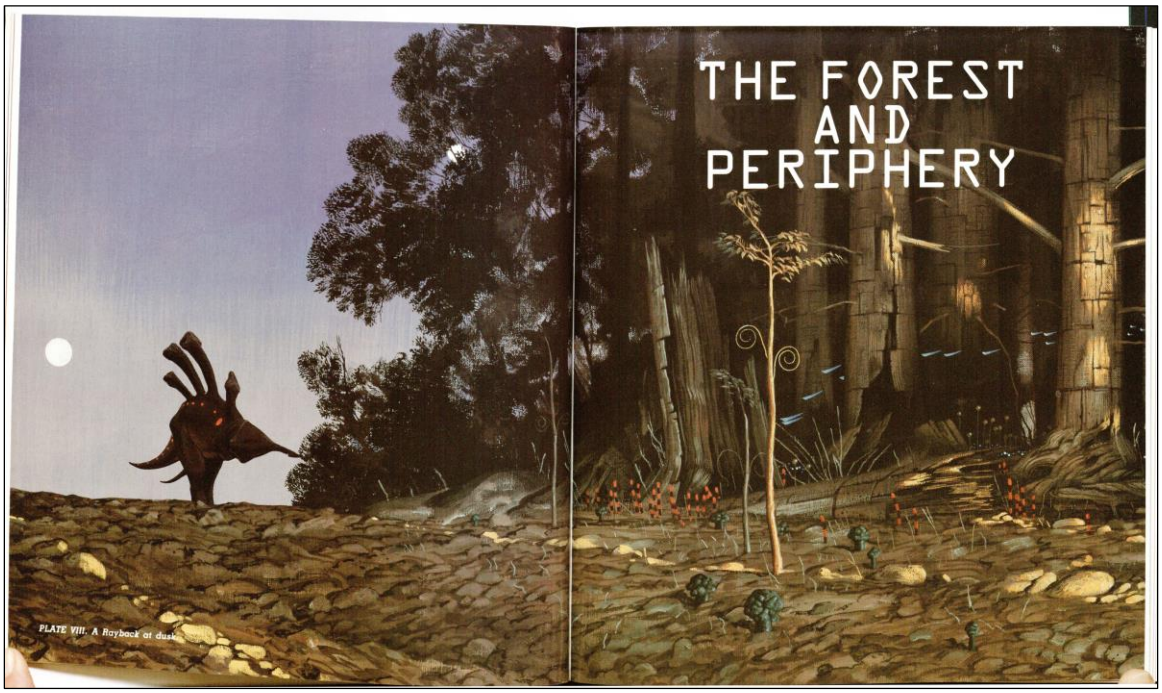

***Now I – I* know *we're not in Kansas*.** (DOROTHY)

DISCOVERY OF THE *NEW* NEW WORLD

Wayne Douglas Barlowe (born 1958): *Expedition: being an account in words and artwork of the A.D. 2358 Voyage to DARWIN IV.* New York: Workman Publishing, 1990. *ASF C590*

Anyone acquainted with KU's proud tradition in field biology and its claim to fame as the birthplace of the New *New* Systematics, won't be surprised to find in our exhibition this book, called "the most important field guide of the 24th century."

Barlowe explains his involvement in the project: "I was chosen to participate as wildlife artist on the strength of my paintings and drawings of extinct Earth fauna. I was to provide a 'more subjective and atmospheric impression' of Darwin IV and its lifeforms than the Expedition's host of conventional holographers and photographers."

Barlowe's paintings, anatomical sketches, and dissections, provide both grist and gristle for the mills of the even Newer New New Taxonomy. As of this writing there are not yet monographs on the Daggerwrists, Gyrosprinters, Electrophytes, and other inhabitants of Darwin IV, so you, dear reader, will have to wait for the quincentenary of the discovery of Darwin IV to see an exhibition, via the latest technology, perhaps including some of those ancient work-horses of communication, printed books.

In the meantime you can prepare for the future by reading the works of Barlowe and other forward-looking writers of the Old New World such as KU's James Gunn. The Department of Special Collections is the primary source for science fiction at KU. Gunn, now retired, has taught courses in the subject and the writing thereof. Former student Larry Friesen, now a physicist and lunar geologist, helped give the collection a start back in the 1960s, and largely through Gunn's PR efforts through several decades we have been able to add substantially to the growing body of hardbacks, paperbacks (including many in exotic, though not yet otherworldly, languages), magazines, and manuscripts, the common stuff as well as the ephemeral and the unique.

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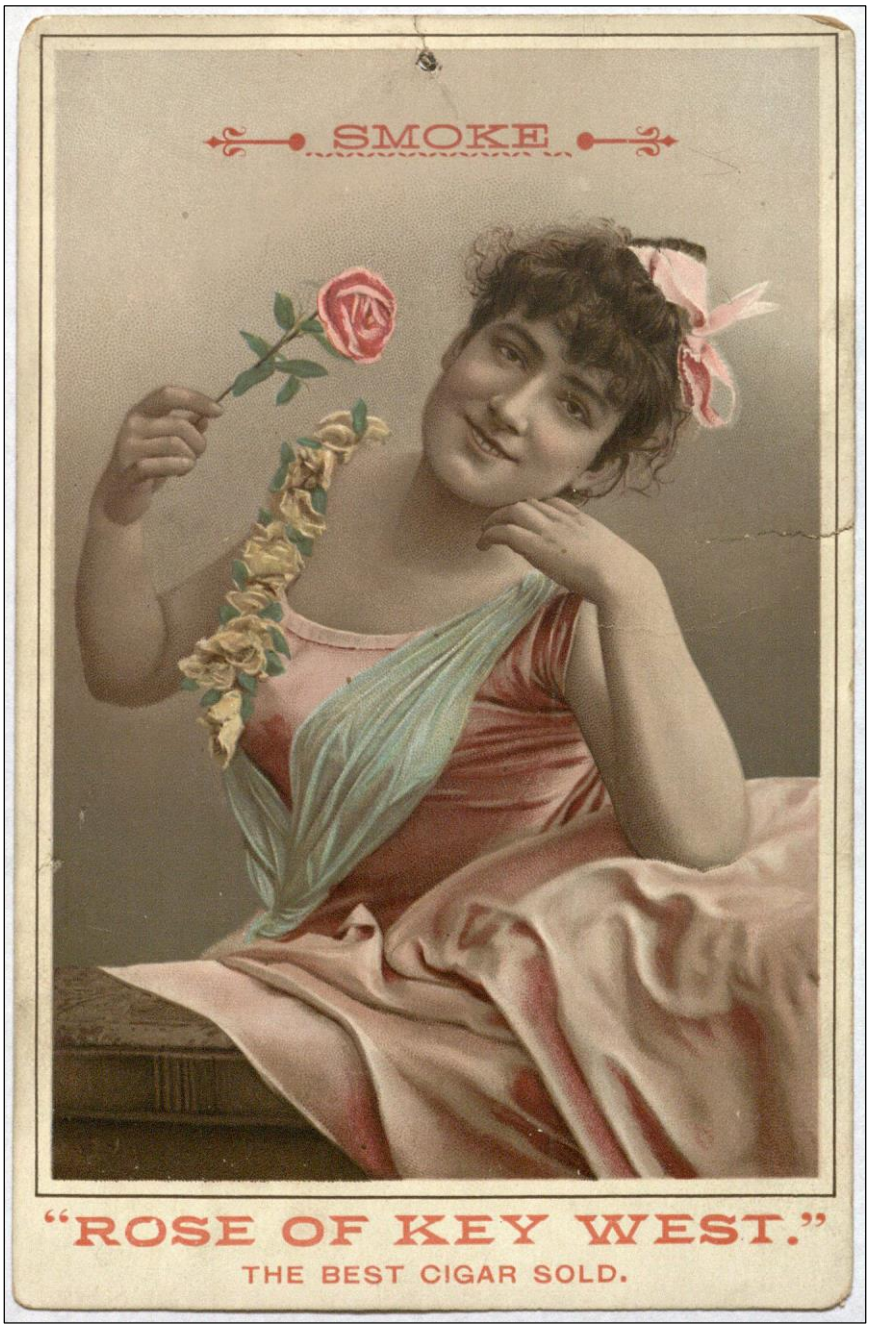
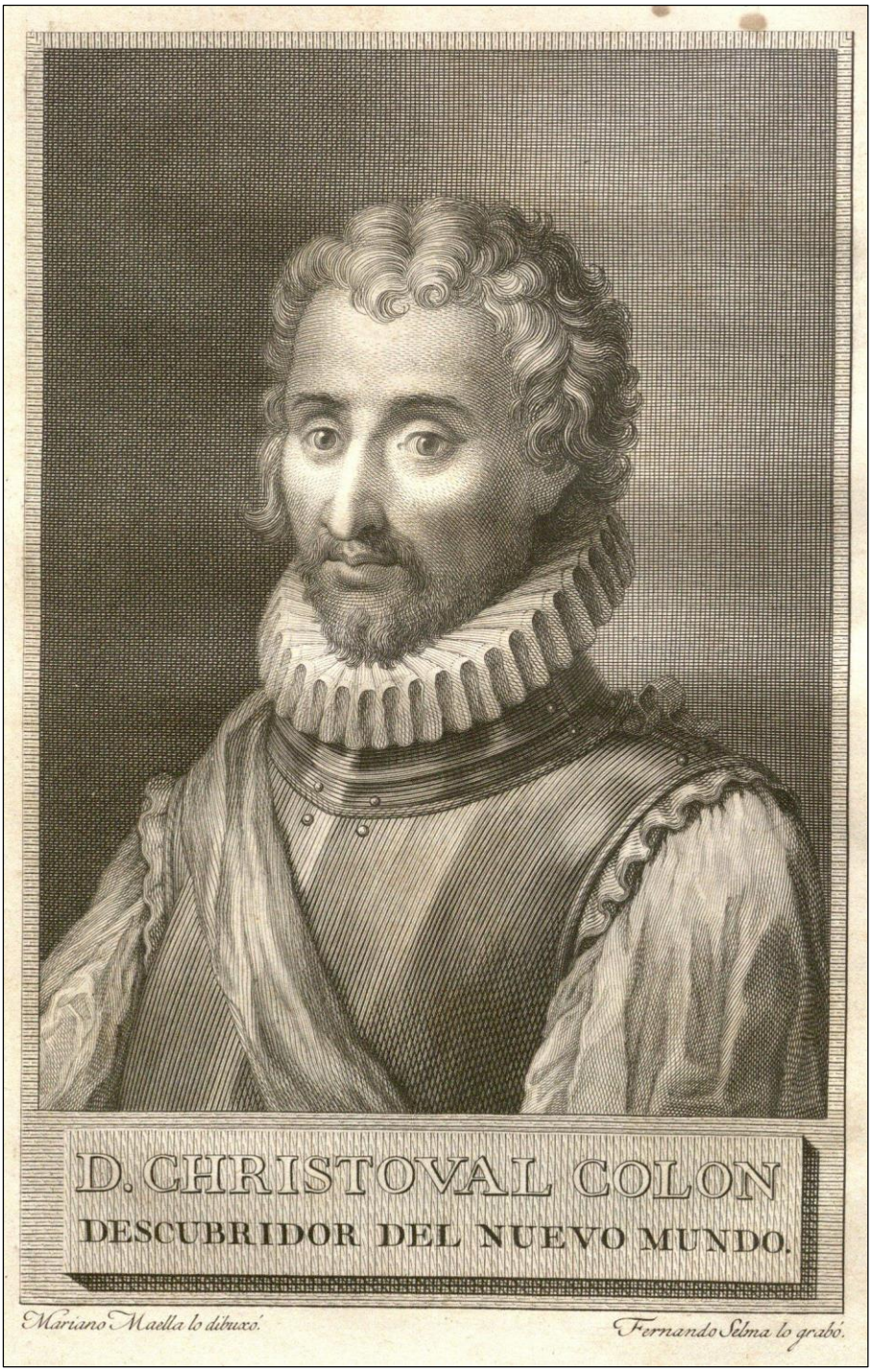
Amethyst

LANDFALL





From now on you'll be history
And we will glorify your name.
You will be a bust …
In the Hall of Fame! (MAYOR OF OZ & MUNCHKINS)

ADMIRAL OF THE OCEAN SEA

Juan Bautista Muñoz (1745-1799). *Historia del Nuevo-Mundo*. En Madrid: por la viuda de Ibarra, 1793. Tomo 1 (no more published) *D1824*

Spanish historian and philosopher Muñoz received a commission in 1779 from Charles III of Spain to write a book about the discovery and conquest of the West Indies. He completed volume 1, up to 1500, but publication of further volumes was prohibited by the Spanish government: the work was considered a little *too* enlightened and truthful; to fellow historians it was notable as well for its clarity and elegance of style.

This portrait of Columbus was engraved after the copy by Maella Mariano Salvador (1739-1819) of the original known as the Berwick y Liria portrait.

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Gold

Flowers grow everywhere, three or four times life-size … (STAGE DIRECTIONS)

OUR STATE FLOWER ON THE HAUNTED PRAIRIE

John Miller (1715-1790?): *Illustratio systematis sexualis Linnaei*. Frankfurt am Main: apud Varrentrapp et Wenner, 1804. *Linnaeana H4*

This sunflower *Helianthus annuus*, native to Mexico and Peru, is from the rare German edition of Johann Sebastien Müller's treatise elucidating Carl Linnaeus's system for the classification of plants. It contains 108 hand-colored plates. Müller was born in Germany, settled in England and changed his name to John Miller. Like the sunflower -- whose seeds are nuts, botanically

speaking – his own seed were many: he produced 27 offspring. One wonders how many of the Millers in the Sunflower State might be descended from the Flower Miller.

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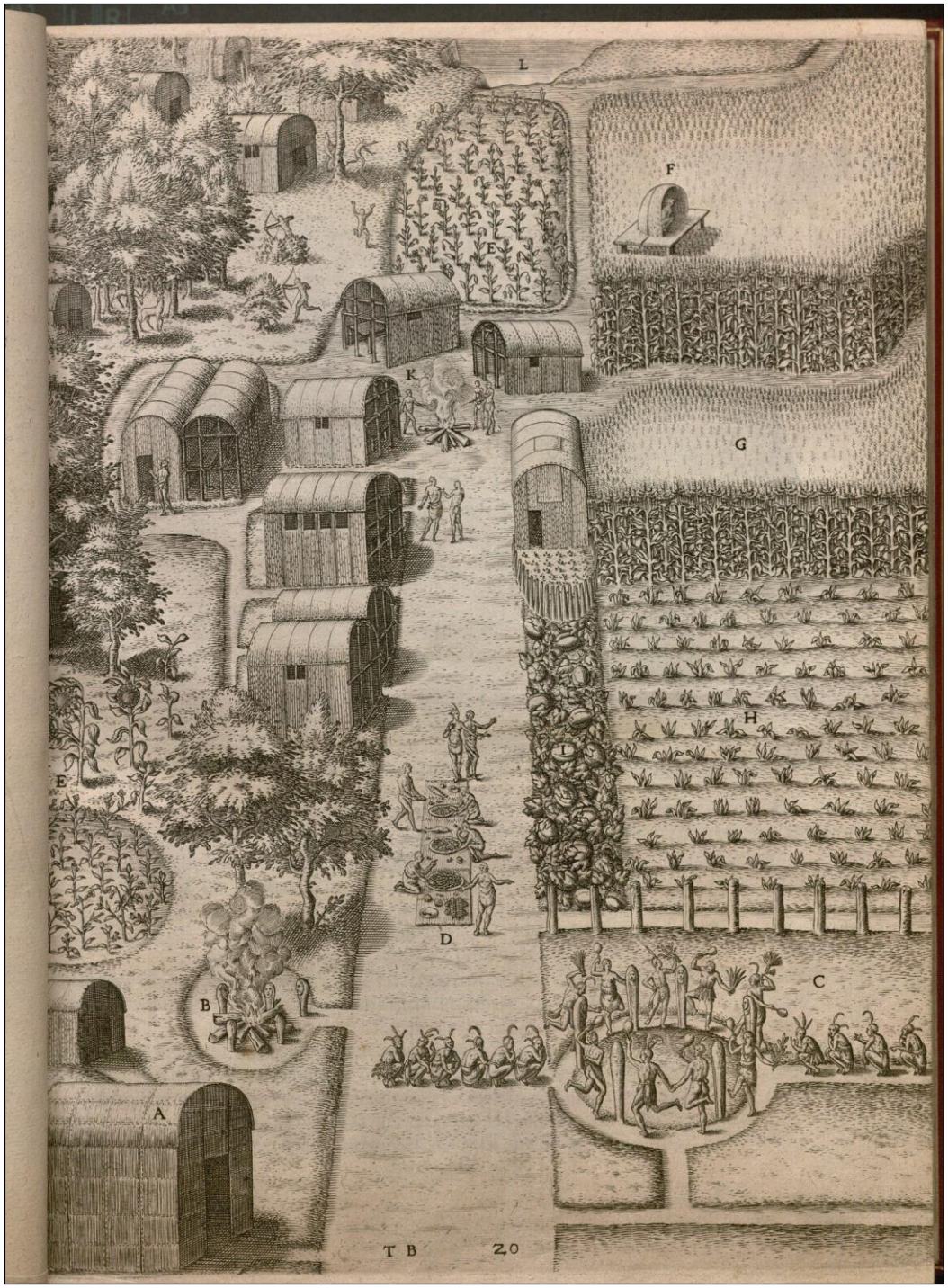

Don't be silly, Toto. Scarecrows don't talk. …

Wonderful! Why, if our scarecrows back in Kansas could do that, the cows'd be scared to pieces! (DOROTHY)

SUCCOTASH

Theodor de Bry (1528-1598): *Wunderbarliche, doch warhafftige Erklärung von der Gelegenheit und Sitten der Wilden in Virginia.* Gedruckt zu Franckfort am Mayn: bey Johann Wechel, in Verlegung Dieterich Bry, 1590. 4 volumes. Vol. 1, America, pt. 1. *Summerfield E730*

A human scarecrow – not from Oz *or* Kansas – sits in a blind at F (upper right) in this depiction of the town of Secota situated in present-day North Carolina. Because he was human he could probably dance like Ray Bolger; and the scarecrow from Oz, if he only had a brain, could probably speak Secotash.

A brief and true report of the new found land of Virginia, written by Thomas Hariot (1560-1621), was published in London in 1588 and is known in only a few copies. It is the earliest book in English devoted entirely to any part of what is now the United States. Hariot was author, astronomer, and Sir Walter Raleigh's mathematical tutor, and in this latter capacity spent almost a year in the Virginia colony. Hariot's book was the first work selected by Frankfurt engraver De Bry for his famous series known as the Great Voyages, illustrating the wonders of the New World.

The earliest travelers' accounts to reach Europe were almost unanimously in praise of New World crops which were for the most part quite distinct from those of the Old World. But the differences were often obscured in these reports by the use of Old World names: e.g., maize was often referred to as "wheat" and other grains, and American beans and squashes were given Old World monikers as well.

In this view of Secota, the sections marked E at left near the sunflowers, and at top, are for the cultivation of tobacco (uppówoc); F and G are easily recognizable as fields of maize or Indian corn, and near center at I are squashes.

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The two look very small and forlorn against the immensity of the prairie, which spreads out in every direction. (STAGE DIRECTIONS)

YOU HAVE TO GO TO GREAT PLAINS TO FIND IT

Johann Daniel Meyer (1713-1752): *Angenehmer und nützlicher Zeit-Vertreib mit Betrachtung curioser Vorstellungen allerhand kriechender, fliegender und schwimmender… Thiere.* Nürnberg: Gedruckt bey Johann Joseph Fleischmann, 1748-1756. 3 volumes in 2. Vol. 2, Gedruckt bey Andreas Bieling, 1752. *Ellis Aves H62*

The rabbits in this plate are NOT the native American critters known as High Plains jackalopes. *Real* jackalopes have jackrabbit bodies and pronghorn horns, so you can see by comparison with the pronghorn picture here that these are funny-bunnies. What we have here in a hand-colored engraving by miniature painter J.D. Meyer, are not real jackalopes but real "horned" rabbits, German ones in this case, the bunnies thought to be behind the jackalope hoax as well as the legends of a similar beast in European folklore.

For the full story behind the hoax and a view of mounted specimens of the cottontail *Sylvilagus floridanus*, the only species that carries these "horns" in the wild, go take in the "Jackalopes: history of a hoax" exhibit at KU's Museum of Natural History.* The cause of the protuberances, benign skin tumors not made of horn or bone at all, is a virus called Shope's Papilloma DNA virus. It occurs in Africa, Europe, and here on our Great Plains. In the U.S. as early as 1901, reports, drawings, and photographs began to appear in magazines and textbooks and in 1933 two biologists published an explanation for the phenomenon (minus the bit about DNA, its discovery not yet on the horizon). Now that we have our eyes trained to look for images of this fascinating Thumper, we keep finding him in the older European literature housed here.

*The "Jackalopes: history of a hoax" exhibit is no longer on view but a taxidermy specimen with the growths can be seen on the 6th floor in a "Natural curiosities" exhibit.

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Scoria- Kansas Mesa, near Colbran, Colorado

It's always best to start at the beginning. (GLINDA)

AMERICA'S EARLIEST MEDICAL BOOK

Martin de la Cruz (16th century): *The Badianus manuscript (Codex Barberini, Latin 241),* Vatican Library: an Aztec herbal of 1552. Introduction, translation and annotations by Emily Walcott Emmart with a foreword by Henry E. Sigerist. Baltimore: Johns Hopkins Press, 1940. *E369*

The Badianus manuscript, *Libellus de medicinalibus Indorum herbis*, was rediscovered in 1929 in the Vatican Library in Rome. It is the earliest known American herbal, the earliest complete medical text, and the only medical text known to be the work of the Aztec Indians. Like its Old World counterparts, it includes animal and mineral as well as plant remedies. The manuscript was composed at about the time of the Spanish Conquest by Aztec physician Martin de la Cruz, and translated by another Aztec, Juan Badia, both students at the College of Santa Cruz at Tlaltelolco, Mexico, the first college founded for Indians. This 1940 facsimile is the manuscript's first appearance in printed form.

At the red arrow is the first known illustration of Tlapalcacauatl (*Theobroma cacao)*, the source of chocolate. For many of the illustrations in the manuscript it is not only difficult, but impossible to determine botanical identity, and only by comparison with the description and nomenclature in Hernandez's *Rerum medicarum* have we been able to decipher them. The *Bourreria huanita*, or Yzquixochitl, popcorn flower (green arrow), was one of the most popular Aztec remedies: its flowers were reputed to cure toothache and chest ailments, aided digestion, and were added to cocoa for flavor.

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This is the first scene of Dorothy's delirium. Up to now, nothing is shown that hasn't actually happened in real life. (STAGE DIRECTIONS)

IN THE MERRY OLD LAND OF AA'S

Pieter van der Aa (1659-1733): *Icones arborum, fruticum et herbarum exoticarum*. Lugduni Batavorum: apud Petrum vander Aa, circa 1720. *CK58*

Of all the novel and unbelievable animals encountered by the first Europeans in the New World, the sú, or súccarath, was the most elusive, a now-you-see-it-now-you-don't kind of critter of the ilk we all hope and fear we'll run into on our first foray into the Haunted Forest with a camcorder, like the kids of the Blair Witch Project.

But this sú, said to inhabit Patagonia in South America, was as large as the imagination of the travellers who saw it, and like her sister-products of convergent evolution, the Nessie of Loch Ness and the ubiquitous unicorn to say nothing of North America's Big-Foot, no one has ever captured her – dead *or* alive.

This splendid volume of engraved plates (there is only one leaf of text) depicts natural curiosities of the plant and animal kingdom from around the world. A full eye-witness account of the sú can be found in our collections in Edward Topsell's *Historie of foure-footed beasts*, 1607.

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If I ever go looking for my heart's desire again, I won't look any further than my own backyard. (DOROTHY)

PASSING THROUGH RALPH NICHOLSON ELLIS ISLAND: A CITIZENSHIP QUIZ

Many folks born in the New World have had the experience of discovering a newly naturalized citizen who knows more of the basic facts of American history and natural history than *they* do. We've set up this fill-in-the-blanks quiz to see whether you qualify for citizenship in the New World (*answers at end of text)*

And if you really want to bone up and get your GREEN card you can come in and learn almost everything you ever wanted to know about the early centuries of New World biology, especially ornithology, botany and herpetology. Over half the seventy-some volumes displayed in this exhibition are from the Ellis Collection of literature pertaining to natural history; it came

to KU through the generosity of Ralph Nicholson Ellis (1908-1945) and formed the foundation of the Department of Special Collections.

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Take your army to the Haunted Forest and bring me that girl and her dog … Now fly – fly! Fly! Fly! (WICKED WITCH TO FLYING MONKEYS)

OUT FOR BLOOD? YOU MUST BE BATS!

The zoology of the voyage of H.M.S. Beagle …during the years 1832 to 1836. Edited and superintended by **Charles Darwin (1809-1882).** London: Smith, Elder; Printed by Stewart and Murray, 1839-1843. 5 parts. Part 2: *Mammalia*, 1839, described by **George R. Waterhouse (1810- 1888)**. *Ellis Aves E122*

Ah ha! But what kind of bat? Few people anywhere realize that there are upwards of 250 species of bats in Latin America (accounting for half of all mammal species in the area), or that most are beneficial. Only three species are vampires (fewer than one bat in many thousands) and only one of these, *Desmodus rotundus,* [COMMON NAME? Reader, FILL IN THE BLANK] causes

serious economic problems. Overall, the positives outweigh the negatives of these animals.

A single bat eats 500 insects, including mosquitos, an hour; he disperses seeds, accounting for 95% of forest regrowth in clearings; he pollinates flowers – many of which are dependent on a single bat species – of plants of great economic importance for markets in everything from avocados to tequila. And the vampires themselves have a specialization of potentially great medical importance; the ability of two of the species to produce nontoxic anticoagulants.

Homo sapiens was mutilating his ilk and drinking his victims' blood and spreading vampire legends long before he discovered a blood-eating bat. Earliest reports of the latter are from the 16th century, though the name "vampire" got incorrectly applied to a number of other bat genera as well, mostly fruit and nectar eaters. Ignorance of bats is so widespread that even Latin America's true vampires were not described scientifically until the 20th century. Ever since the common vampire, shown here, was discovered to be the vector for a rabies outbreak in Trinidad in the 1930s, indiscriminate anti-vampire campaigns have resulted in the burning, dynamiting, poisoning, and destruction of caves and other habitats of highly beneficial bat species.

Another common misconception about vampire bats is the manner in which blood is taken: they do not *suck* blood from their prey, but lick up the drops made by a slice into the superficial skin layers, with teeth so razor sharp that a sleeping animal victim is not awakened.

English naturalist and energetic curator of the Zoological Society of London, George Waterhouse, turned down an invitation to accompany Charles Darwin on the voyage of the *Beagle*, the celebrated journey during which were made the collections and observations that led to the theory of evolution by natural selection, but upon the *Beagle*'s return Darwin gave Waterhouse the honor of describing the Mammalia and the Coleoptera (beetles) from the voyage.

A DIGRESSION: Like claims for a High Plains Jackalope, the stories of human vampirism may have a basis in scientific fact, although some folklorists dispute the theory behind the claim. Victims of a rare blood disease called porphyria are extremely sensitive to sunlight, and their skin can be disfigured by sores, scars, and excessive hairiness; skin around the mouth tends to

tighten so that teeth look like fangs. Because the cause of the disease is a deficiency of heme, one of the constituents of red blood cells, a craving for a blood-fix might be natural.

The symptoms can be precipitated by stress, and since the disease runs in families, the presence of others with the disease might be enough to bring on one's own latent symptoms. A chemical in garlic also is said to aggravate the signs, so in the past, those without the ailment figured they should be able to ward off evil by wearing a garlic necklace. Kinky. And yes, fortunately porphyria is treatable in these medically post-medieval times. *Un*fortunately, human attitudes about bats haven't changed much.

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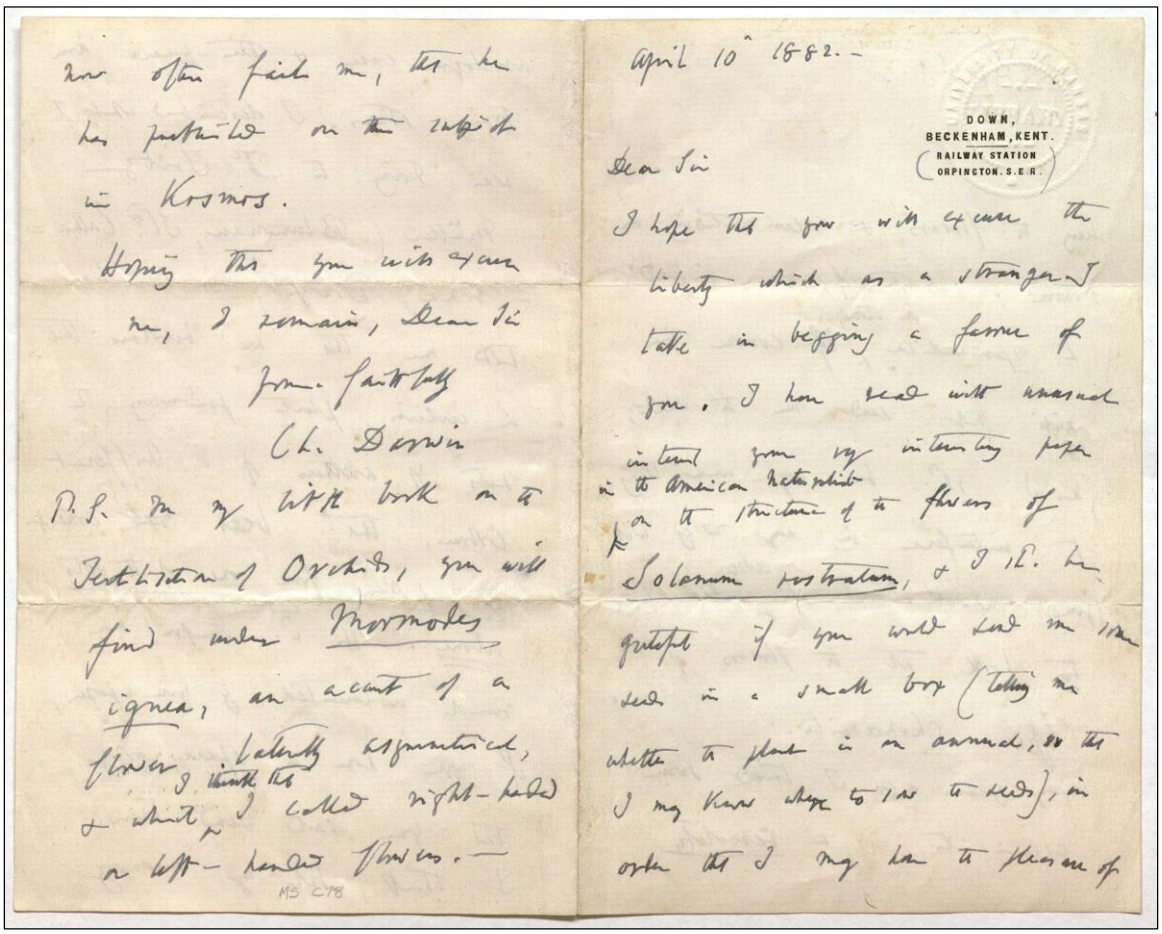

April 10th 1882.–

DOWN,
BECKENHAM, KENT.
RAILWAY STATION
ORPINGTON. S.E.R.

Dear Sir

I hope that you will excuse the liberty which as a stranger I take in begging a favour of you. I have read with unusual interest your very interesting paper in the American Naturalist on the structure of the flowers of Solanum rostratum, & I shd be grateful if you would lend me some seeds in a small box (telling me whether to plant in a warmed, so that I may know shape to use the seeds), in order that I may have the pleasure of

now often fails me, that he has published on the subject in Kosmos.

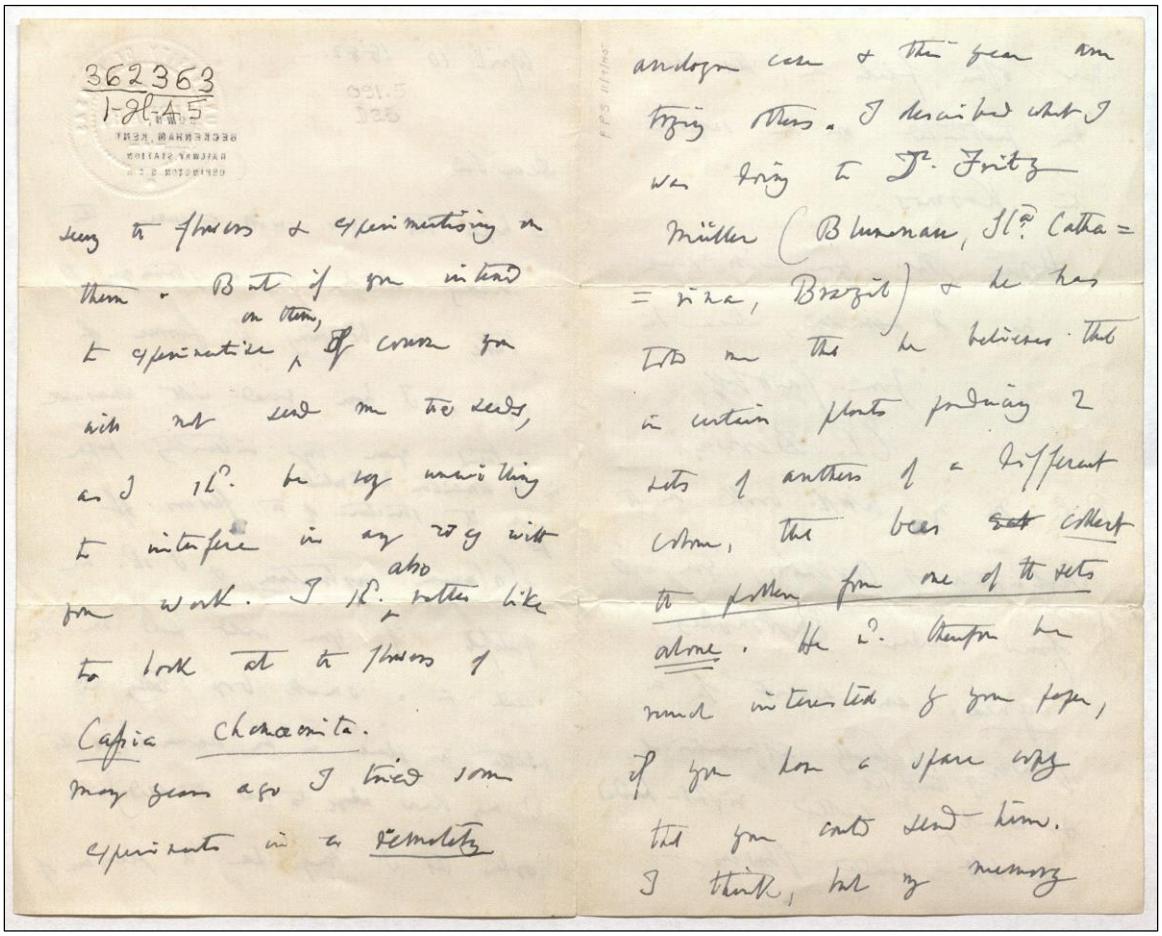
Hoping that you will excuse me, I remain, Dear Sir

Your faithfully

Ch. Darwin

P.S. In my little book on the Fertilisation of Orchids, you will find under Mormodes ignea, an account of a flower, laterally asymmetrical, & which I think that I called right-handed or left-handed flowers.–

MS C78



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1-28-45

seeing the flowers & experimenting on
them. But if you intend
to experimentize on them, of course you
will not send me the seeds,
as I do not want anything
to interfere in any way with
your work. I do also rather like
to look at the flowers of
Cassia chamaecrista.
Many years ago I tried some
experiments in a kitchen garden

and again case & the gran are
trying others. I described what I
was trying to Dr. Fritz
Müller (Blumenau, Prov. Catha-
rina, Brazil) & he has
told me that he believes that
in certain plants producing 2
sets of anthers of a different
form, the bees ~~set~~ collect
the pollen from one of the sets
alone. He is therefore much
interested in your paper,
if you have a spare copy
that you could send him.
I think, but my memory

We hear he is a Whiz of a Wiz
If ever a Wiz there was. (DOROTHY AND SCARECROW)

A NATURAL SELECTION FOR SUCH AN EXHIBIT

(Bibliographical citation at end with answers to quiz) *MS C78*

This letter was written nine days before the death of the writer on April 19, 1882, and may well be his last scientific communication; it does not appear in any volumes of his published letters, and finally appeared in print in the *Transactions of the Kansas Academy of Science*, vol. 48, no. 3, 1945. The man to whom it was written, James E. Todd, had been a professor of natural science at Tabor College in Iowa, when his paper in *The American naturalist*, referred to in the letter, was published. From 1907 until his death in 1922 Professor Todd was on the geology staff at Kansas University.

The seeds requested by the writer are those of two New World plants, one the nightshade called Buffalo burr, *Solanum rostratum*, and the other the sensitive pea, *Cassia fasciculata* or *C. nictitans*. The writer is none other than [reader, FILL IN THE BLANK]

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Come along, Dorothy, you don't want any of* those *apples. (SCARECROW)

NAME THAT NUT

Pierre Joseph Buc'hoz (1731-1807): *Le jardin de Eden*. A Paris: chez l'auteur, 1781-1784. 2 volumes. Vol. 1. *Ellis Omnia H55*

This native South American evergreen *Anacardium occidentale* belongs to the same family as poison ivy, poison oak, and poison sumac, and true to family form produces an irritating oil, cardol, that can cause a rash in susceptible individuals, but this species has uses as an industrial lubricant, an insecticide, and in the production of plastics. The fleshy "apple" is sour but edible in the form of jams and jellies, and in Brazil is fermented into wine. The part we know and love is the fruit or nut, the single seed formed inside a comma-shaped, double-walled shell protruding from the apple.

In older roasting methods the outer shell would burst open and release the oils, which caught fire, giving off fumes that could do grave damage to eyes and skin. Today the nuts are roasted in special cylinders that dispel the poisonous properties, but the inner shell is still removed by hand. Just as it is difficult to imagine Hungarian goulash without our native American hot peppers, or Chinese food without our peanuts, so we would miss this delicious nut that is the characteristic ingredient of many chicken and vegetable dishes of southern India, to say nothing of its use in American cuisine. We call it [reader, FILL IN THE BLANK]

French physician and naturalist Buc'hoz produced a great many works of natural history, but gained a reputation for inaccuracy and lack of understanding of his subject. The deep purple used for the apples and nuts in this plate may be an example of that 'inaccuracy', as the apple is universally described as red or yellow in color, and the nut is green until it matures into a shade of strawberry-roan.

L'Heritier de Brutelle unkindly named the evil-smelling *Buchozia foetida* after Buc'hoz – the genus name was subsequently changed, wiping out even those fifteen minutes of infamy – nevertheless with its 200 engraved plates of the plants of the Trianon Gardens in Paris this is still one of the most beautiful of French flower books.

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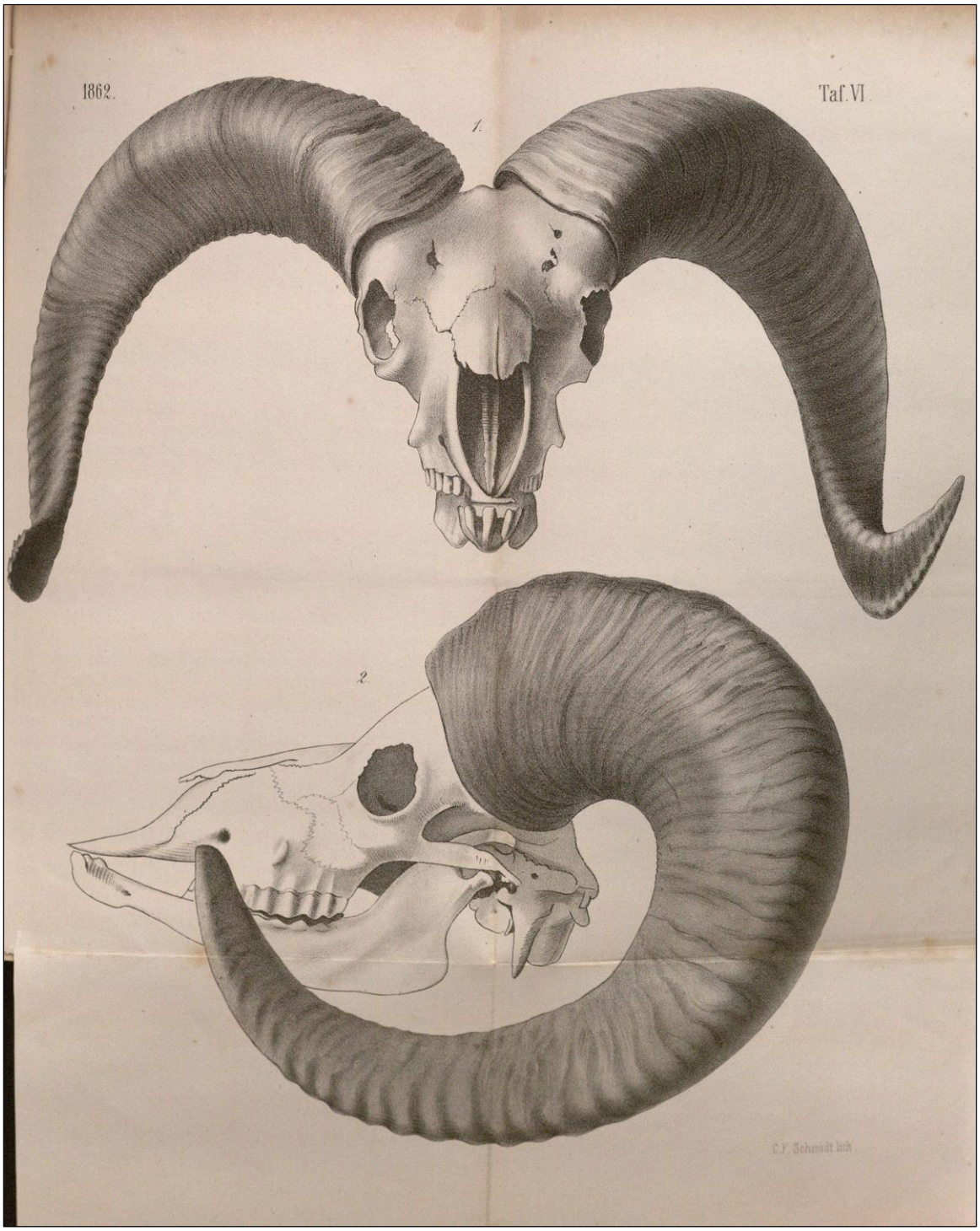

TIN MAN: ***Why don't you try counting sheep?***
COWARDLY LION: ***That doesn't do any good – I'm afraid of 'em***.

ROLL OUT THE BARREL CACTUS

Maximilian, Prince von Wied (1782-1867): *Verzeichniss der auf seiner Reise in Nord-Amerika beobachteten Säugethiere.* Berlin: Nicolaische Verlagsbuchhandlung (G. Pathey), 1862. *Ellis Omnia C833*

This animal, shown without his woolies, is without a doubt the most coveted prize of the Great American Big Game Hunter. These horns have been recorded at almost fifty inches around the outside curve, and almost seventeen inches in circumference at the base.

The *Ovis canadensis* [COMMON NAME? reader, FILL IN THE BLANK] ranges from southern Alberta and northeastern British Columbia south through the Rocky Mountains to northern New Mexico. To the south and west periphery of range, subspecies (recognizable by larger ears) butt down water-storing cacti such as the barrel cactus to get moisture (a *spiked* drink?) A second species of this mammal, *O. dalli*, inhabits the mountains of Alaska, the Yukon, and northern British Columbia.

"Prince Max" of Wied – who is represented twice in this exhibition – journeyed to the U.S. in 1832 to explore and to compare the natural history of North America to that of South America, where he had taken part in an earlier expedition to Brazil, 1815-1817. The accounts of his North American journey are considered second in importance only to those of Meriwether Lewis and William Clark for the Trans-Mississippi Western region.

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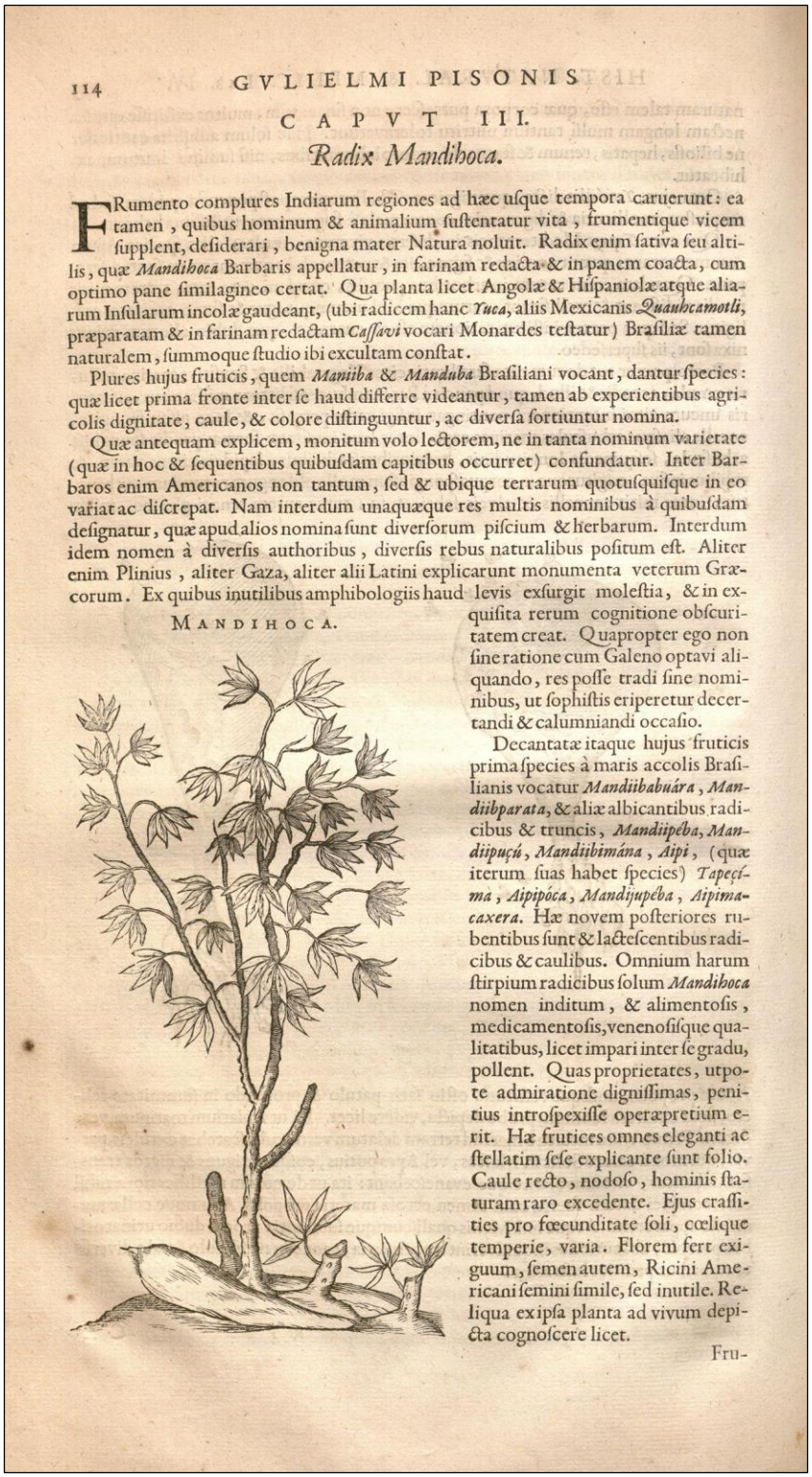
Amethyst



114 GVLIELMI PISONIS

CAPVT III.

Radix Mandihoca.

FRumento complures Indiarum regiones ad hæc usque tempora caruerunt: ea tamen, quibus hominum & animalium sustentatur vita, frumentique vicem supplent, desiderari, benigna mater Natura noluit. Radix enim sativa seu altilis, quæ *Mandihoca* Barbaris appellatur, in farinam redacta & in panem coacta, cum optimo pane similagineo certat. Qua planta licet Angolæ & Hispaniolæ atque aliarum Insularum incolæ gaudeant, (ubi radicem hanc *Yuca*, aliis Mexicanis *Quauhcamotli*, præparatam & in farinam redactam *Cassavi* vocari Monardes testatur) Brasiliæ tamen naturalem, summoque studio ibi excultam constat.

Plures hujus fruticis, quem *Maniiba* & *Manduba* Brasiliani vocant, dantur species: quæ licet prima fronte inter se haud differre videantur, tamen ab experientibus agricolis dignitate, caule, & colore distinguuntur, ac diversa sortiuntur nomina.

Quæ antequam explicem, monitum volo lectorem, ne in tanta nominum varietate (quæ in hoc & sequentibus quibusdam capitibus occurret) confundatur. Inter Barbaros enim Americanos non tantum, sed & ubique terrarum quotusquisque in eo variat ac discrepat. Nam interdum unaquæque res multis nominibus à quibusdam designatur, quæ apud alios nomina sunt diversorum piscium & herbarum. Interdum idem nomen à diversis authoribus, diversis rebus naturalibus positum est. Aliter enim Plinius, aliter Gaza, aliter alii Latini explicarunt monumenta veterum Græcorum. Ex quibus inutilibus amphibologiis haud levis exsurgit molestia, & in exquisita rerum cognitione obscuritatem creat. Quapropter ego non sine ratione cum Galeno optavi aliquando, res posse tradi sine nominibus, ut sophistis eriperetur decertandi & calumniandi occasio.

MANDIHOCA.

Decantatæ itaque hujus fruticis prima species à maris accolis Brasilianis vocatur *Mandiibabuára*, *Mandiibparata*, & aliæ albicantibus radicibus & truncis, *Mandiipéba*, *Mandiipuçú*, *Mandiibimána*, *Aipi*, (quæ iterum suas habet species) *Tapeçíma*, *Aipipóca*, *Mandijupéba*, *Aipimacaxera*. Hæ novem posteriores rubentibus sunt & lactescentibus radicibus & caulibus. Omnium harum stirpium radicibus solum *Mandihoca* nomen inditum, & alimentosis, medicamentosis, venenosisque qualitatibus, licet impari inter se gradu, pollent. Quas proprietates, utpote admiratione dignissimas, penitius introspexisse operæpretium erit. Hæ frutices omnes eleganti ac stellatim sese explicante sunt folio. Caule recto, nodoso, hominis staturam raro excedente. Ejus crassities pro fœcunditate soli, cœlique temperie, varia. Florem fert exiguum, semen autem, Ricini Americani semini simile, sed inutile. Reliqua ex ipsa planta ad vivum depicta cognoscere licet.

Fru-

We get up at twelve and start to work at one,
Take an hour for lunch, and then at two we're done,
Jolly good fun. (CABBY AND CITIZENS OF OZ)

JUST DESSERTS

William Piso (1611-1678): *De Indiae utriusque re naturali et medica*. Amstelaedami: apud L. et D. Elzevirious; Amstelodami: apud L. Elzevirios, 1658. *Summerfield E734*

It is not generally realized that the roots of *Manihot esculenta* are as important a staple in the tropics – of Africa and Asia, as well as the Americas, where it is eaten primarily in the form of bread – as are corn and potatoes in northern climes. There are both sweet and bitter varieties depending on the amounts present of prussic acid, a poisonous cyanide compound that serves as a defense mechanism for the plant and must be removed before it is processed as food. Here in the North we eat manioc or cassava in dessert form as a pudding, under a different name altogether: [reader, FILL IN THE BLANK].

In a world-wide critical shortage of carbohydrates this would be the root of choice. The leaves are sometimes boiled and eaten as a vegetable, and an alcoholic drink is made from the root. The plant is believed to be native to Brazil.

This volume comprises Piso's classic study of tropical medicine and Georg Marggraf's extensive flora and fauna of Brazil. This second much enlarged edition is even more copiously illustrated than the first. Piso is famous for first bringing ipecacuanha to the world's attention, as well as for his accurate description and differentiation of yaws and syphilis. Like Hernandez he is one of the pioneers of New World tropical medicine.

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Crinoid stems - Southeastern Kansas

FULGORA LANTERNARIA.

CHARACTER GENERICUS.

Caput fronte producta, inani.
Antennæ infra oculos: articulis 2; exteriore globoso majore.
Rostrum inflexum.
Pedes gressorii.

Lin. Syst. Nat. p. 703.

CHARACTER SPECIFICUS, &c.

FULGORA fronte ovali recta, alis lividis; posticis ocellatis.

Lin. Syst. Nat. p. 703.

LANTERNARIA. *Mer. Sur.* t. 49.

Rösel. Inf. 2. gryll. t. 28, 29.
Fabr. Spec. Inf. vol. 2. p. 313.

Vix aliud in Insectis videtur mirabilius luce illa phosphorea, quam certæ species emittunt. Inter insecta Europæa, Lampyrides, (quæ ad *Coleoptera* Linnæi referuntur) maxime hac qualitate pollent. In America est species Elateris, cui multa inest vis lucem in tenebris spargendi. Scolopendra etiam vulgaris Europæa, (quæ Scolopendra electrica Linnæi) manifeste noctu lucet, præsertim

You humbug! (SCARECROW TO WIZARD)
Yeah! *(COWARDLY LION AND TIN MAN)*
Yes, that's exactly so. I'm a humbug*.* *(WIZARD)*

A BUG TO GIVE YOU THE JITTERS

George Shaw (1751-1813): *The naturalist's miscellany.* London: Printed for Nodder and Co., 1789-1813. 24 volumes. Vol. 1, 1789-1790. *Ellis Aves C1485*

You not only may not know the common name of this all-American insect *Fulgora laternaria*, you may not know that if a young girl is "stung" by it she must have sex with her boyfriend within twenty-four hours or die from the "bite". (Obviously it's not quite clear whether the wound inflicted is a sting or a bite, and that just goes to prove that sex education is a badly neglected area of our school system. It's also unclear whether the perpetrator of this folk-wisdom is male or female).

Although the Spanish name for this beast means "alligator-butterfly", it is neither alligator *nor* butterfly, but a member of the Homoptera, a suborder of the Hemiptera or true bugs. It has a five inch wingspan and when oriented vertically on a tree it does resemble a lizard; the snout is certainly alligator-like. Superficially it resembles the owl butterfly because of the bright yellow spots on its wings that show up vividly when it flies. When disturbed it makes a rapping sound with its head and as a last resort can emit a musky skunk-like smell. Yet with all these hints, ocular, olfactory, and aural, for a possible English common name at least as apt as the Spanish, we name it on the basis of a characteristic neither seen, smelled, nor heard, and the false belief that its head glows in the dark, which it doesn't. We're talking about the [reader, FILL IN THE BLANK].

The Ellis Collection contains a complete copy of *The naturalist's miscellany*. It was issued in 267 monthly parts over a twenty-four year period; the plates were engraved and hand-colored by Frederick Nodder. Although not a museum man or researcher himself, Shaw the naturalist, physician, and writer was a prominent member of the London scientific community and was ahead of his time in his interest in public education; he sought to interest the world in science through lectures and encyclopaedic works such as the *Miscellany*.

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Iron pyrite

I'm afraid there's no denyin'
I'm just a dandelion,
A fate I don't deserve! (COWARDLY LION)

GONE WITH THE WIN

Jean Gourdon (1824-1876): *Nouvelle iconographie fourragère*. Paris: P. Asselin, 1871. 2 volumes. Vol. 2: Atlas. *D1390*

This tuber is a diabetic's delight: no, it's not a turnip, so quit making like Scarlet O'Hara. Although it might well have been consumed in unusual quantities during the Civil War, it's certain that this native of North America was welcomed by the starving when it arrived in Europe after the Thirty Years War (1618-1648). Known in France as the *topinambour* or *girasol*, its tubers are reasonably nutritious and because they're not easily damaged by frost are more reliable than their fellow tuber the potato (but like the turnip, unrelated botanically).

Even here in Kansas the tubers planted in early spring can be dug up at leisure in the autumn and winter. My Kansas grandmother would thin-slice these crispy-as-a-radish critters into a Depression glass bowl filled with salad greens and feed them to her finicky New Jersey-born granddaughter who only much later learned to appreciate them. G-ma also baked them or added them to the "stone soup" when extra farmhands were expected for dinner at harvest-time. And they sweeten the pot for diabetics because of the presence of inulin, a sugar that diabetics can stomach.

The plant proper grows on a stout stem up to six feet high, and if you're now thinking that it looks like our Kansas sunflower, it *is* in the same genus, Latin name *Helianthus tuberosus*. The folks over the border in the northern neck of the prairie call it the Canada potato, but in the lower 48 it's a real misnomer: We call it [reader, FILL IN THE BLANK]. Unless you have a Kansas or a Plains Indian grandma, you might not *have* a name for it or have ever even tasted it. Heck, even Scarlett O'Hara might have liked it if she'd tried it.

***

Are you hinting my apples aren't what they ought to be? (FIRST APPLE TREE)

LOVE APPLES

Johann Hieronymus Kniphof (1704-1763): *Botanica in originali seu Herbarum vivum.* Hallae Magdeburgicae, 1757-1767. 12 volumes. Centur. 4, 1758. *Linnaeana E15*

The first fruits (berries, botanically speaking) of these vines, to be eaten in Europe, were probably yellow varieties: "golden apples" the Italians called them. The Italians loved them, but the rest of the world needed more convincing of their merits because they were thought to be either poisonous or aphrodisiac "love apples", not too surprising considering their resemblance to other dangerous members of the same plant family.

At any rate, as late as the 19th century in America Dr. George Washington Carver, interested in improving nutrition among the poor, got up on a stage and ate these in public in order to prove that they were *not* poisonous.

In the annals of medical mysteries there was a case involving one of these 'berries' that killed off some folks; mystery solved when it was discovered that its stems had been spliced to the stems of one of the poisonous members of the family, jimsonweed, not with any mal-intent (pun intended), apparently, just the desire for bigger, better, and juicier.

They should have waited; genetic engineers are now splicing away, but at the genetic level. But … *caveat emptor*: just prior to the mounting of this exhibit the first President Bush announced that the government would allow the sale, without government testing – by 1993 – of the Flavr Savr, courtesy of Calgene, Inc. of Davis, California. Long story short, the experiment failed. The name of this common berry is [reader, FILL IN THE BLANK].

This unusual-looking botany book is one of the earliest, if not the first work of any extent, to use the process known as nature printing, by which a plant is laid out flat, blackened with printer's ink, and placed between two pieces of paper to which pressure is applied. The ink imparts an impression of veins and fibers which is then colored by hand. Like a number of the works shown in this exhibition, this is one of considerable bibliographical complexity and it exists in fewer than fifteen copies, not all of which are colored and no two appear to be alike. This *herbarum vivum* is notable for being perhaps the first

botanical plate book to cite Linnaeus's *Species plantarum*, 1753, in which binomials were first used consistently for naming plants.

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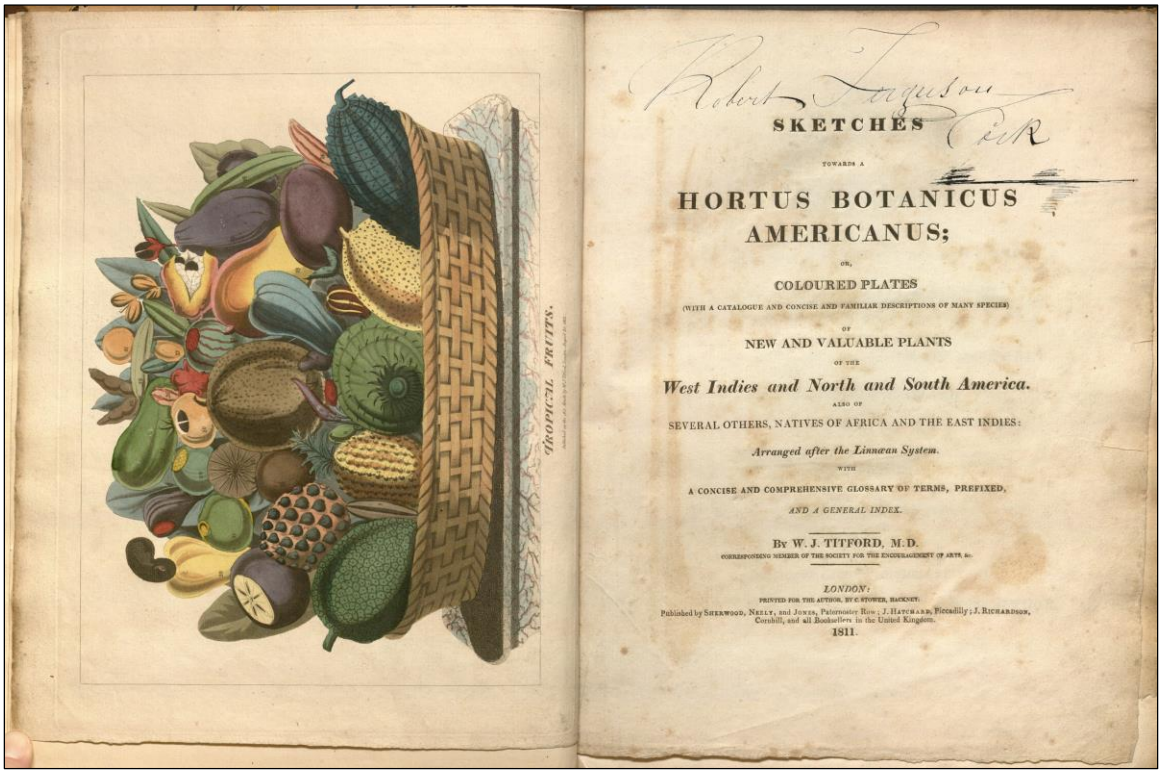

Henry very reluctantly puts Toto in the basket Miss Gulch is holding.
(STAGE DIRECTIONS)

TOTO FRUTTO

William Jowit Titford (1784-1820s): *Sketches towards a Hortus botanicus Americanus*. London: Printed for the author by C. Stower; published by Sherwood, Neely, and Jones; J. Hatchard; J. Richardson, and all booksellers in the United Kingdom, 1811-1812. *Linnaeana E6*

Prospectus:

On the First of October, 1811, *will be published by Subscription, in Royal Quarto, price to Subscribers*, 10*s*. 6*d*. *and to Non-Subscribers*, 12*s*.

NUMBER I.

(TO BE COMPLETED IN SIX NUMBERS)

OF

SKETCHES

TOWARDS A

HORTUS BOTANICUS AMERICANUS,

OR

Coloured Plates

OF MANY NEW AND VALUABLE

PLANTS OF THE WEST INDIES

AND

NORTH AND SOUTH AMERICA:

TO WHICH IS ANNEXED

A CATALOGUE OF THE PLANTS TO BE FOUND IN THOSE COUNTRIES,

And of many others, Natives of Africa and the East Indies, which have been, or might be introduced with advantage into the West Indies; with concise and familiar Descriptions, shewing their various, common and botanical Names, Places of Growth, Medical Virtues and General Uses, their Classes and Orders.

Arranged after the Linnæan System.

ALSO A

GLOSSARY OF BOTANICAL TERMS USED, AND A GENERAL INDEX.

By W. J. TITFORD, M. D.

Corresponding Member of the Society for the Encouragement of Arts, &c.

Subscriptions received by Messrs. Sherwood, Neely and Jones, Paternoster Row, by all respectable Booksellers in the United Kingdom, and at No. 1, Union Street, Bishopsgate Street, where Specimens of the Plates may be seen. A List of Subscribers will be printed with the last Number.

Address to the Public.

The Author, during a residence of many years in the Island of Jamaica, and a Tour through a great part of the United States of America, executed a number of Coloured Drawings of Plants from Nature, and collected information from the Natives of those climates respect-

For the bibliographer, Titford's *Sketches* presents a challenge, and is said to be a cataloger's nightmare: we haven't yet tackled it but the agony may be mitigated by the fact that we also have the only known copy of the prospectus,

shown here alongside it. It has the bookplate of Hungarian international financier and renowned collector of botany books, Arpad Plesch (1889-1974).

The prospectus is the kind of printed ephemeron that, like publishers' wrappers, often gets tossed, but that besides being intrinsically interesting can sometimes provide important evidence, especially for taxonomists trying to establish priority in nomenclature. Even title-pages will not always nail down the very day a first species description has appeared in print, but wrappers often will (the second date in the above citation comes from the wrappers of the last three parts, not the title-page) and prospectuses, too, often provide important dates and other information not findable elsewhere. The interest in our prospectus is that it may be unique. Unfortunately, our copy of the book lacks the errata slip.

There are eighteen hand-colored engravings herein plus the aquatint frontispiece showing an arrangement of tropical fruits in a basket. To ace this citizenship quiz, unload the basket and name the contents. One caveat: over one third of the fruits and vegetables in this basket are of *Old* World origin.

Answers to quiz and to contents of Titford's basket at end of exhibition

HOW DID YOU DO ON THE QUIZ? ARE YOU WORTHY OF LIVING IN THE HAUNTED FOREST?

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FAUNA

Box turtle belly shell - Argonia, Kansas

156 IOANNIS EVSEBII NIEREMBERGII

TLAQVATZIN.

CAPVT IV.

De animalibus manticatis, siue Tlaquatzinis.

NOn minùs admirãda fera, quam Indi vocant *tlaquatzin*. Antonius Herrera *taquatzin* dixit: recentes Hispani Scriptores corrupto nonnihil nomine *tlaquacum*, Cardanus *chiurcam*, siue *chuciam*, Stadenius *Seruoy*, Nomenclator *semi-vulpam*, seu *lopecopithecum*: Raphe Hamor in descriptione Virginiæ *apossumen* dixit; alij *aucham*, alij *sasapim*, alij *cerigonem* dixere, quia sic vocatur species vulpeculæ apud Brasiliam & Malucas, sed ea, de quâ exordium sermonis instituimus, etiam in Dariene & Floridâ reperitur. Animal est parui canis formâ & magnitudine, binos dodrantes longum, rostro tenui, prolixo atque depili, exili capite, tenuissimis mollissimisq; auriculis, ac pænè translucentibus, pilo longo & candido, sed circa extrema fusco aut nigro. Caudâ tereti, duos dodrantes longâ, & persimili colubrinæ, fuscâ, sed postremò candidâ, quâ mordicus &

Imposserous! (COWARDLY LION)

KANGAROOS ON MACHU PICCHU?

Juan Eusebio Nieremberg (1595-1658): *Historia naturae*. Antverpiae: ex Officina Plantiniana Balthasaris Moreti, 1635. *Summerfield E1105*

The late marsupialist John A.W. Kirsch was interviewed by a local (Peruvian) newspaper while on a collecting trip in South America back at the end of the 1960s. He described the kinds of animals he was looking for and was shocked to see the headline a few days later: KANGAROOS ON MACHU PICCHU.

While it's true that the mammal group we call marsupials includes the kangaroos, wallabies, wombats, koalas, and bandicoots that are usually associated with Australia, and that the New World once did boast a rich and diverse marsupial fauna, most of the New World forms are now extinct and, sad to say, there are no kangaroos on Machu Picchu.

The marsupial heyday began to end circa three million years ago when a land-bridge over the Isthmus of Panama provided for northern migration of animals including the ancestors of our familiar opossum, who dates back to around 35 million years ago and looks today pretty much the same as he did then. During the same period some of the northern placental mammals migrated south over the same land-bridge. Thus, for example, it appears that the placental sabre-toothed tiger from the North began to compete with the marsupial sabre-toothed tiger and soon put him on the road to extinction. But the marsupials are survivors nevertheless and the American opossum, the only one of the family in North America, is just one of seventy some opossum species to survive; the 'possum family is restricted to the New World so except for *Didelphis virginiana*, whose range extends from southern Canada into Central America, the rest of the family is restricted to Central and South America.

Earlier travel accounts and herbals had described the plants and animals of the New World, but Nieremberg's account was the first comprehensive natural history of the area, dealing primarily with Mexico and the West Indies. This illustration of the Virginia or American opossum is the earliest printed portrait of the earliest discovered (by Europeans, at least) marsupial *anywhere*.

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DES OYSEAVX, PAR P. BELON. 249

ſemblable au Coc d'Inde, ſinon que l'vne porte la creſte, & les barbillons rouges, qui au Coc d'Inde ſont de couleur de ciel. Il eſt tout arreſté que touts autheurs parlants du Coc d'Inde, que maintenõs eſtre *Meleagris*, ont dit quils ſont tachez de diuerſes madrures. Ces Cocs d'Inde ont vn toffet de poils durs, gros, & noirs en la poictrine, reſemblants à ceux de la queuë d'vn Cheual, deſquels ce ſeroit à *Meleagris.*

Meleagris en Grec, Gibber en Latin, Coc d'Inde en Francoys.

s'ſmerueillé que les autheurs anciens Latins & Grecs neuſſent point parlé. Toutesfois Ptolomee en la penultime table d'Aſie en à fait ſpeciale mention, le nommant Paon d'Aſie. Pline à eſcrit *Meleagris*, comme pour oyſeau de riuiere, duquel auons parlé au dernier chapitre du premier liure: c'eſt la cauſe que nous l'ayons eſcrit entre les oyſeaux, qui nous ſont incognuz: car nous pretendons qu'il vouloit entendre d'vn autre, que de noſtre Poulle d'Inde.

Du Coc de bois, ou Faiſan bruyant.

CHAP. XI.

IL y à telle diſtinction entre le maſle Coc de bois, & ſa Poulle, qu'entre noſtre Coc priué, & la Poulle. Ce n'eſt merueille ſi les habitants des villes ſituees aux pieds des monts, n'ont les Faiſants ſi communs, que ceux qui habitent en païs de plaine: qui toutesfois prenent grande quantité de Cocs de bois, qui nous ſont rares au plat païs de Fráce. La raiſon eſt que le naturel du Faiſan luy enſeigne viure plus commodement par le païs plat, qu'à la mó- *Coc de bois.*

If happy little bluebirds fly
Beyond the rainbow,
Why oh why can't I? (DOROTHY)

WE'RE OFF TO FEED THE GIZZARD

Pierre Belon (1517?-1564): *L'histoire de la nature des oyseaux*. Paris: on les vend … en la boutique de Gilles Corrozet, 1555. *Ellis Aves E14*

Even thought our American wild turkey *Meleagris gallopavo* is a bird, a flier he ain't, just like Dorothy. But as a ground dweller he is a very good runner, and he can fly well enough in short bursts to make it off the tarmac to roost in trees.

Native to our woodlands from southern Canada into Mexico, the turkey was domesticated in the Americas in prehistoric times. When it comes to the introduction of domesticated animals, it should be noted that the economic importance of coming from the Old World to the New (cow, sheep, horse, goat, and pig) far outweighed that of New World beasts headed eastward: the turkey – and the codfish – were the only exports of any import.

This is the first printed illustration of the wild turkey in one of the most important of all ornithological books, and is the earliest volume shown in this exhibit. It is based on direct observation and original drawings and is notable especially for two woodcuts illustrating the homologous nature of the human and avian skeletons.

Belon's work, plus Aldrovandus's *Ornithologia, plus* the third book of Konrad Gesner's *Historia animalium* (1555), and William Turner's *Avium praecipuarum … historia* (1544) together comprise the four major ornithological works of the Renaissance, and all can be found in the fabulous Ellis Collection. This assemblage of natural history literature is comprised of about 15,000 volumes plus a considerable quantity of pamphlets, original drawings, manuscripts, etc., about a third of which is exclusively ornithological, and a great deal more includes birds. It is supplemented by works of natural history throughout the other collections housed here.

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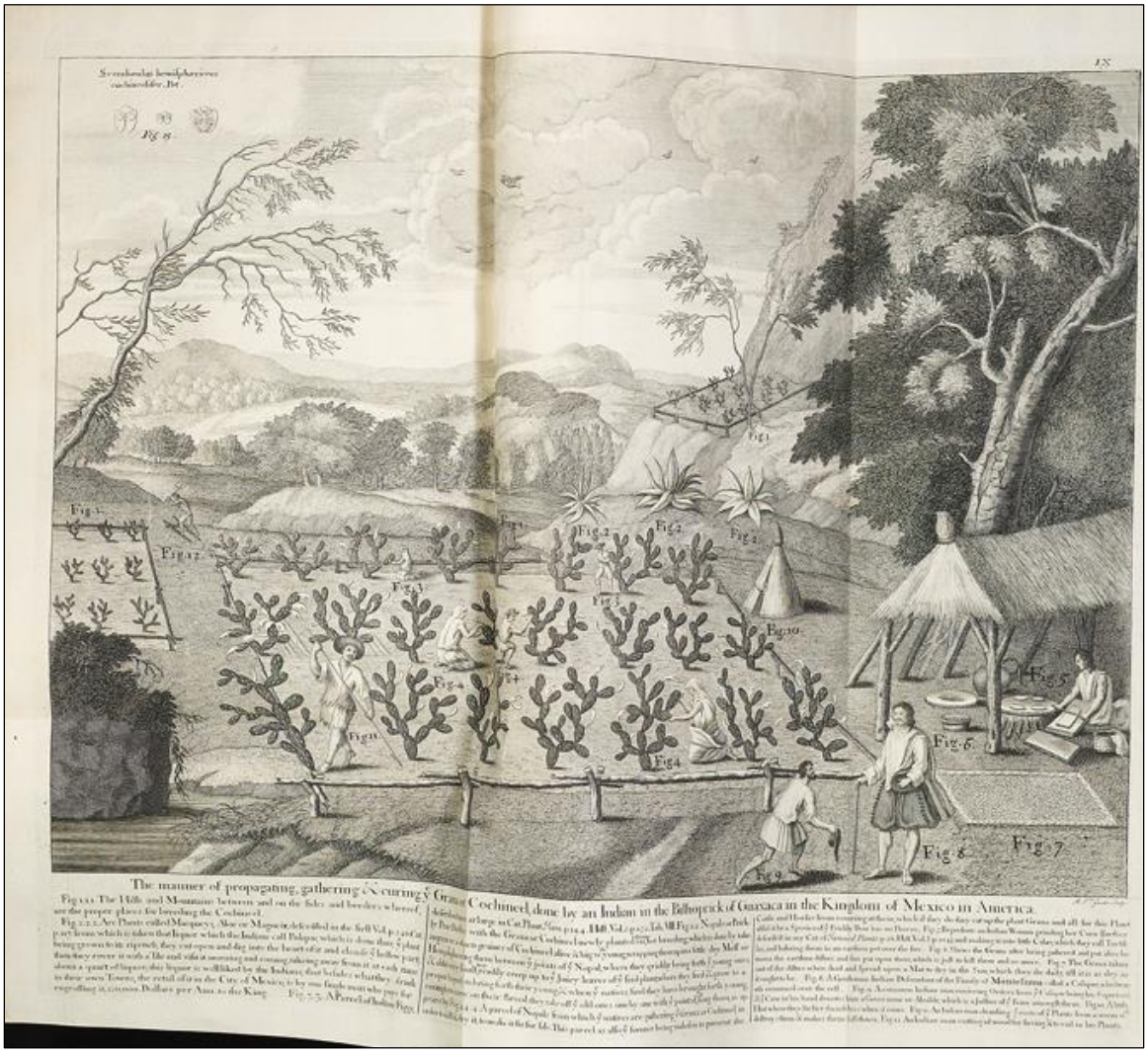

BEAUTICIAN: ***We can make a dimpled smile out of a frown***.
DOROTHY: ***Can you even dye my eyes to match my gown?***

"I WOULD TAKE US BACK A THOUSAND YEARS …"—DR. [MEHMET] ÖZ

Hans Sloane (1660-1753): *A voyage to the islands Madera, Barbados, Nieves, St Christophers, and Jamaica, with the natural history… of the last of those islands.* London: Printed by B.M. for the author, 1707-1725. 2 volumes. Vol. 2, 1725. *Ellis Aves E125*

With the discovery of the possibly detrimental effects of the aniline dyes used in cosmetics – and in food products – we are reverting back to an old Aztec recipe for cochineal dyes that were once used to make body paint and medicine. Today its uses are many.

This dye, consisting of the dried bodies of the insect *Dactylopius coccus,* colors cloth a deep crimson; it is now produced again with use as safe food coloring, but in the U.S. must be labeled as such (and with a *caveat*: it can cause anaphylactic shock in rare instances and asthma in some individuals).

Handmade Mexican textiles and folk art are colored with cochineal, also called carmine. It is used in histology to color slides; pharmacists use it in pills and creams and it is safe in all sorts of modern "body paint" and cosmetics.

This New World insect feeds on our native plant known as prickly pear cactus = *Opuntia* spp. The cactus family as a whole comprises over 1,000 species almost exclusively New World, except for a few species belonging to one genus found in Africa and Ceylon.

Naturalist Hans Sloane served as personal physician to the British Crown and patron of naturalists, best known as the founder of the British Museum (Natural History) through his bequest to the nation of his extensive collection of books, manuscripts, and natural history specimens. He served as physician to the governor of Jamaica, 1687-1688, and from notes and collections made during that period comes this work that included the first *scientific* descriptions of many New World plants, animals, diseases and other medical problems, and what may be the earliest printing of African American music from his transcriptions of slave music and lyrics.

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Geode – Argonia, Kansas

Do not arouse the wrath of the Great and Powerful Oz! (VOICE OF OZ)

PET OR MEAT?

George Catlin (1796-1872): *Catlin's North American Indian portfolio*. London: Geo. Catlin, C. and J. Atlard, printers, 1844. 31 colored plates. Plate 2.
Ellis Omnia H70

I dote on myself, there is that lot of me and all so luscious. Words of Walt Whitman, of course, from "Song of myself".

The American buffalo *Bison bison* is not originally a New Worlder: he evolved in Eurasia during the Pleistocene and came to North America during that epoch from Siberia over the Bering Strait land bridge. By as much right the horse should be in this spot, but until Columbus's second voyage in 1493, the horse had not existed on our American plains since the Pleistocene, perhaps as a result of being, like Walt Whitman and the buffalo, too luscious.

One of the things we aimed to do with this exhibition was show as many as possible of the plants and animals as would have appeared most unusual to the European eye, and the buffalo fits the bill. To Coronado it was the strangest of all the new things he encountered; instead of gold in them thar plains he found this critter with a hump like a camel's and a tail held erect when it ran, like that of a scorpion. To the Old World eye he would not have looked like the European wisent, or *Bison bonasus*.

American painter George Catlin had had little formal schooling when he set up a practice in law after a short apprenticeship. He was an amateur painter and portraitist on the side and before the end of his twenties had given up the law altogether to devote himself to portrait painting. His career took a turn when he saw, in Philadelphia, a delegation of western Indians and decided to devote his life to depicting them as they lived, on their home lands.

His nearly six hundred paintings of the tribes of the Great Plains and the Northwest are in the Smithsonian Institution. Another group of paintings of the South and Central American Indians is on display at the American Museum of Natural History, in Manhattan, New York City.

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Quartz

His painted face strangely resembles our old friend Hunk's. (STAGE DIRECTIONS)

THAT MERETRICIOUS MIRANDA MOVIE

Ulysse Aldrovandus (1522-1605?): *Ornithologiae hoc est De avibus historiae.* Bononiae: apud Franciscus de Franciscis senensem, 1599-1603. 3 volumes. Vol. 1, 1599. *Ellis Aves E69*

The toucan, also known as the Brazilian magpie, is *THE* bird symbol of neotropical America. First described in 1557, it was the first New World bird to gain fame in the Old World. There are thirty seven species in this family of colorful Carmen Miranda look-alikes. Like Carmen they have predilection for fruits, which they eat in a snipping and gulping fashion, but their diet also includes insects, spiders, lizards, birds and birds' eggs.

And like hoofers in a dance scene at the Copacabana from some gaudy Miranda flick, toucans will flock together and then fly in a chorus-line string from one tree to another. So why didn't we display a *colored* plate of a toucan? Because even though it's not colored it is a charming plate – and because we wanted a way to tempt you into the Department to look at the splendiferous volume with hand-colored lithograph plates by John Gould, *A monograph of the Ramphastidae or family of toucans.*

Italian naturalist and physician Ulysse Aldrovandus is arguably the preëminent Renaissance encyclopaedist. He founded a botanical garden at Bologna, worked as an inspector of drugs and pharmacies, formed a museum of natural history objects and biological specimens, and like the great Konrad Gesner before him was one of the fathers of modern plant and animal systematics.

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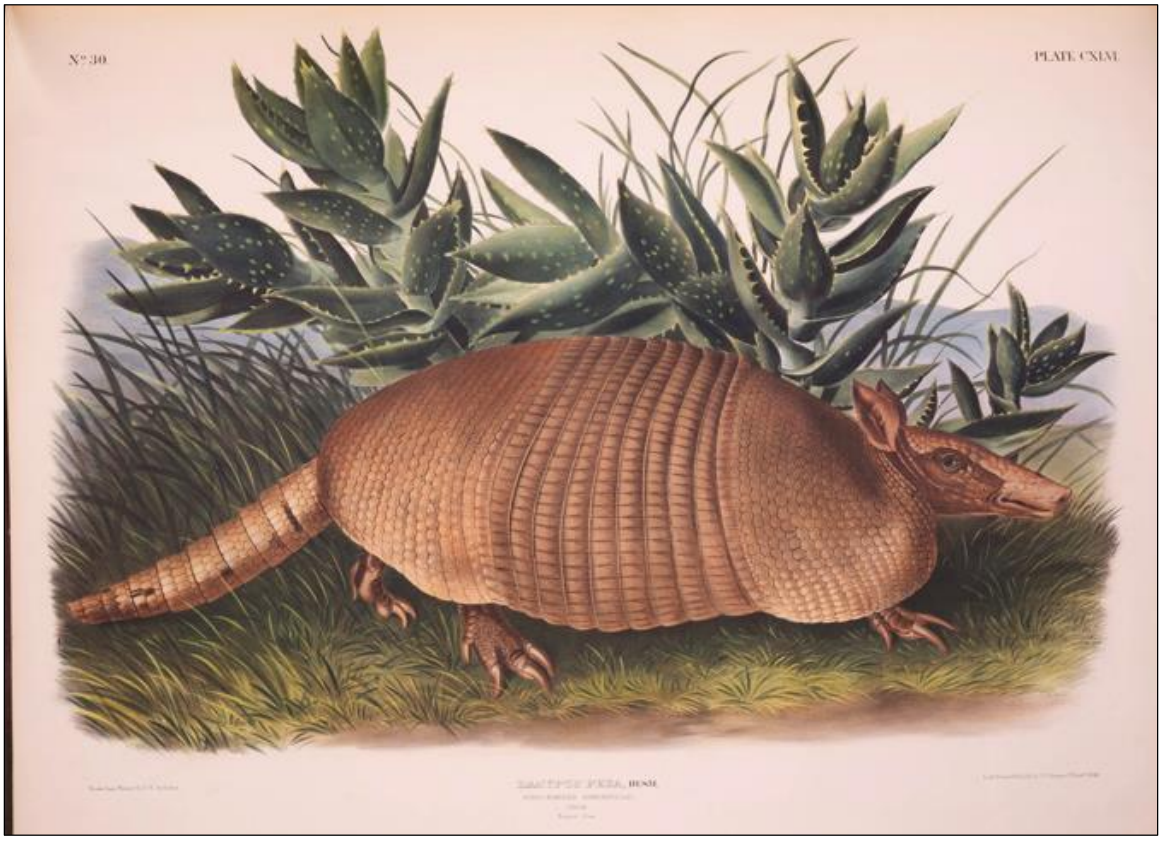

You clinking, clanking, clattering collection of calliginous junk! (DOROTHY)

NINE-BANDED LONG-NOSED DILLY

John James Audubon (1785-1851) and **John Bachman (1790-1874):** *The viviparous quadrupeds of North America*. New York: J. J. Audubon, 1845-1848. 3 volumes. Vol. 3. *Ellis Omnia H51*

All three of the Edentate, i.e. "toothless" mammal groups are represented in our exhibition: the anteater, the sloth, and here before you that wonderful contribution of New World animals to medicine, the nine-banded armadillo. The external characteristics of the three groups are so different that it's difficult to guess that they're related: what unites them is the lack of incisors, canines, and premolars, with only peg-like teeth where present; and other characteristics of skeleton, reproductive tract, and circulatory system. All are limited to the New World. Of the armadillos there are eight genera and twenty species.

This armadillo *Dasypus novemcinctus* in Audubon's plate is the only dilly that ranges into North America. In Kansas he has been found all the way to the Nebraska border, but is most common in Sumner County, south of Wichita. For most of the twentieth century the nine-bander has been the subject of medical research in such areas as cytology; reproductive physiology (the female can delay gestation up to twenty months); genetics (all sets of embryos are the product of a single fertilized egg and therefore genetically identical); and today in studies of leprosy, for this species is the only mammal besides man to harbor large quantities of the bacillus responsible for HD or Hansen's Disease = leprosy, to which the poor critter is highly susceptible. In order to prepare a vaccine, a ready source of the bacillus is necessary: our American dilly is a reservoir for the disease in the wild and the ideal animal for immunological research in the lab.

Unfortunately, folks should assume that there might be some risk in handling the animal or consuming its excellent meat. Cook it well.

When he is foraging, this 'possum-on-the-half-shell' is one of the *noisiest* critters, like Lewis Carroll's Jabberwock "whiffling through the tulgey wood"; any fast moving, crashing sound in the night in 'dillo territory is usually this guy. This primarily nocturnal beast sees so poorly, however, that if you are standing still he may come hurtling right into you and any surprise at close range will cause him to leap vertically into the air: while this move is great for knocking the wind out of a coyote, it works to the dilly's disadvantage against a low-rider or anything else on wheels.

The famous and eccentric American artist Audubon (who tried to paint himself as the naïve and colorful American woodsman) was said to be the bastard offspring of a French slave trader and a Creole chambermaid. Would that there were more like this genius who produced in 1838 the elephant folio edition of *The birds of America*. His *Viviparous quadrupeds* was the result of a collaboration , one of many with his friend John Bachman, but Audubon's eyesight and energy were failing badly by this time so many of the paintings for this enterprise were completed by his son John Woodhouse Audubon (1812-1862); Bachman wrote the text.

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COWARDLY LION: ***I'd be brave as a blizzard …***
TIN MAN: ***I'd be gentle as a lizard …***

BIG AT THE LITTLE AND BOTTOM AT THE TOP

Albert Seba (1665-1736): *Locupletissimi rerum naturalium thesauri.* Amstelaedami: apud Janssonio-Waesbergios, 1734-1765. 4 volumes. Vol. 1, 1734. *Ellis Aves H28*

The pre-Linnaean polynomials for the two animals on this plate are respectively *Crocodilus americanus, amphibious* (fig. 1), and *Lacerta leliaca Americana, pectinata* (fig. 2). Our two native North American crocodilians are today called *Alligator mississippiensis* (American alligator) and *Crocodylus acutus* (American crocodile). We did not come up with a modern binomial for the little green lizard in fig. 2, nor did Seba's text indicate which part of the Americas was its home.

Albert Seba was a wealthy Dutch apothecary, merchant, and traveler whose collection of natural history objects was the largest of its kind in his day. It would later form the nucleus of the Russian national collections in St. Petersburg after purchase by Peter the Great.

Reptiles and amphibians fill the largest parts of volumes 1 and 2. Carl Linnaeus referred to a large number of Seba's plates in the *Systema naturae*, and twenty-eight of the herpetological depictions serve as types for the species in the absence of specimens from which the figures and descriptions were made; for the most part Seba did not use binomials in the text, however, so the nomenclature has no standing.

This work was produced simultaneously in Latin-Dutch and Latin-French editions, in both colored and uncolored versions; this is one of the few copies with colored plates.

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Scoria – Kansas Mesa, near Colbran, Colorado

The humming voice is coming from a man we shall know as Professor Marvel. (STAGE DIRECTIONS)

EMERALD CITIZENS: MOUNTAIN GEMS, WOODSTARS, AND TZETTER'S ZUNZUNCITOS

Joachim Johann Nepomuk Spalowsky (1752-1797): *Beytrag zur Naturgeschichte der Vögel.* Wien: Gedruckt mit Schmidtischen Schriften, 1790-1792. 6 volumes. Vol. 1, 1790. *Ellis Aves D504*

It will come as no surprise that the world's smallest bird is the 2 and ¼ inch bee hummingbird *Mellisuga helenae* . But it might shock you to know that there is also a Very Large Hummingbird that measures 8 and ½ inches in length. And in between there are about 320 more species of hummers, all native to the New World.

They range from southern Alaska to the Straits of Magellan, but diversity diminishes with distance from the equator. They are found in almost all biomes including the desert (blooming flowers are a must for at least part of the season), but unfortunately only the ruby-throat is common in Kansas. Nevertheless, we can show you beautiful plates of just about all of them, here in our collections.

More hummingbird fun facts: the bill is not a straw – nectar moves along the tongue by capillary action; flight muscles account for ¼ to ⅓ of body weight and power up to eighty wing beats a second; some species are known to fly 27-50 mph; *and* these sweet little things can and will attack humans who invade breeding territory; hummingbirds are the only New World bird species known to pollinate flowers: plant species dependent on a particular hummingbird are said to be "ornithophilous"; and most amazing of all, the brilliant feathers contain only two pigments, black and brown: the iridescence is caused by diffraction and reflection of light. Hungarian artist Samuel Tzetter had a few more pigments to work with when he hand-colored Spalowsky's etchings.

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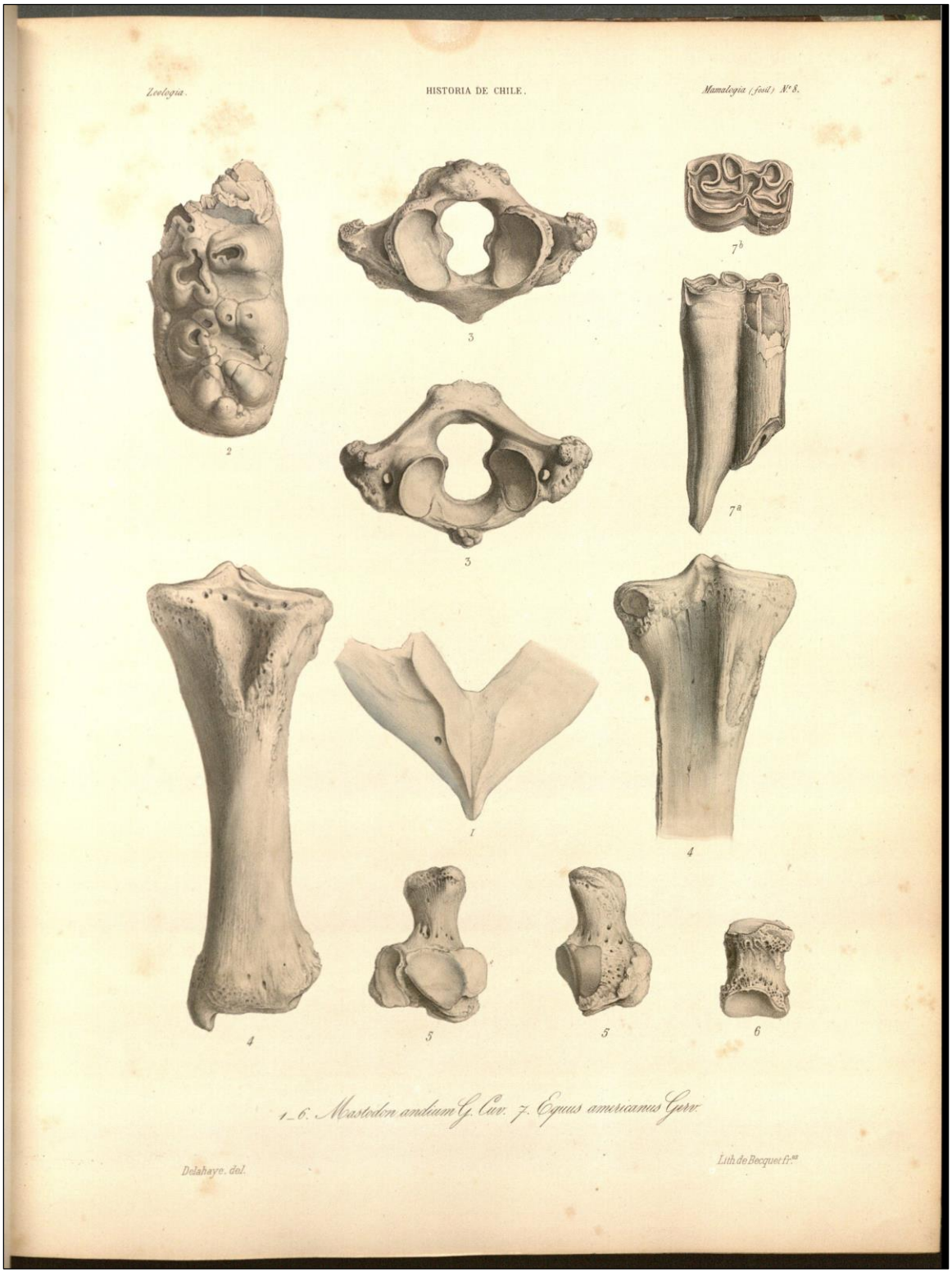
Amethyst



I've never seen a horse like that before! (DOROTHY)

DOROTHY: ***Supposin' you met an elephant!***
COWARDLY LION: ***I'd wrap him up in cellophant***.

HUMERUS PROSE

Claudio Gay (1800-1873): *Atlas de la historia fisica y politica de Chile.* Paris: en la Imprenta de E. Thunot, 1854. 2 volumes. Vol. 2. *Ellis Aves E377*

Palaeontologists recognize some 200 species in 19 genera of horses in fossil remains mainly in North America and Europe. The evolutionary trail leads from the tiny *Hyracotherium* or "dawn horse" up to the genus *Equus* of which our modern horse is one species. The fossil evidence indicates that the horse family Equidae evolved primarily in North America and spread by land bridges to South America and the Old World. This group of animals disappeared from the New World 10,000 years ago, reasons unknown, and returned with European man only after the Discovery.

The term mastodon refers to any of several distinct elephantine mammals of the genus Mastodon, appearing in the Miocene and continuing through the Pleistocene, and in North America at least, into post-Pleistocene times. That dating would put them on these lands contemporaneously with the early American human population, which may have been responsible for their extinction here. Mastodons had a world-wide distribution and the discovery of their remains is not unusual.

Trained as a pharmacist, Frenchman Claudio Gay gradually found himself more interested in the study of natural history. Eventually he was sent to teach physics and chemistry at a college in Santiago, Chile, where traveling with several other young naturalists he was soon totally consumed by his study of the biology, geology, and meteorology of the area.

The results of his scientific endeavors earned him the enthusiastic support of the Chilean government and he returned home to France only long enough to gather equipment for astronomical and meteorological observation. He then explored Peru, where he collected almost 2,000 insects and arachnids only 200 of which had been theretofore described, and did research on the flora and fauna of Chile and Peru.

Before returning to France in 1842, he established in 1840 a museum of natural history in Santiago. Upon his return home he was awarded further compensation from the Chilean government for the publication of the results of his explorations = the volume here displayed. The plates in this work, especially the botanical ones, are exquisite.

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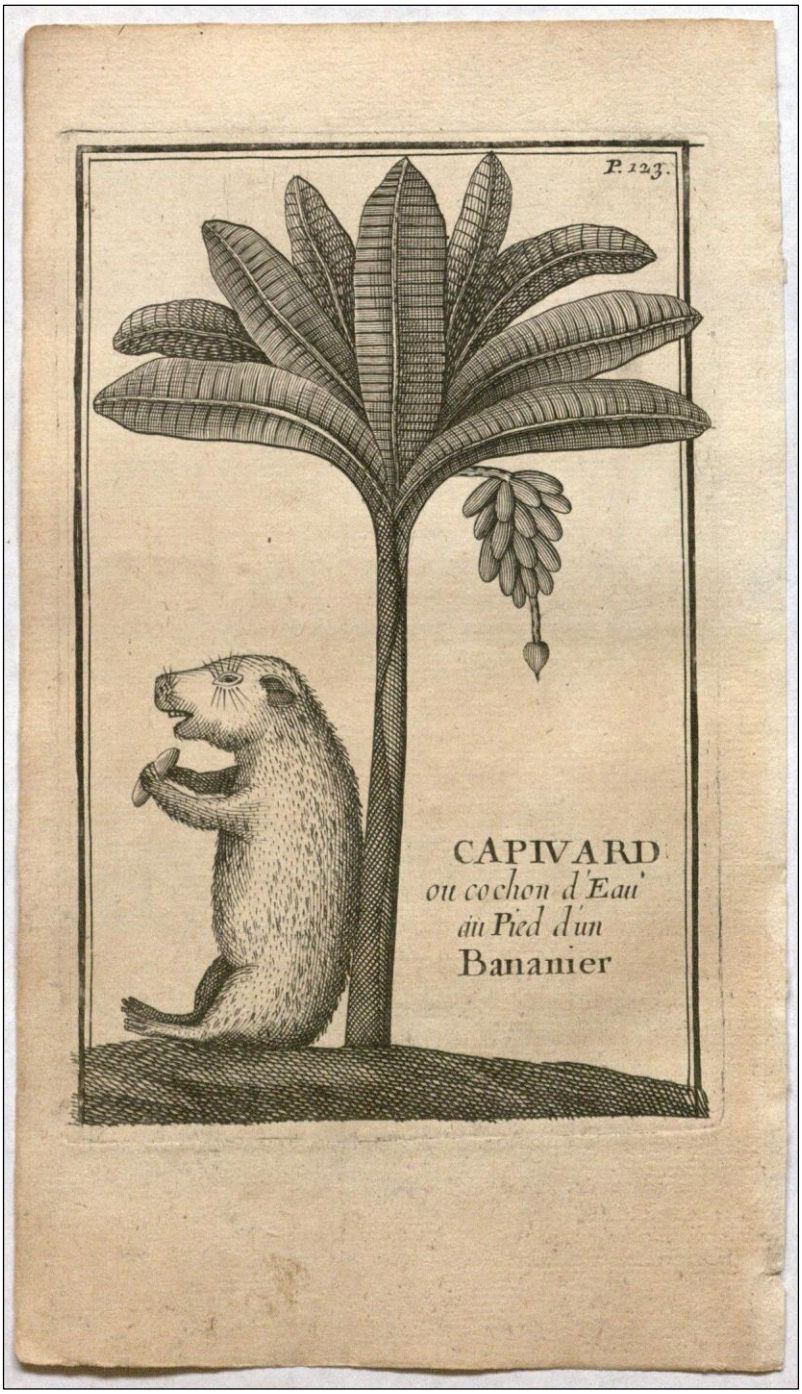

Soo-eee! Get in there before I make a dime bank outa ya! *(ZEKE)*

PIGS IS PIGS

François Froger (1676-17??): *Relation d'un voyage fait en 1695. 1696. & 1697. Aux côtes d'Afrique, Détroit de Magellan, Brezil, Cayenne & Isles Antilles. A* Paris: *d*ans l'Isle de Palais et chez G. Saugrain, 1698. *Summerfield B1366*

At upwards of 110 pounds, the capybara *Hydrochoerus hydrochaeris* is the largest living rodent and as one zoologist put it, "the piggiest of piggy things". He lives in wooded areas near water and feeds on grasses and water plants – whence his name meaning "master of the grasses"; in turn he provides fodder for jaguars when he's on land and caymans when he's in the water.

The capybara is native to Central and South America; a second species *H. isthmus* is native to Panama. You know you're in capybara country when you come across what appear to be Giant Rabbit Pellets, and star-shaped paw-prints from his webbed feet.

Froger studied mathematics with a mind to becoming an officer in the Royal French Navy, and at age 19 he joined up with a naval squadron ordered to reconnoiter in the Straits of Magellan where irregulars had established a base of operations. The fleet reached the area only to discover the buccaneers had abandoned the region. Froger returned to France via Brazil and the Antilles and the *Relation d'un voyage* is his journal of the voyage, written at age 22 and is full of ethnological, zoological, and botanical observations.

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Crinoid stem – Southeastern Kansas


Der Baltimorevogel.
Tab. XCVI.
Arbor Tulipifera Virginiana tripartito aceris folio.
Cum Priv. Sac. Caes. Majestatis.
Icterus ex aureo ni groque varius. 96.
L'Oi seau Baltimore.

'Bzz - Bzz – Bzz
Chirp, chirp, chirp
And a couple of la-de-das (CABBIE AND CITIZENS)

HOW 'BOUT THEM ORIOLES

George Edwards (1694-1773): *Sammlung verschiedener ausländischer und seltener Vögel.* Nürnberg: gedruckt bey Johann Joseph Fleischmann, 1749-1776. 9 volumes in 4. Vol. 1, 1749. *Ellis Aves G29*

Since the greening of the once treeless prairies, the eastern Baltimore oriole shown here has moved westward, and the western Bullock's oriole has moved eastward; the two now interbreed freely and despite color differences in the males they are considered one species, and known as the northern oriole *Icterus galbula*. They range from southern Canada and the U.S. south into Mexico.

The earliest Virginia colonists introduced our native tulip tree, now named *Liriodendron tulipifera*, into Europe (a second *L*. species is native to China and Vietnam). These same settlers fashioned lightweight canoes out of the wood of the largest old-growth tulip poplars. Today the wood is used for furniture, toys, and musical instruments.

George Edwards's two beautiful works, *A natural history of uncommon birds* and *Gleanings of natural history*, were here combined with Catesby's *Natural history* and translated into German by George Leonhart Huth (1705-1761) and Johann Michael Seligmann (1720-1762). The latter re-engraved the plates, adding picturesque backgrounds to some, and hand-colored the whole. This work with 470 plates is the result.

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Crinoid stem – Southeastern Kansas

She doesn't like little green worms! (SCARECROW)

GEORGIA ON HIS MIND

James Edward Smith (1759-1828): *The natural history of the rarer lepidopterous insects of Georgia.* London: Printed by T. Bensley, for J. Edwards, Cadell and Davies, and J. White, 1797. 2 volumes. Vol. 1. *G108*

The luna moth *Actias luna*, a native of North America and one of our most beautiful insects, is found over most of the United States east of the Rockies and north into southern Canada. The larva is recognizable by the yellow stripes along each side of a pale blue-green body. The finished animal has a wingspan of more than four inches with a transparent spot on each wing.

The sweetgums of the genus *Liquidambar* are not strictly New World trees; our American species shown here with the luna moth is *L. styraciflua*, an important timber tree, second in commerce only to oaks among the hardwoods. The pioneers made a chewing gum from the resin-like gum under the bark and if the chewing itself didn't cause your jaw to hurt, the gum was said to sooth the pain of a toothache.

J.E. Smith, ironically, began his study of botany at the age of eighteen on the death day in 1778 of the great Swedish naturalist Carl Linnaeus. In 1784, still a young man, he acquired Linnaeus's library and herbarium, much to the chagrin of King Gustavus III of Sweden who was out of the country when the deal went down. Smith founded the Linnean Society in 1788, and at his death, what remained of the collections, mostly books and herbarium specimens - for much was lost to the ravages of rot and insect infestation, and the minerals had been sold – was bought up by the Society.

This beautiful work on the butterflies and moths of the Peach State was published simultaneously in English and French. It never ceases to amaze us that some of the loveliest botanical plates appear in books the primary focus of which is entomological or ornithological. This one is no exception. The hand-colored copper engravings are from drawings by John Abbot (1751-1840).

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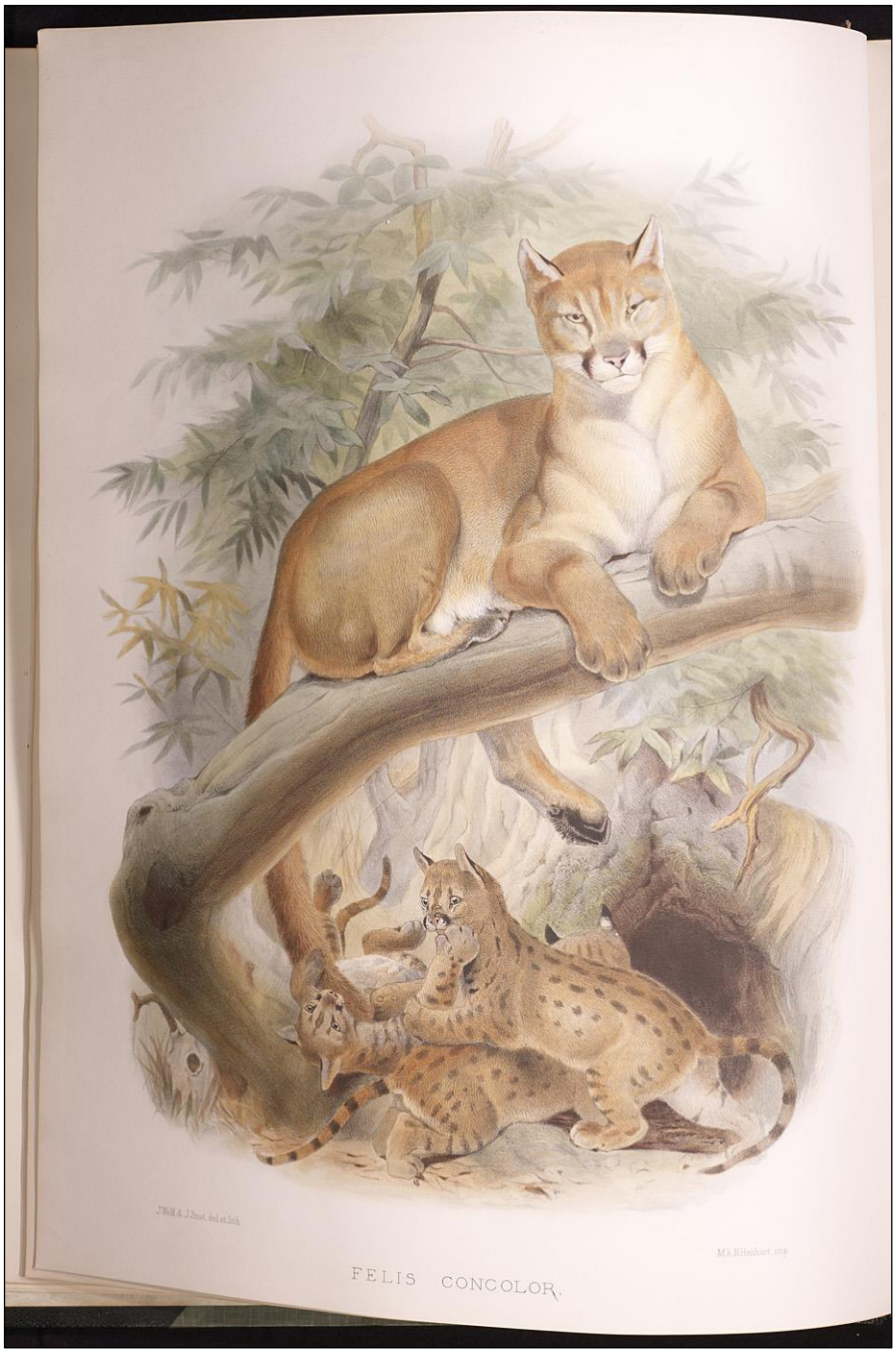

Well, wouldn't you feel degraded to be seen in the company of a cowardly lion? I would. (COWARDLY LION)

COWARDLY LION OR JUST A BIG PUSSYCAT?

Daniel Giraud Elliot (1835-1915): *A monograph of the Felidae or Family of the cats.* London: Pub. for the subscribers, by the author, 1883.

Ellis Omnia H50

The mountain lion *Puma concolor* has a long list of common names in English, including puma, cougar, panther, and catamount, and a slew more in the Latin American languages. She is found today chiefly in the mountainous areas of western North America as well as on the open savannas and in the rainforests of Central and South America.

The most adaptable of cats, she, like the jaguar, is an ecological generalist. Unfortunately, in some areas of her range she has been hunted to extinction. Recently there are scattered reports of sightings, with proof provided by trail cameras that Dorothy-like she has returned to Kansas. She is second in size only to the jaguar, but few attacks on humans have been reported.

A short bio of Elliot reads, in part, "Delicate health prevented his entering college, and instead he traveled extensively in Europe, Egypt, Turkey, the West Indies, and Brazil …"

College in mid-19th century America must have been hellacious, or travel in the same period in the above-named parts of the world couldn't have been a better health risk. Of course, disease, especially yellow fever, smallpox, and cholera, were holding their own quite well in parts of the U.S. at the time, so perhaps, combined with the hazards of college it was good to get away.

At any rate, the 'sickly' Elliot's travels gave him a broad knowledge of his favorite subject, ornithology, and as an artist of no mean talents he began to publish monographs in the manner of the Englishman John Gould, although he commissioned artists, including some of those who had worked for Gould, for these works. Elliot's own collection of bird specimens, the best in private hands, went to the American Museum of Natural History in 1869 and he eventually became one of the founders of the American Ornithologists' Union. So cats and birds *DO* mix.

In 1894 Elliot was appointed Curator of Zoology at the newly established Field Museum of Natural History in Chicago, and began producing monographs of the mammals of North and Central America and the West Indies, although the present volume precedes this period. In honor of his long and distinguished career – he turned out to be a healthy enough specimen after all – and his beautiful bird and mammal monographs, the Elliot medal was established by the National Academy of Sciences after his death.

***

MISS GULCH: ***I'm all but lame for the bite on my leg!***
UNCLE HENRY: ***You mean she bit ya? ...***
DOROTHY: ***ohh – I'll bite you myself!***

DON'T TREAD ON ME

Carl Linnaeus (1707-1778): *A genuine and universal system of natural history.* Improved, corrected, and enlarged by J. Frid. Gmelin. London: Printed for the proprietor by Lewis and Co., [1794-1807?] 14 volumes. Vol. 12.

Linnaeana C18

Rattlesnakes, represented by some 30 species, are restricted to the New World, ranging from southern Canada to northern Argentina and Uruguay. They are found in all the Lower 48 except Maine and Delaware (why not Delaware?) Many snakes including non-poisonous species shake their tails when disturbed. So why don't they, too, have rattles?

All the very poisonous New World snakes except the coral snake belong to the subfamily of vipers called pit vipers or Crotalinae, including the copperhead, cottonmouth, and rattlesnake. "Copperhead" is the name of a locally brewed beer, so-named after the snake bit one of our brewers who lived to tell the tale.

What we have in this image is a very stylized rattlesnake: he looks like no snake to be found in the field guides; with some imagination you can detect, between eye and nostril, the pit, the sensory organ that helps the snake strike its prey on target and is the characteristic that tells you it's poisonous. However, if you're close enough to see the pit on a live one, it may be too late for this info to help you.

Linnaeus's *Systema naturae* went through twelve editions during his lifetime. The volume *Animalia*, of the 10th edition, 1758, is one of the most important books in the history of science, for it marks the beginnings of zoological nomenclature and systematics: in it Linnaeus first applied genus and species names to the whole known animal kingdom.

Among the numerous translations and adaptations of the *Systema* that appeared both during and after Linnaeus's lifetime, one of the most notable herpetologically was this so-called 13th edition, by Johann Friedrich Gmelin (1748-1804), to which were added a number of new species descriptions. This edition apparently was designed to appeal to a wide audience because only in general outline did it have anything to do with the *Systema*; most of the rest came from other sources.

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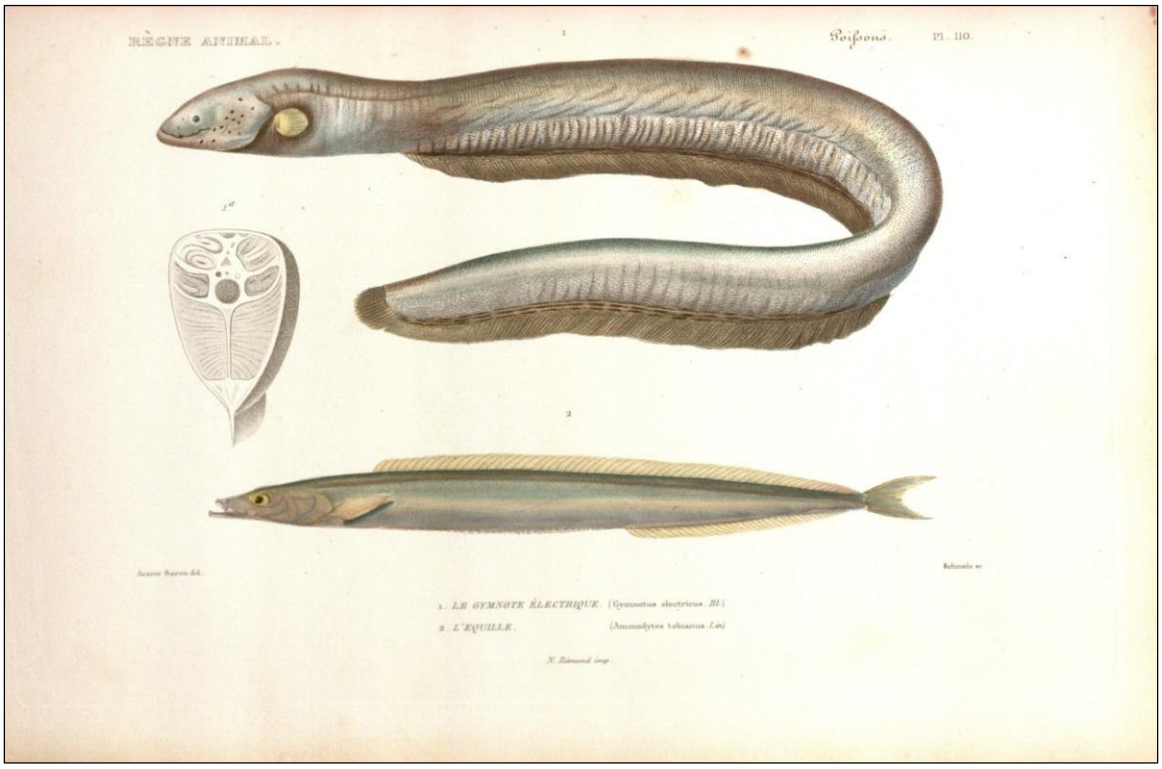

Just fried. (AUNT EM)

I SING THE BODY ELECTRIC

Georges Cuvier (1769-1832): Le régne animal. Paris: Fortin, Masson et Cie., 1836-1849. 22 volumes in 11. Vol. 8: Poissons: avec un Atlas, par **M.A. Valenciennes (1794-1865)**. *Ellis Aves D113*

It's five hundred years since Columbus made landfall in the New World and one hundred since that most American of all (North) American poets, Walt Whitman, made landfall somewhere over the rainbow; a spring 1992 exhibition in this department noted the one hundredth anniversary of his death. A great deal of Whitman's writing, both poetry and prose was in praise of natural America. Although we couldn't determine that he'd ever seen an electric eel, his "I sing the body electric", from *Leaves of grass* would most certainly have been his joyous response to the experience.

The American fresh-water fish known as the electric eel, suborder Gymnotoidei, was one of the most unusual finds of the early explorers in these lands. The order includes four families with a total of 15 genera and some 40 species, ranging from Guatemala to the La Plata River, but concentrated in the

Amazon basin and Guianas. Only the freshwater stingray, the piranhas, and a parasitic catfish called the *candirú* are more feared by humankind.

The largest of these 'eels' and the only member of the family Electrophoridae is *Electrophorus electricus*; he attains lengths of six feet and is said to deliver a jolt of 650 volts. *Gymnotus* is the genus name for one of the groups that's a little kinder and gentler, more watts than volts; but the description in the text fits *Electrophorus* and may be the one we have here.

This volume is from the renowned 'Disciples' edition of Cuvier's opus on the animal kingdom. This great French anatomist and paleontologist began his scientific career at age 15, and by age 25 was a professor at the Musée Nationale d'Histoire Naturelle in Paris. He was a brilliant researcher and teacher and became a leading paleontologist, but held tight to the idea that species were immutable. With the arrival of Darwin, Cuvier's ideas were, like the witch, 'not only merely dead', but 'really most sincerely dead'.

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Selenite - Barber County, Kansas

Do – do you suppose we'll meet any wild animals? (DOROTHY)

WHEN AN ANTELOPE IS NOT AN ANTELOPE

John Richardson (1787-1865): *Fauna boreali-Americana.* London: John Murray, 1829-1837. 4 volumes. Vol. 1, 1829. *Ellis Aves D236*

An antelope is not an antelope when it's a pronghorn. Unless like me you're totally nuts about wild Kansas, and can't get enough of the Flint Hills and the High Plains – and other lonesome parts of the state for that matter – you may need something to keep you and the kids occupied while crossing the prairies: put down the funny plastic smart-phone thingie and try counting prong bucks.

Not only is the pronghorn or American antelope *Antilocapra americana* NOT an antelope, he's not even closely related to the other living ungulates (hoofed animals). His range extends from southwestern Canada to Central Mexico and once numbered in the millions.

His coat is deep and full, made of long, tightly packed hairs, each filled with an insulating pith-like substance, and suits him ideally for the wind-swept plains of the Rocky Mountain area. The horns that decorate both males and most females, are grown and shed in a manner unique to the pronghorn: once a year, only the outside sheath is cast off – not the whole horn – and replaced by new growth.

The pronghorn is probably the fastest animal in America, clocked at 60 mph for short spurts; even the young can attain speeds of up to 25 mph just a few days after birth. But most unusual of all is its ability to communicate with its ilk (no, *not* elk) at distances of up to four miles, not by sound, for it is a quiet beast , but with the body language of long white rump hairs that can be made to stand on end so that they reflect light! All in all he's a wonderfully adapted creature whose fossil forms from the Miocene differ little from his living form today.

John Richardson was a Scottish naval surgeon and naturalist best known for his appointment to John Franklin's first and second polar expeditions; for his accurate surveys of the Canadian Arctic coast; and for his writings on Arctic biology, especially ichthyology. He was a man of almost unequaled energy and accomplishment in many areas of natural history from botany to fossil mammalogy; his thesis for the M.D. was on yellow fever. The story of his life and adventures would make Indiana Jones look like a mama's boy, and if there hasn't yet been a movie about him there ought to be.

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Crinoid stem - Southeastern Kansas

Where troubles melt like lemon drops,
Away above the chimney tops
That's where you'll find me. (DOROTHY)

BRING OUT YOUR DEAD

Alexander von Humboldt (1769-1859) et Aimé Bonpland (1773-1858): *Recueil d'observations de zoologie et d'anatomie comparée.* A Paris: chez F. Schoell et chez Gel. Dufour, 1811-1812. 2 volumes. Vol. 1, 1811.

Ellis Aves E104

The huge Andean condor *Vultur gryphus* is twice the size of our turkey vulture *Cathartes aura*: both are New World vultures. With a weight of from 15 to 25 pounds and a wingspan of over 10 feet, the condors are the largest of all birds of prey. They inhabit the higher elevations, away above the chimney tops of the Andes, as well as coastal areas of Peru and southern Chile, but are disappearing from their range. This is unfortunate inasmuch as they are the great cleaner-uppers of carrion and often attack and kill dying animals: without the condor, not only will all of nature be poorer, but some of their native environment may begin to resemble The Big Apple during a garbage strike.

Scientists from all branches of the natural sciences claim Humboldt as one of their own. This German scientist, explorer and diplomat was one of the most talented and versatile naturalists ever to walk the earth, and he walked a lot of it. His knowledge was encyclopaedic, his contributions fundamental. Humboldt and French botanist Aimé Bonpland set out in 1799 on a 5-year voyage to South and Central America; not only did they make the systematic botanical and meteorological observations they had prepared for, but collected an unprecedented number of plants, animal and mineral specimens, and gathered astronomical and geomagnetic data as well. The two men traversed the vegetation zones from bottom to top in the Andes, and scaled Mexican volcanoes.

Through Humboldt's recognition of the dependence of plant distribution on topography and climate and his scheme of altitudinal and longitudinal patterns, he laid the foundation for the concepts of phytogeography and ecology. His work included the first accurate descriptions of the rubber and cinchona trees and significant contributions to meteorology and volcanology. And this all accounts for only the first part, post-childhood, of a long (90 year) life of continuous productivity in further scientific travels, diplomatic missions, and more writing.

Humboldt considered himself "half American" and his books were popular reading in the U.S. A Kansas town is named after him, as is the Humboldt fault zone, probably responsible for producing one of the largest earthquakes ever recorded in Kansas, in 1867.

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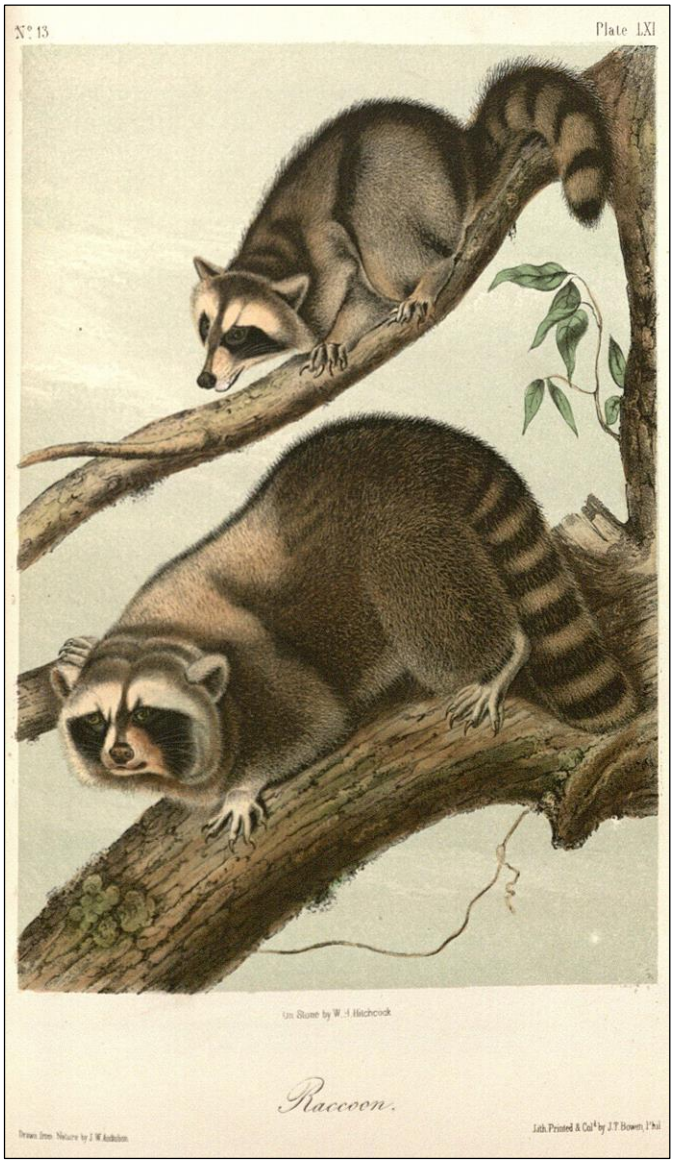

Out pops a head with a round face. Although he now wears a mustache, something about the head is strangely reminiscent of our old friend, Professor Marvel. (STAGE DIRECTIONS)

RACKETY COONS

John James Audubon (1785-1851) and John Bachman (1790-1874): The quadrupeds of North America. New York: George R. Lockwood (late Roe Lockwood & Son), 1849. 3 volumes. Vol. 2. *Ellis Omnia D270*

There are six genera and about sixteen species in the raccoon family Procyonidae, all native to the New World. Giant pandas, once thought to belong to this family, have, Goldilocks-like, taken up residence in the Bear family, taxonomically speaking.

'Coons are omnivores: they'll eat anything from snakes to corn-on-the-cob, and porridge. And the answer to the question posed by Pogo Possum back in 1948 in the New York Star, "Do rackety coons always wash food 'fore they eats?", is that they do like to handle their food with those dexterous paws 'fore they eats, but the presence of water is incidental. Common names in other languages acknowledge this trait: German = der Waschbär; Spanish = osito lavador. The coon family includes the kinkajous, coatis, olingos, ringtails, and the cacomistles.

Our northern species *Procyon lotor* is notorious with those of us who like to pitch our tents in the Great American Outback: Build it and They Will Come. If like the three bears you wander away from camp without putting away the porridge, it will be gone when you return; even if you aren't a tree-hugger and never leave town, coons adapt well to humans and thrive in the 'burbs where they will raid your watermelon patch and your garbage can – and that's when it really gets rackety. If you catch 'em you can make hats and coats out of 'em, but with rabies in the land this is not the season to be so environmentally incorrect.

This copy of Audubon's Quadrupeds was once owned by Eugene Field (1850-1895), mid-western journalist and poet of sentimental verse, notably "Little boy blue" and "Wynken, Blynken and Nod".

John Bachman, the naturalist and Lutheran clergyman who collaborated with Audubon on the text of the *Birds of America*, 1840-1844, did much of the writing of the *Quadrupeds*. Many of the plates of this edition are credited to Audubon's son John Woodhouse Audubon (1812-1862). It has been said that

mammalogists are even less impressed with Audubon's mammals than The Bird People are with his birds.

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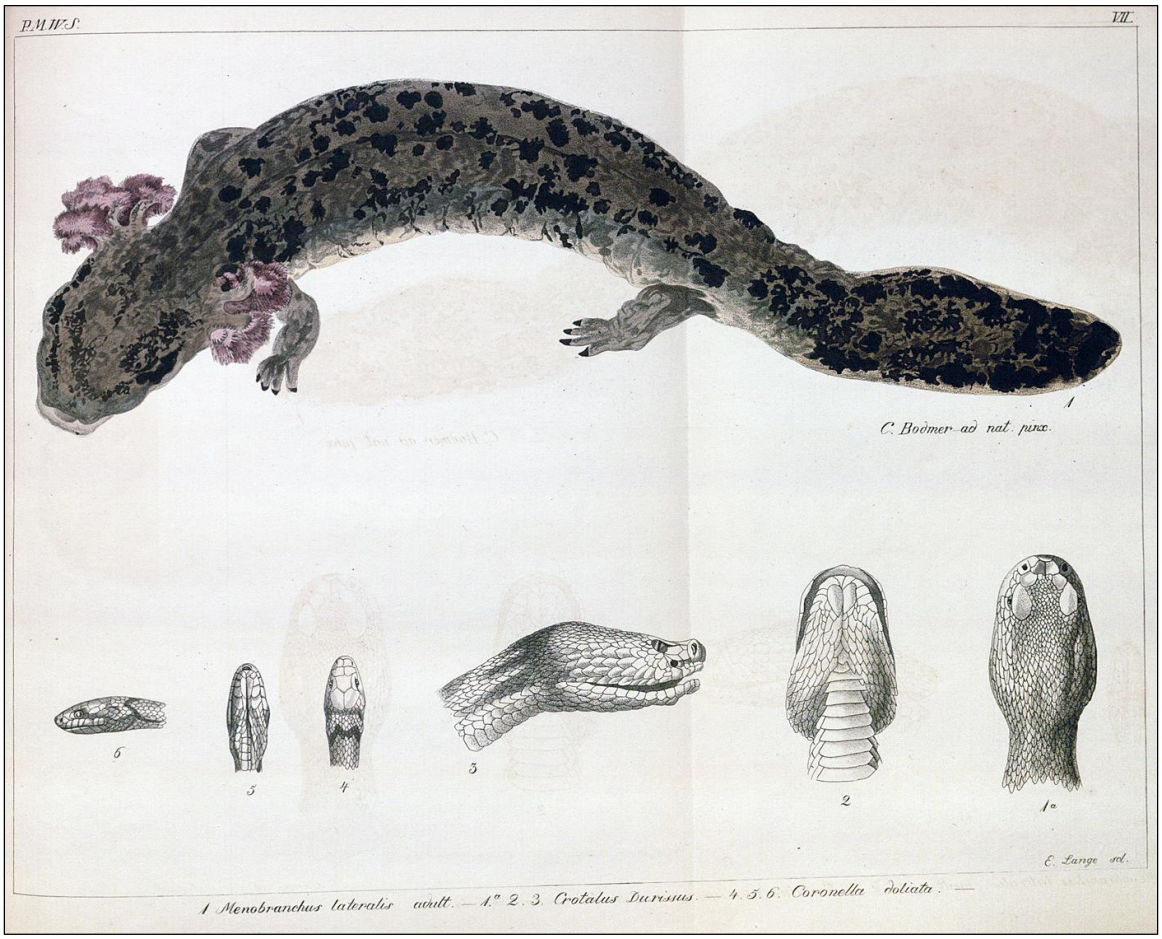

DOROTHY: ***Is he good or is he wicked?***
GLINDA: ***Oh, very good, but very mysterious. He lives in the Emerald City***.

RUBY SLIPPERS

Maximilian, Prince von Wied (1782-1867): *Verzeichniss der Reptilien, welche auf einer Reise im Nördlichen America beobachtet würden.* Dresden: Druck von E. Blochmann & Sohn, 1865. *E783*

The common mudpuppy *Necturus maculosus* has ruby gills as magical as any ruby slippers, and in our emerald Kansas streams is found only in the Marais des Cygnes drainage basin. He is the only Kansas representative of the waterdog family Proteidae, a family of salamanders consisting of only two

genera and six species worldwide: the second genus, *Proteus*, is a monotypic genus, the blind white salamander of the caves of Slovenia in the former Yugoslavia.

The genus *Necturus* consists of five species, all native to eastern North America, and its members are easily recognizable by those ruby-red feathery gills. Both genera are completely aquatic, retaining gills and many other larval features throughout life.

Prussian Prince Max's reputation as a first-class naturalist, explorer, and ethnologist, had been established early in his life as a result of his explorations of the coastal forests of Brazil. At age 50 he started on a journey to the Trans-Mississippi West with the intention of comparing North American with South American natural history and Indian tribes. He was one of the last to record, along with Carl Bodmer (1809-1893) as his artist, the lives of the Indian population along the Missouri River before they succumbed to smallpox (probably the *WORST* gift of the Old World to the New), military encounters, and other devastation wrought by Old World Man.

Under almost unbearable conditions (Bodmer's paints froze at minus forty degrees F. and the prince contracted scurvy), they made observations and collections that would result in the *Reise in das Innere Nord America*, published in twenty parts, 1838-1841, and translated into several languages, recognized today for its great historical and artistic value. Special Collections has a copy.

The prince described a number of American species of amphibians and reptiles, made observations along the Missouri River basin in 1833-1834 that resulted in the work shown here, containing seven hand-colored lithographs by Bodmer.

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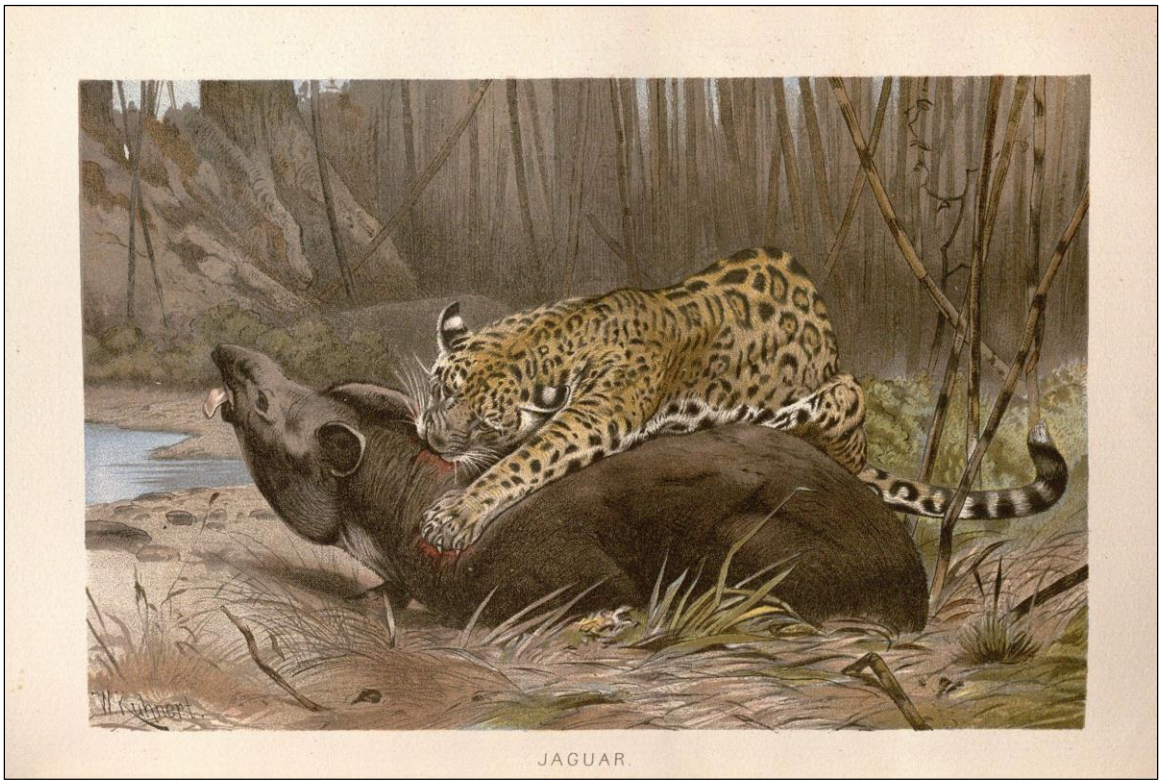

We've been walking a long ways, and I was hungry … (DOROTHY)

I BELIEVE IN THE FLESH AND THE APPETITES

Alfred Edmund Brehm (1829-1884): *Brehm's Tierleben.* 3. Gänzlich neu arbeitete Auflage. Von Prof. Peuchel-Loesche. Leipzig und Wien: Bibliographisches Institut, 1890-1893. 10 volumes. Vol. 1, Säugetiere: 1. Band, 1890. *Ellis Aves D65*

The jaguar *Panthera onca* is the largest of the New World cats, but he's just a pussycat = less Pounce to the Ounce – compared to Old World felines. *El tigre*, as he's known in the jungles of South America, can weigh over 400 pounds, but 300 is closer to what you're likely to run into.

And IF you do, DO NOT RUN AWAY. He will chase you. Better to either face him or walk towards him clapping and shouting. Easy for the Cat People to say, and small comfort to know that his only predator is the anaconda, and that only rarely. Probably best not to make a threesome; in any case, a jaguar seldom makes an unprovoked attack on *Homo sapiens* and yet stays well fed. Like the mountain lion he is an ecological generalist but his range now

extends northward only into northern Mexico: he is said to be only recently extinct in Texas, New Mexico, and Arizona.

If you think the line above about flesh and appetites sounds like Walt Whitman, it is: a line in "Song of myself" from *Leaves of grass*. Whitman died in the quadricentenial of the Discovery, not by jaguar. Although we don't advocate killing this wonderful animal, eating does seem to be the order of the day where jaguars are concerned, so if you should ever get the upper hand with one, we'd like to share a recipe: truth be told, it's for Marrow of Leopard, not jaguar, but all good cooks make substitutions now and again. It comes from Norman Douglas's *Venus in the kitchen,* published in New York in 1953, and is recommended for shy persons, cowardly lions, etc.:

> Take a good quantity of [jaguar's] marrow, cook it in goat's milk and abundant white pepper, and eat it on toast. *Medulla pardi* [whatever] *bibita mirabilis est*.

Brehms Tierleben is said to be one of the most elaborate and best illustrated semi-popular works about animals ever published, and is still considered such a classic in Germany that it was reprinted in 1964, and popular editions have appeared even more recently.

***

Gold

FLORA

48 *Trattato del Tabacco*

bacco Hyosciamo Luteo; e sotto questo titolo lo descrisse Dodoneo, Lonicero, Gesnero; ed il Mattiolo lo chiama Hyosciamo terzo: il Leonese Hyosciamo Negro: Taberna Montano Hyosciamo Peruuiano? Gesnero Priapeia; ed il Cisalpino dice essere dell' istessa specie della Tornabona: li Botanografi, ò Semplicisti di Leon di Frãcia la chiamano *Tabacum minimum Nicotiana Minor Hyosciami facie*. Al Neandro, che seguita l'opinione di Delacampio, non pare che questo nome di Hyosciamo si conuenga in alcun modo à questa pianta, e la ragione che per prouar questo arreca, è perche le virtù, e qualità dell'vno, pugnano, *ex diametro* con le virtù, e qualità dell' altro. Perche il seme del Tabacco; com' anche le foglie sono molto agre al gusto, e masticate conseruano per lungo tempo l'asprezza, ed agrimonia nella bocca, e sù la lingua, il ch'è inditio d'vna calidità insigne, là doue l'Hyosciamo non hà tal agrimonia, ed è molto frigido, e conchiude. *Quare perperam etiam à Clarissimo Dodonæo, & reliquis Hyosciami Peruuiani nomen ei tribuitur, nec ad eius genera referri potest, quod folia insignem quandam vt diximus acrimoniam sapiant, quod calidæ naturæ, non frigidæ qualis est Hyosciami indicium notat*: Mà questo se così sia l'essaminaremo nel seguente Capitolo.

CA-

49

D CA-

And now my beauties! ... something with poison in it, I think; with poison in it, but attractive to the eye and soothing to the smell! Heh, heh, heh, heh, heh, heh! (WITCH)

THANK YOU FOR SMOKING

Benedetto Stella (17th century): *Il tabacco*. In Roma: per Filippo Maria Mancini, 1669. *Summerfield B2447*

Tobacco, a New World member of the nightshade family, has had more written about it than any other plant in the world, ever since two of Columbus's sailors first saw cigars being smoked on the island of Cuba. Until the 1950s the only voice raised loudly against our Evil Weed was that of King James I of England in his 1604 *Counterblaste to tobacco.* The king came up with all the same reasons the Surgeon General gives us today NOT to smoke,

even down to the dangers of second-hand inhalation. THE KING IS DEAD but not from smoking.

First used in Europe as medicine, probably because of its resemblance to henbane – another nightshade – it quickly caught on as a cure-all. Spanish physician Nicholas Monardes published a book in 1571 about the medicinal plants coming into Spain from the Americas: he drew on Indian lore, the tales of other New World travelers, and his own outrageous imagination, to declare tobacco a panacea, but by the middle of the 1600s many physicians and others with an empirical bent of mind realized its medicinal value was minimal.

In an interesting twist, smoking was taken up again – with a vengeance – during the Great Plague of 1665 in England, when it was thought that a puff or two could prevent the disease – and for a while, NOT smoking was a punishable offence in some quarters. One can almost imagine a scene from Monty Python: THIS IS NOT A NON-SMOKING AREA. THANK YOU FOR SMOKING. BRING OUT YOUR DEAD.

The tobacco of eastern North America was *Nicotiana rustica*, considered an inferior species for smoking; by about 1610 the Virginia Colony had obtained the superior *N. tabacum* from Trinidad, and the rest is history. While smoking may be physiologically destructive, we can look on the bright side: a mixture of pure nicotine and soap is said to keep garden pests in abeyance, but whether this glop is to be applied to garden or to pest is unclear from our sources.

The best thing about tobacco is the fragrance of its flowers, one of the most glorious of garden smells, all but denied to those who smoke its leaves. Its perfume is similar to that of petunia, to which it is closely related. Grandpa Haines grew his in a little greenhouse and thus had the best of both worlds: grandma never suspected a thing.

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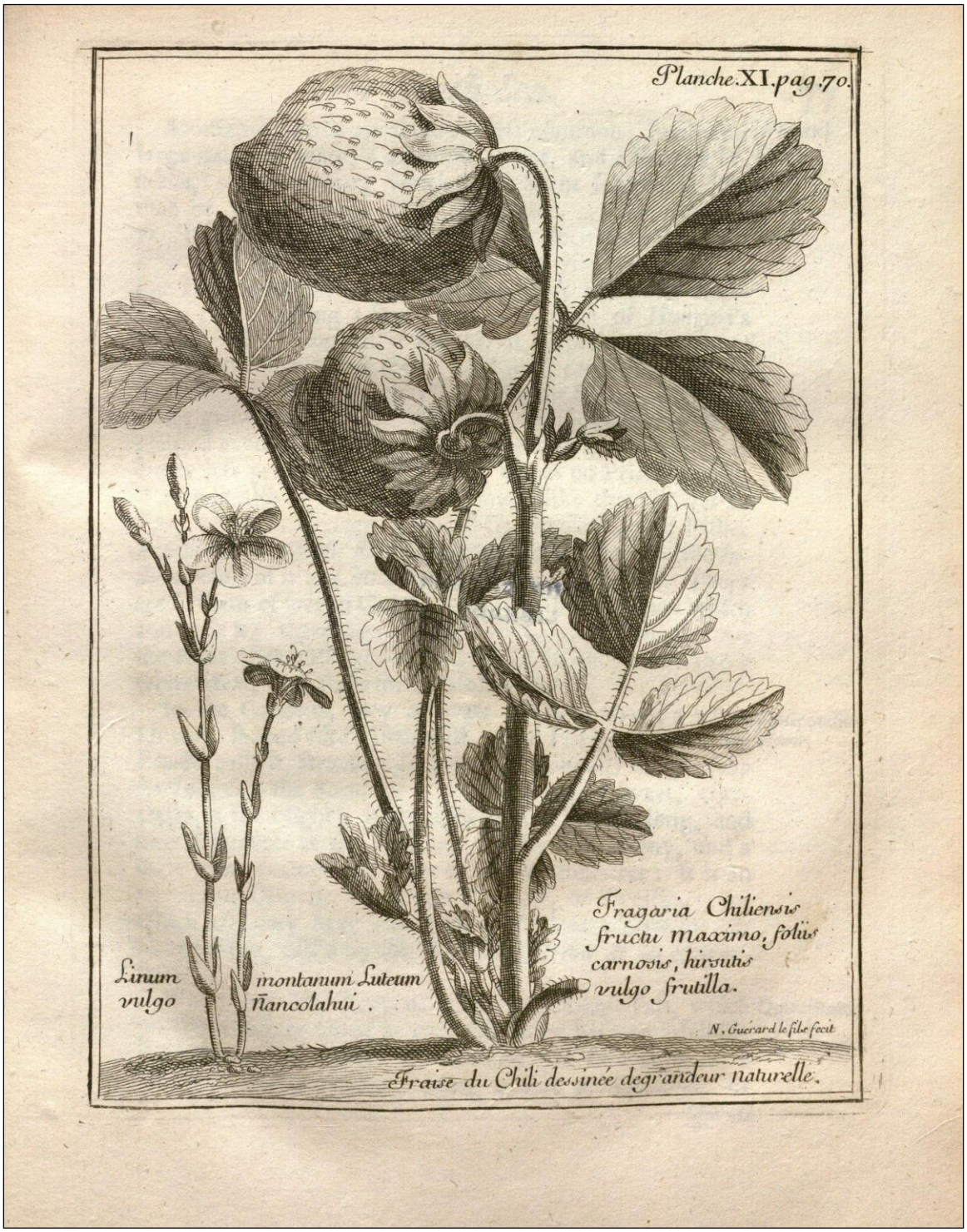

Well, how would you like to have someone come along and pick something off you? (TREE TO DOROTHY)

LET'S GIVE *HIM* THE RASPBERRY

Amédée François Frézier (1682-1773): *A voyage to the South-Sea, and along the coasts of Chili and Peru, in the years 1712, 1713, and 1714.* London: Printed for Jonah Bowyer, 1717. *C96*

Wild strawberries did grow and were eaten in Europe before the Discovery, but the cultivated berry that we know and love is of American origin and is the only crop of major world importance to have originated in modern times (though some argue that American blueberry hybrids can claim this honor).

The first American strawberry to be to be introduced to Europe was *Fragaria virginiana*, the woodland strawberry of the eastern U.S.; over a century later Frézier, a French royal military engineer, introduced *F. chiloensis,* the West Coast pine strawberry. These two species, the wild Chilean and the wild American strawberry, were the ancestors of our modern berry that arose in the eighteenth century as a hybrid.

Discoveries in the gentle art of botany are often made by discoverers in the not-so-gentle art of war. Frézier, under contract to the Spanish government, sailed to her colonies in South America to construct forts against attacks by the English and the Dutch. For the French government he was to prepare charts of the western coast, also for military use. The account of his voyage contains descriptions of Chilean and Peruvian towns and countryside and includes much of a geographic and scientific value.

However, for his hawkish activities in our neck of the Haunted Forest we'd like to give *him* the raspberry.

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Crinoid stems – Southeastern Kansas

I won't be any trouble because I don't eat a thing. (SCARECROW)

DARWIN CALLED IT "THE MOST WONDERFUL PLANT IN THE WORLD"

John Ellis (1711-1776): De *Dionaea muscipula* planta irritabili. Erlangen: im Verlag W. Walthers, 1771. *Linnaeana D62 item 1*

Its own little shop of horrors, this insectivorous plant, the Venus flytrap *Dionaea muscipula* grows in pineland bogs, mostly in the Carolinas and neighboring states, where it is also known as the North American tipitiwitchit and Aphrodite's mousetrap.

Two botanical premises were well established by 1492: one was that for every disease there was a plant remedy; the second was that there was a plant species distinctive in character from all others for every clime and habitat on earth. With the Discovery, botanists' imaginations went wild. The plant pictured here, though not the first carnivorous plant species discovered in the Americas – and this one not until 1759 – elicited the most excitement, for it was with this flytrap that the idea of digestion first came up (so to speak).

Although Europe had its insectivorous species (some water plants trapped crustaceans and other water animals), carnivory in plants was not recognized or understood until the 18th century, and the theory that the plant's tissues actually digested and absorbed nitrogen from insect bodies didn't come until the 19th, eventually providing Darwin with a wonderful example of adaptation, in this case to the low nitrogen which is characteristic of bogs.

Ellis, Irish-born London merchant, was an amateur botanist interested in plant introduction, especially from the Americas, and the problem of transportation of plants and seeds from far-away places. He devised a system of assuring viability of seeds over long distances and through extremes of temperature variation, by enclosing them in wax. This discussion in German of the Venus flytrap was translated by Johann Schreber from Ellis's *Directions for bringing over seeds and plants from the East-Indies and other distant countries*, London, 1770.

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Selenite – Barber County, Kansas

Oh what happened then was rich. (MUNCHKIN)

IF THE GODS GAVE US CHOCOLATE, WHO GAVE US BROCCOLI?

Maria Sibylla Merian (1647-1717): *Histoire général des insectes de Surinam et de toute l'Europe.* 3. Edition. A Paris: chez L. C. Desnos, 1771. 3 volumes. Vol. 1: *Des plantes de Surinam*. *H25*

The Latin binomial *Theobroma cacao*, means "cacao, gift of the Gods", but the introduction of chocolate (cacuatl) into Europe got a mixed reception: on the one hand it was thought to have great medicinal powers, especially in the treatment of depression, but the stimulant effect was said to appeal to the riff-

raff who wanted nothing more than to stay up all night in the coffee houses and be social malcontents and political rabble-rousers. C rhymes with T and that spells Trouble.

These rowdies may have been drinking a form of the drink Cortés had discovered in Mexico called *chocolatl,* made from crushed cacao beans with pepper and spices added; back in Spain sugar soon got added to the mix. The flowers and fruit of this New World native grow directly out of the tree trunk. The chocolate "berry" is life-size in Merian's engraving; the seeds are the cacao beans. Ghana grows one third of world production today; the rest comes from other equatorial areas of Africa and South America.

The author of this beautiful volume was the daughter of artist-engraver Matthäus Merian and the granddaughter of Theodor de Bry (whose work is also in this exhibition). In 1699 Merian went with her daughter, but otherwise unaccompanied, to Surinam and there she painted native plant and insect life with her own colors mixed from plant extracts. She gained a reputation in scientific circles for her accurate renderings and solid research.

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Geode – Argonia, Kansas

228 RERVM MEDICARVM NO. HISP.

De CHIMALATL PERVINA Flore Solis. Cap. XV.

Panis.

Flos Solis minor.

CHIMALATL PERVINA, ſeu Magna, quam *Anthilion*, & Florem Solis appellant quidam, herba eſt folia ferens magna, ſerrata, infernè candeſcentia, & Vrticæ æmulantia formam. caulem vnicum, rectum, decem quindecimvè pedes procerum, brachium craſſum, rotundum, cauum, atque exaturato colore vireſcentem. florem in ſummo orbicularem, aureo micantem fulgore, ſpecioſis radiantibus per ambitum luteis folijs, media verò orbita quampluribus floſculis flaueſcentibus refertum, è porulis, faui mellis inſtar ordine diſpoſitis, ortum ducentibus. ijsq; decidentibus ſemina inſurgunt illis Melopeponum forma (etſi teretia ferè ſint) lenitate, temperie, & cætera prope natura ſimilia. radices verò aliquadantenus tuberoſas, ac fibratas. Semina, licet liberalius deuorata dolorem capitis excitent, pectus tamen leniunt, ardorem extinguunt, & apud aliquas gentes tuſa, coacta in panem, aſſaque, frumenti præbent vſum. etſi non deſint, qui dicant, appetitus venereos excitare. maximè pediculos foliorum teneros, abſterſis pilis in craticula coctos, ſale, oleoq; conditos eſui ſuaues, orique gratos. Huius aliud obſeruatur genus, cuius caulis breuior, ac minor eſt, ac ramos duos, tres, pluresvè ferens, ac in ſingulorum ſummo flos inſurgit priori ſimilis, multò tamen minor. Naſcitur in *Perù*, alijsque nonnullis Americæ prouincijs ſponte, in alijs verò quibuſuis locis planis, atque campeſtribus ſemine, lætior tamẽ campeſtribus, & cultis.

Flos Solis Indicus etiam Europæ à multis annis innotuit eiusque magna conſpicitur varietas in magnitudine foliorum, & floris, in altitudine & craſſitie caulis, in colore florum, qui quandoque albus reperitur.

Conſulendus etiam Monardes cap. 68. vna cum notis Clusij.

De

I'm not going to leave here ever, ever again … There's no place like home!
(DOROTHY)

KANSAS STATE WILDFLOWER

Francisco Hernandez (1517-1587): *Rerum medicarum novae Hispaniae thesaurus seu Plantarum, animalium, mineralium Mexicanorum historia*. Rome: ex Typographeio Vitalis Mascardi, 1651. *Summerfield E1025*

The sunflower is one of those natives that went far away from home for a long time before coming home for good - and for good eating. The "chimalatl peruina" is the *Helianthus annuus* and is not from Peru at all: the southern limit for both wild and cultivated forms is northern Mexico. It was just one of the many plants introduced to Europe soon after the Discovery.

A garden curiosity at first, it was commonplace in England by the early 1600s and soon became a popular food plant: the heads were eaten like artichokes, the buds were said to be tasty, but the seeds were not eaten for another hundred years. Hernandez claimed that overindulgence would cause a headache, which must at times have interfered with the aphrodisiac properties ascribed to it.

The sunflower realized no great economic success until it reached Russia near the end of the 1700s, where being from elsewhere it was not on the list of foods with high oil content prohibited during Lent. And it was not until the end of the 19th century that the popular variety known as Mammoth Russian was developed and came back to the home of its ancestors. Because two-thirds of all cultivated sunflowers are grown in the former Soviet Union, many people assume it is native there. For various reasons both economic and biological our Great Plains crop has not been very competitive on the world market: a plant has natural enemies where it is native, mostly insects and fungus, but new disease-resistant hybrids are being developed and it may yet turn out to be a good oil crop. And sunflower seeds rival the peanut in popular American taste.

This is the third edition, the only complete version with all the illustrations, of the first published work on the plants of Mexico. Hernandez was sent to the New World by Philip II of Spain to survey the plant and animal resources of "New Spain" (Mexico). Several factors were in his favor for completion of his overwhelming task: Aztec names for many plants reflected habitat and properties; local doctors and herbalists came to his aid; the Aztecs had recorded a great deal in pictograph form that was still legible by educated

locals. Because Hernandez recorded names of plants in several native languages, this work is Spanish gold to linguists and ethnologists. Were it not for Hernandez, much of the Badianus manuscript (cited earlier in these pages) might not have been decipherable.

Our copy of this volume is signed on the front free end-paper, Di Michel Angelo Tilli, possibly the Italian physician and botanist (1655-1740) noted for the *Catalogus plantarum Horti Pisani*, Florence, 1728.

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As Dorothy opens the door slowly and peers out, a blaze of color greets her.
(STAGE DIRECTIONS)

AZTECHNICOLOR

Charles Dessalines d'Orbigny (1806-1876): *Dictionnaire universel d'histoire naturelle*. 2. édition. Paris: au Bureau principal de l'editeur, 1841-1849. 13 volumes plus 3 volume Atlas. Atlas vol. 3, chez les éditeurs Mm. Renard, Martinet et Cie. Et chez Langlois et Leclerc, Victor Masson, mêmes maisons; chez L. Michelson à Leipzig, 1849. *Ellis Aves C1528*

Of some 20 species of the Dahlia genus (belonging to the largest family of flowering plants, the Compositae), six or so are ornamentals. All dahlias are native to the Mexico-Guatemala region, where they have been cultivated since very early times. Our common garden dahlia *D. pinnata*, though still around in its wild, single-flower form, has been hybridized and developed into over 2,000 different varieties grouped into over a dozen types.

Special Collections has the three atlas volumes of this *Dictionnaire* only. Because of the beauty and accuracy of its hand-colored copper-plate etchings, it is one of the best, if not THE best of the illustrated encyclopedias of the 19th century.

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Box turtle belly shell – Argonia, Kansas

What makes the Hottentot so hot? …
What have they got that I ain't got? (COWARDLY LION)

THE HERB FROM HELL

Johann Zorn (1739-1799): *Icones plantarum medicinalium*. 2. Ed. Nürnberg: auf Kosten der Raspischen Buchhandlung, 1784-1890. 6 volumes. Vol. 3, 1786. *Linnaeana C84*

Going for the burn with the hotter varieties of the *Capsicum* genus takes more courage and intestinal fortitude than many of us cowardly lions have; Europeans sailing for the New World to find spices got more than they bargained for when, in what must have been the gastronomic equivalent of a bungee jump, they took that first bite of a habanero pepper. The genus, which includes the sweet peppers as well as the chilis, probably originated in present-day Bolivia, and peppers were consumed by Mesoamericans in 7000 B.C.

The last Aztec emperor, Montezuma, got his endorphin high in the morning, not by jogging up the Temple of the Sun, but with a breakfast brew of chocolate and hot chilis; this concoction may also have helped rid him of parasites.

Because other edible New World members of the nightshade family, such as tomato and potato, were long considered risky eating and probably poisonous because of their resemblance to the Old World nightshades, it's quite amazing that chilis caught on and spread, yes, like wildfire, after Columbus put the plants on board on his first trip home.

It would be quite natural to conclude that when one began to sweat, when eyes watered, saliva salivated, and tongue went numb, that one's number was up. We know now that this is all the result of endorphins kicking in to block pain caused by the alkaloid capsaicin. So why did the same Gods who gave us cacao also give us the herb from hell? One explanation is that the seeds of chilis eaten by some mammals, e.g. rabbits, are destroyed in the animal's digestive tract, never again to see the light of day, so as luck would have it rabbits don't like peppers; birds, on the other hand, can take the heat and seeds are dispersed in their droppings.

I think that's more of a gift to the peppers than to me personally and I'll get my vitamin C from other veggies, thank you, like da wabbit.

MONTEZUMA'S REVENGE MEETS DEHLI BELLY: Today India is the country exporting the most *Capsicum*; indeed it's hard to imagine a lot of Old World cuisine without New World additions: it's America's paprika, after all, that gives Hungary's goulash its courage.

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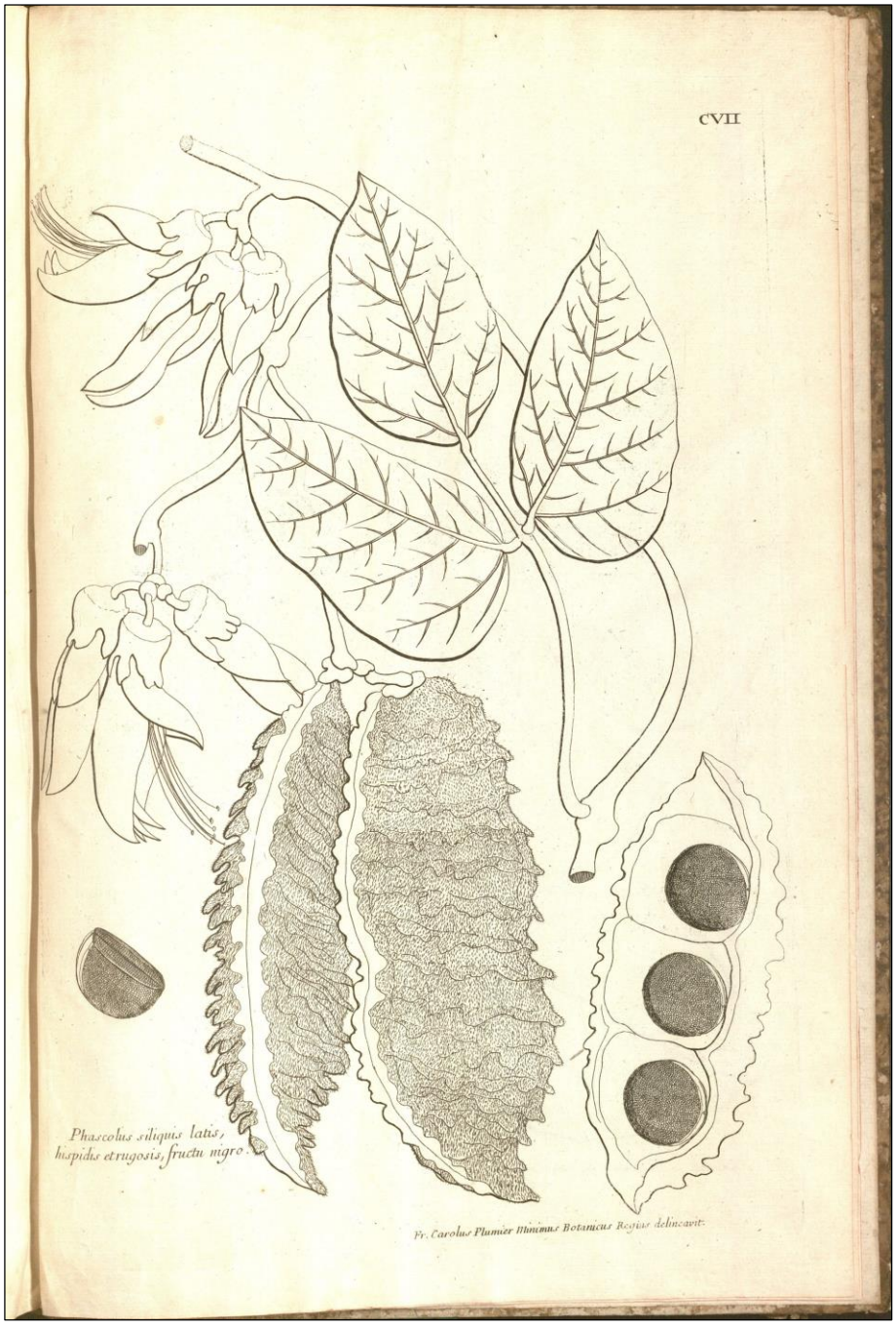

It's very tedious being stuck up here all day long with a pole up your back. (SCARECROW)

THE MORE YOU EAT THE BETTER YOU FEEL

Charles Plumier (1646-1704): *Description des plantes de l'Amerique*. A Paris: de l'Imprimerie royal, 1693. *Summerfield G209*

Food crops in the Old and New Worlds developed independently; the only ones common to both at the time of the Discovery were the coconut palm and a few kinds of gourds. The real interchange didn't begin until 1492. Because of the application of European names to New World crops, confusion arises about the origin of many plants.

The classic example is pepper: Old World black pepper and New World chili pepper are not even closely related. The same goes for beans. The broad bean *Vicia faba* and soy *Glicine max* are the only Old World beans of importance; all the rest are of New World origin, especially in the genus *Phaseolus*: the scarlet runner *P. coccineus*; French or kidney beans *P. vulgaris*; butter bean *P. lunatus*; and the jack bean *Canavalia ensiformis* are all South American natives.

French botanist and traveler Plumier made a trip to the Antilles in 1689. He is credited with a number of genera preserved by the father of botanical nomenclature, Carl Linnaeus. Note the pre-Linnaean polynomial phrase name for this *Phaseolus*: before the 18th century when Linnaeus established a uniform method of referring to species (both plant and animal) by two names in Latin or Greek form – no matter what the language of description or country of origin – scientific names were as inconsistent as common names and there was no central clearinghouse to bring order out of chaos.

The consistent use of binomials began with Linnaeus's *Species plantarum*, 1753; even Linnaeus's names before 1753 are considered "pre-Linnaean".

The Department of Special Collections has the second largest collection of books by and about Linnaeus in the United States and it continues to grow.

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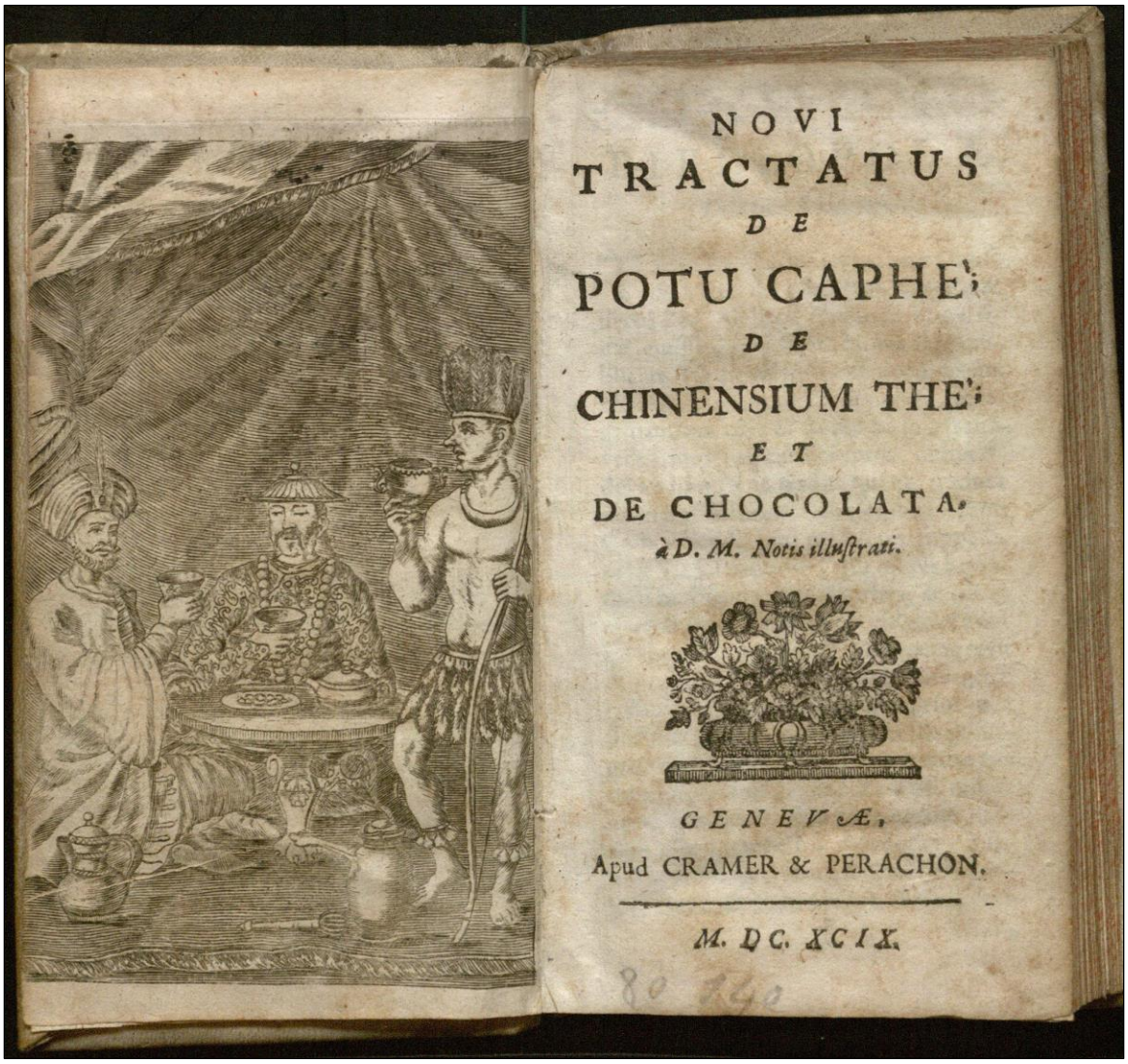

NOVI
TRACTATUS
DE
POTU CAPHE;
DE
CHINENSIUM THE;
ET
DE CHOCOLATA.
à D. M. Notis illustrati.

GENEVÆ,
Apud CRAMER & PERACHON.

M. DC. XCIX.

I'm melting! I'm melting! … What a world! Who would have thought a good little girl like you could destroy my beautiful wickedness! (WITCH)

AND COCOA TOO

Philippe Sylvestre Dufour (1622-1687): *Novi tractatus de potu caphé; de Chinensium thé; et de chocolata*. Genevae : apud Cramer & Perachon, 1699.
Summerfield A993

My father used to say that there was too much chocolate in the world and it was on his Quaker conscience to do all he could to get rid of it. And we may have too much chocolate in this exhibition at the expense of other interesting foods from our stock of native species, but it is so beautifully wicked, and one of the most important New World contributions to the Good Life. For those of

you who can resist anything but temptation, rest assured that cocoa is a highly nutritious drink, and stimulating as well because of its constituent alkaloids caffeine and theobromine. And in drink form it's not always melting, melting in your hand.

My chocolate consuming father did battle with the stuff for all of his almost eighty years, which coincidentally is the life expectation for *Theobroma cacao*, the tree whence it comes.

Cocoa was imported early on from the neo-tropical rainforests of the Orinoco and Amazon Rivers into Mexico where it was an everyday drink well before the Discovery; the beans were used as currency. It was introduced to Europe in 1526, and from the looks of it the Indian who posed for this copper-plate might have been invited along for the trip because he's standing next to a decidedly European-looking chocolate-pot, although by this time such contraptions had probably made it into the Wild West. The frontispiece of this little volume shows a Turk, a Chinese gent and an American Indian. All drinking together. Coffee. Tea. And cocoa too.

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Iron pyrite

They are vſed to be eaten roſted in the aſhes; ſome when they be ſo roſted, inſuſe them, and ſop them in wine: and others to giue them the greater grace in eating, do boile them with prunes, and ſo eate them. And likewiſe others dreſſe them (being firſt roſted) with oile, vineger and ſalt, euery man according to his owne taſte and liking: notwithſtanding howſoeuer they be dreſſed, they comfort, nouriſh, and ſtrengthen the bodie, procure bodily luſt, and that with greedineſſe. D

Of Potatoes of Virginia. *Chap.* 335.

Battata Virginiana ſiue Virginianorum, & Pappus.
Potatoes of Virginia.

✻ *The deſcription.*

VIrginia Potatoes hath many hollowe flexible branches, trailing vppon the grounde, three ſquare, vneuen, knotted or kneed in ſundry places at certaine diſtances; from the which knots commeth foorth one great leafe made of diuers leaues, ſome ſmaller, & others greater, ſet togither vpon a fat middle rib by couples; of a ſwart greene colour tending to rednes. The whole leafe reſembling thoſe of the Parſnep, in taſte at the firſt like graſſe, but afterward ſharp & nipping the toong: from the boſome of which leaues come foorth long rounde ſlender footſtalks, whereon do grow very faire and pleaſant flowers, made of one entire whole leafe, which is folded or plaited in ſuch ſtrange ſort, that it ſeemeth to be a flower made of ſixe ſundrie ſmall leaues, which cannot eaſily be perceiued, except the ſame be pulled open. The colour whereof it is hard to expreſſe. The whole flower is of a light purple color, ſtripped down the middle of euery folde or welt, with a light ſhew of yellownes, as though purple and yellow were mixed togither: in the middle of the flower thruſteth foorth a thicke fat pointell, yellow as golde, with a ſmall ſharpe greene pricke or point in the middeſt thereof. The fruite ſucceedeth the flowers, round as a ball, of the bignes of a little bulleſſe or wilde Plum, greene at the firſt, and blacke when it is ripe; wherein is contained ſmall white ſeede, leſſer than thoſe of Muſtarde. The roote is thicke, fat, and tuberous; not much differing either in ſhape, colour or taſte from the common Potatoes, ſauing that the rootes hereof are not ſo great nor long; ſome of them round as a ball, ſome ouall or egge faſhion, ſome longer, and others ſhorter: which knobbie rootes are faſtened vnto the ſtalkes with an infinite number of threddie ſtrings.

✻ *The place.*

It groweth naturally in America where it was firſt diſcouered, as reporteth *C. Cluſius*, ſince which time I haue receiued rootes hereof from Virginia, otherwiſe called Norembega, which growe and proſper in my garden, as in their owne natiue countrie.

✻ *The*

This is a spell, this is! (SCARECROW)

YOU SPELL IT POTATOE AND I SPELL IT POTATO

John Gerard (1545-1612): *The herball or Generall historie of plantes*. Imprinted at London: by Iohn Norton, 1597. *E260*

A hearty meal with rowdy KU friends at Don's Steakhouse *[requiescat in pace]* a while ago, turned mean when one of the party, a history student, declared it a medieval banquet and threw his turkey bones on the floor. "There were no turkeys in medieval Europe" we muttered under our corn-whiskey breath as we buttered our potatoes.

The situation degenerated further into a heated discussion of ancient and medieval terminology for the foods we were eating: "What did the Romans call the potato?"

The Latin today is *Solanum tuberosum* (not *Battata virginiana, etc.*) but neither the potato nor its name ever burned Roman tongues. From the grits to the catfish to the tapioca, our meal was decidedly New World. The potato didn't reach Europe, in fact, until relatively long after the Discovery, when conquistador Francisco Pizarro (born circa 1470, died 1541) returned to Spain with spuds in the hold. Written descriptions of the potato appear in the mid-1500s, but this is the first printed illustration of the white potato.

And give ole Dan Quayle a break ('potatoe' indeed, but it was from Latin America and as he himself said, he didn't speak Latin).

And John Gerard also was misinformed: as early herbals go, this one did not have a reputation for accuracy or objectivity, but is important for its many firsts in describing and depicting New World plants. "Virginia", like "Irish" potato is a misnomer; home for the potato is the temperate Andes of South America where 5,000 varieties have been domesticated for 10,000 years. Today along with our New World maize, the potato is vying with wheat and rice for the title Most Important Food Crop in the World: acre for acre it produces more calories and high-quality protein than any of the other three.

The potato is a member of that fascinating family, the nightshades, that includes other New World plants such as tobacco, tomatoes, peppers, and

petunia, as well as Old World eggplant. The sweet potato *Ipomoea batatas*, also depicted here, is of American origin, but is not in the potato family at all; because of the superficial resemblance of the tuber, our white potato took the Haitian name for the sweet potato, *batata*. The yam is of African origin and unrelated to the other two.

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Look at you Zeke – you're just as white… (HICKORY)

WHITE ANGLO-SAXONS

Mark Catesby (1683-1749): *The natural history of Carolina, Florida, and the Bahama Islands*. London: Printed at the expense of the author: and sold by W. Innys; R. Manby; Mr. Hauksbee, and by the author, 1729-1743 [i.e. 1729-1747] 2 volumes. Vol. 1. *Ellis Aves H1*

Most vanilla white Anglo-Saxons who sit down to a dish of vanilla ice cream with chocolate syrup, peanuts, and pineapple on top, don't even think about the fact that in pre-Columbian times this New World sundae wasn't even the stuff of fantasy. Vanilla and chocolate have been closely allied since the Aztecs used the former to flavor the latter and commerce in the two picked up during the Spanish colonial period. Unfortunately the Anglo-Saxons of the same period were unaware of the charms of vanilla and dumped cargoes of it into the ocean whenever they took control of a Spanish ship, until late in the 1600s.

Vanilla fragrans (or *planifolia*) is the scientific name for this climbing orchid native to Mexico and the West Indies, but now grown in a number of tropical countries where rainfall is abundant. Vanilla is extracted from the pods (vanilla beans) by careful curing during which process a glycoside in the bean, coniferin, is converted by enzyme action into vanillin; this crystalline substance accumulates on the outside of the pod from which it is extracted with alcohol. Vanilla substitutes made from coniferin-containing waste liquors of the paper-pulp industry taste as phony as Milli Vanilli.

The author of this most famous of color-plate books of New World plants and animals first arrived on American shores when he was pushing thirty; a self-taught naturalist, he made notes and sketches of the vegetation and wildlife of Virginia and at the end of seven years took a sabbatical and went home to England. His seven-year-itch satisfied, he soon returned to America for more exploration and began work towards publication of this book which became the most authoritative treatment of the natural history of British North America before the Revolution.

Like so many of the early adventurers and naturalists, Catesby couldn't afford artists and taught himself the art of engraving. With the exception of three plates executed by German artist G.D. Ehret, he hand-colored the lot; there were 220 plates in each of 156 sets: that made for a grand total of 34,320. Not bad for a white boy.

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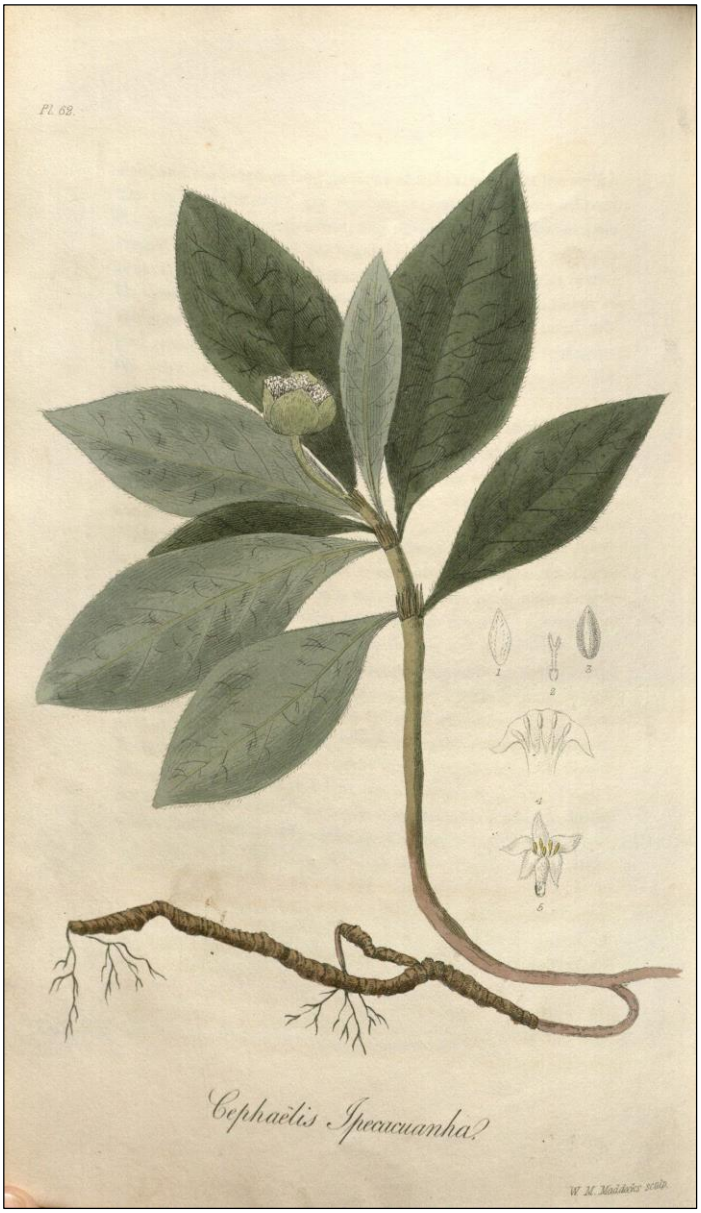

Oh, I don't like this forest! It's dark and creepy! (DOROTHY)

TRIAL AND TERROR: MEDICINES FROM THE NEW WORLD

John Stephenson (1790-1864) and **James Morss Churchill (1796? - 1863):**
Medical botany. London: John Churchill, 1827-1831. 4 volumes. Vol. 2, 1831.
Linnaeana C390

As we all learned in grade school, when Columbus's adventure began, Venice had a stranglehold on the drug and spice trade, and Portugal had discovered a trade route to the East Indies. The Columbian expedition was nothing less than an attempt to break the Venetian monopoly and to get a jump on the Portuguese. But Columbus was not a botanist and bemoaned the fact that neither he nor his men had the knowledge to take advantage of what they were seeing; but his reports stimulated the desire in later travelers to study the medicinal uses of New World plants.

As Charles H. Talbot has noted, much of the information that began to flow back into Europe, even from real botanists, was often couched in terms of what was known of European species, and more often than not was haphazard, inaccurate, and misleading for those who followed. Added to this was the problem of transportation: those species that did get taken back were often destroyed or had rotted en route, or had, out of the collector's ignorance, been picked at the wrong time of year or were otherwise useless by the time they reached foreign shores.

No one could tell, even after repeated experimentation, whether an herb was *really* pharmacologically inactive or had simply lost its potency in transit. Physicians became wary when a drug didn't produce the effect predicted - or – when it killed the patient. Progress was so slow that in spite of a huge number of New World species reputed to be used with success by the Indians, only a handful had been completely accepted by the end of the 1500s, among them guaicum for that New World scourge syphilis, sassafras, and the 'cure-all' tobacco. All of these lost favor as time proved them ineffective and belief in their curative powers waned. Even the one real success story, cinchona, had its doubters until its alkaloid quinine was isolated in 1820.

Talbot laments that on the whole, although the New World had much to offer for the experimenting, a combination of ignorance, exaggerated claims,

Eurocentrism, unscientific observation, medical conservatism, and physicians' lack of confidence (for which one could hardly blame them), the ones to benefit the most from the early drug trade were the unscrupulous, the quacks.

This slowness to recognize the need for study of plants for biologically active substances is still with us. KU's own Kelly Kindscher, author of the 1992 *Medicinal wild plants of the prairie*, noted then that it is estimated that only five to 15% of the world's higher plants had been analyzed for their potential medicinal value, and many of those for only one type of cure.

Ipecac, *Carapichea ipecacuanha* is a major New World success story, though to a lesser degree than cinchona. Native to western Brazil, Bolivia, and Central America, it contains the alkaloid emetine and was prescribed extensively as a specific for amoebic dysentery after it was brought to Europe by Willem Piso in the mid-1600s. Today it is used for emergency treatment of severe croup and in larger doses to produce vomiting, especially after poisonings.

***

Quartz

You don't suppose she could really be sick, do you? (DOROTHY)

A CURE FOR MALARIA

Ebenezer Sibley (1751-1800): *A key to physic, and the occult sciences* [with] *Appendix to Culpeper's herbal.* London: printed for the author, and sold by Champante and Withrow, and at the British Directory Office, 18--. *D2227*

The New World was a land of New Hope to the physicians and druggists of a sick and sorry world in the 15th century. Unfortunately, although a veritable pharmacopoeia of new and potentially useful drug plants existed in the Americas, their overall influence in the first three centuries post-1492 was negligible for various reasons: with the grand exception of Cinchona. There was a great old axiom that where there was a disease, there, too, the Great Wizard had planted an herb for man's use against it: but with the Discovery old ideas were falling daily to exceptions that disproved the rule, and ironically, malaria, the disease so closely associated with cinchona was not aboriginally a New World disease. Whether early Peruvians had other medical uses for 'Peruvian' or 'Jesuit's bark', is not known.

Every school kid knows the story of how the Countess of Chinchon, wife of the Viceroy of Peru, was cured of an attack of malarial fever (contracted in the Old Country?) in the 1630s by the use of the bark of this evergreen, and that the genus was named in her honor.

Cinchona is one of the New World's most important contributions to medicine, not only for its anti-malarial alkaloids, such as quinine – isolated first in 1820 – of the several Cinchona species, but for quinidine, the action of which is similar to the Old World's *Digitalis* for treatment of heart arrhythmias. The powdered bark has been used as a dentifrice in both Europe and North America before the availability of toothpaste, and quinine serves as a hardening agent in the treatment of varicose veins and hemorrhoids; both quinine and quinidine are powerful uterine stimulants. In Bolivia a tonic is made from the bark of two species.

After World War II, synthetics and other drugs replaced quinine as more effective anti-malarial agents, but the disease still runs rampant and health workers now have to tailor their treatment to the locality, depending on the nature of the local mosquito vector; living conditions of the local human population; and the virulence of the local malarial parasite.

The Key to Physic was intended as a supplement to *The family physician* of Nicholas Culpeper (1616-1654), and is a combination of traditional medicine combined with astrology and the medical fad of the late 18th century, electro-therapeutics. The Appendix contains additions to Culpeper's herbal and a number of beautiful botanical plates.

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Zeke, Hunk, and Hickory (THE FARMHANDS)

MICHAUX, MON BEAU

Françios André Michaux (1770-1855): Histoire des arbres forestieres de l'Amerique septentrionale. Paris: Printed by C. d'Hautel, 1810-1813. 3 volumes. Vol. 3, 1813. *Ellis Omnia D548*

The three Michaux plates shown here (of sugar maple, pecan and black walnut) are all from the original edition, in French, of the first illustrated sylva, or tree book, of North America; it was limited to 400 copies. French botanist and intrepid explorer Michaux came to these shores in 1785 and remained for twelve years, but on the return trip to France he was shipwrecked and lost almost all of his American collections. After medical studies and a stint with the French Revolution he returned to U.S. soil in 1801 to collect trees on behalf of the French government, exploring the East and Midwest before returning to France in 1809.

IN DA NAME OF DA LOLLIPOP GUILD

Until the 19th century when sugar cane became the most common sweetener in the land, maple syrup, and sugar from both the sugar maple *Acer saccharum* and black maple *A. nigrum* were king. For local domestic production today, methods very similar to those used by Native Americans are still used in the 'sugaring-off' process. The maple flavor hasn't caught on outside North America, however, so the Lower 48 and Canada are the primary consumers of maple sugar products.

DON'T LET GEORGE DO IT

The native nut, the pecan *Carya illinoensis*, like maple sugar, seems to be most appreciated in its home territory; in other places such as Great Britain, it is said to rate far behind other nuts including another New World native, the Brazil nut. The pecan was originally indigenous to the Mississippi Valley but now grows through much of the southern half of the states and is the state tree of Texas. Pecans are the largest tree in the hickory genus and commercially our most valuable native nut tree.

THE NUT OF "TOO TOUGH TO CRACK" FAME?

The black walnut *Juglans nigra*, a native of North America, was introduced into Britain in the late 1600s, but the nut itself, usually larger than the English

walnut, had a shell too thick and hard to be cracked with any delicacy with an ordinary nutcracker, so it was unpopular with the English.

{Late bulletin}: I'd heard tell of a special American nutcracker invented for this walnut, but having never seen one I suspected it was just another frontier Tall Tale. But at least one soul (on Google, a reference tool not available when this exhibition first saw the light of day) swears that a 7 or 10 inch pliers wrench will do a dandy job with the shell of *J. nigra*.

***

They come for miles around just to eat in my field ... and laugh in my face. (SCARECROW)

CORNIER THAN KANSAS IN AUGUST

Salomon Schinz (1734-1784): *Anleitung zu der Pflanzenkenntniss*. Mit hundert Pflanzen-Tafeln. Zürich: in Verlag des Waysenhauses, 1774.

Linnaeana G16

America: where your head may be straw and your ass may be grass if you eat too many corn fritters, tortillas, corn muffins, corndogs, corn pone, grits, all kinds of stuff from Kellogg, Fritos, popcorn, Cracker Jack, corn-on-the-cob, hominy, to say nothing of that good ol' mountain dew.

But corn alone shouldn't get a bum rap, for the grass family has provided our world with its three most important food crops (the other two are wheat and rice). Archaeological evidence shows that maize production originated in southern Mexico before the Discovery. Columbus took maize back to Europe where it spread quickly and was an important component of the diet by the end of the 1600s in Spain, Portugal, Italy, and Africa. In British latitudes summer is not long enough for corn to ripen well, so from corn, at least, it's not so easy to develop a London derrière.

At the beginning of the 1960s the Old World became cornier than the New for the first time in history. Before then acreage devoted to maize production was highest in the USA (although Argentina exported more). In the Neo-tropics under favorable conditions corn will yield two or three times more than any other cereal crop, but for much of Europe until fifty years ago there wasn't much benefit from a maize crop and it was imported largely in the form of corn-fed meat. But in the 20th century both pure and applied sciences took advantage of the versatility of maize so that New World acreage is now below that of the Old. Maize may yet turn out to be the New World's Greatest Gift to the Planet, but I'd still vote for chocolate and vanilla.

Nutritional value must be taken into account as much as our ability to increase production and as a protein source maize falls short of other cereals. Human populations whose diet is based too exclusively on corn tend to suffer from a niacin deficiency known as pellagra. Niacin, of course, is used as a supplement to raise the level of HDL or high-density lipoprotein (Good Cholesterol), in the blood, and corn oil is one of the best of all vegetable fats in controlling harmful LDL or low-density lipoprotein.

In 1542, just half a century after the Discovery, German botanist Leonhart Fuchs produced a beautiful folio herbal *De historia stirpium*; but the hefty volume was expensive, with its 500-some full-page woodcuts, and was unwieldy as a field guide, so subsequent editions were smaller. One hundred of the cuts made a reappearance in 1774, their final one, in fact, in this work by Swiss botanist and physician Schinz. The only apparent difference in the plates is the removal of the original printed plant names and the printing of new ones.

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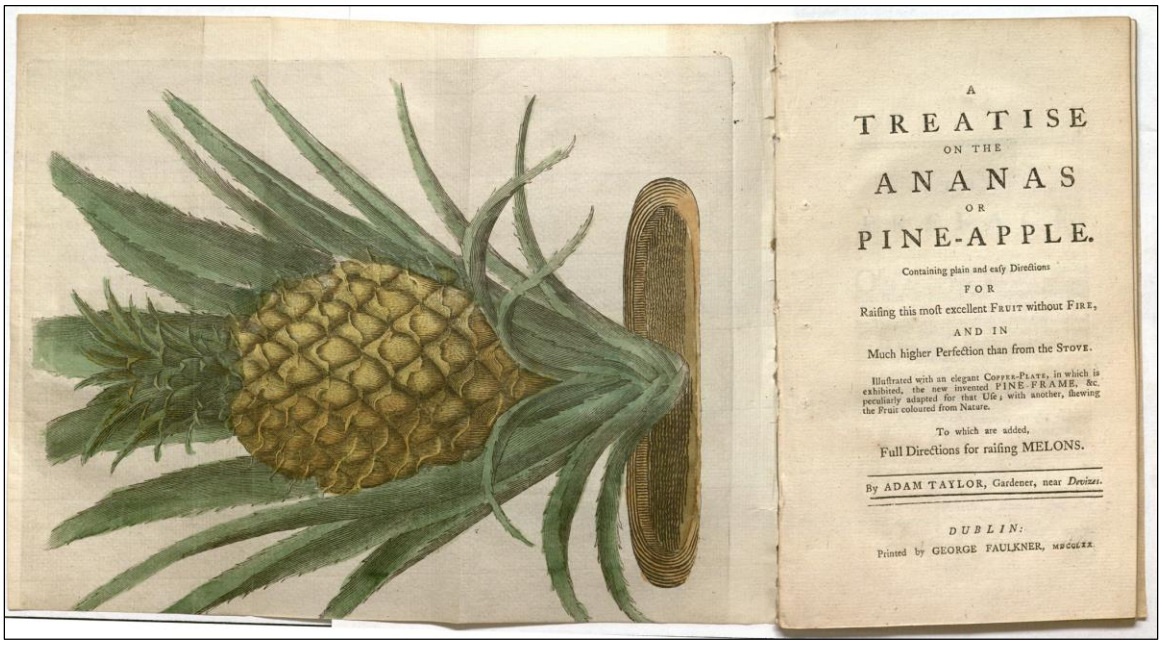

A
TREATISE
ON THE
ANANAS
OR
PINE-APPLE.
Containing plain and easy Directions
FOR
Raising this most excellent FRUIT without FIRE,
AND IN
Much higher Perfection than from the STOVE.
Illustrated with an elegant COPPER-PLATE, in which is exhibited, the new invented PINE-FRAME, &c. peculiarly adapted for that Use; with another, shewing the Fruit coloured from Nature.
To which are added,
Full Directions for raising MELONS.
By ADAM TAYLOR, Gardener, near *Devizes*.
DUBLIN:
Printed by GEORGE FAULKNER, MDCCLXX.

I'll show you how to get apples. (SCARECROW)

YES WE HAVE NO ANANAS

Adam Taylor (18th century): *A treatise on the ananas or pine-apple*. Dublin: Printed by George Faulkner, 1770. *Howey C998*

Adam "Green Thumb" Taylor wrote this manual in hopes of encouraging the gardeners of Great Britain to grow pineapples, which he felt could be done without artificial heat. He writes, "The ananas or pineapple, in deliciousness of taste and exquisite flavor, so far exceeds all other fruits, that the production of

it in any tolerable degree of excellence is become the fashionable test of good gardening."

Unfortunately, Taylor and all the formerly fashionable others failed the test.

Columbus first encountered pineapples on his second voyage to the Americas in 1493, and it was the most enthusiastically received of all New World fruits taken to Europe. Native to South America, *Ananas comosus* is now widely distributed in the tropics. The most important growing spot is in Hawaii, but the fruit can be grown in greenhouses in the Temperate Zone. The "apple" is formed by the coalescence of the fruits of 100 some flowers. Because the leaves in most varieties have sharp spiny edges, the movements of workers, local hemp growers, and scarecrows are hampered and varieties with smoother edges have been developed.

***

The witch is in the shadows behind one of the trees. She slinks away. (STAGE DIRECTIONS)

QUEEN OF THE DEEP BLUE SEA

Griffith Hughes (1707-circa 1758): *The natural history of Barbados*. London: Printed for the author; and sold by most booksellers in Great Britain and Ireland, 1750. *Ellis Aves G42*

The lyricist of the kitschy 1950s pop tune "Papaya Mama" ("Queen of the deep blue sea") probably hoped to tenderize the object of his affections, be she lady, witch, or shark steak, with this amazing tropical fruit that contains an enzyme capable of breaking down protein.

This herbaceous tree and all its relatives are New World natives. All parts of the plant have commercial value: besides being the most popular raw breakfast fruit of the tropics, papaya can be eaten as a vegetable; sliced into salads; candied; boiled or baked like squash; made into pickles, pie fillings, jellies, and sherbets. And because of its ability to digest meat it is used in the processing of canned meats. Brewers use it to clarify beer.

Hughes's book is an interesting affair bibliographically and our Ellis Collection contains three variants. This large-paper copy has the hand-colored plates (colored copies are apparently the exception); another large-paper copy has duplicate facing plates, colored and uncolored; the third Kansas copy, in Royal quarto, is uncut and measures 15 x 9.7". Its plates are uncolored and it lacks the paste-on errata slip present in the other two copies. Although it was common to print both large and small paper copies, it was not common to print them in different formats as this required a reimposition of the type.

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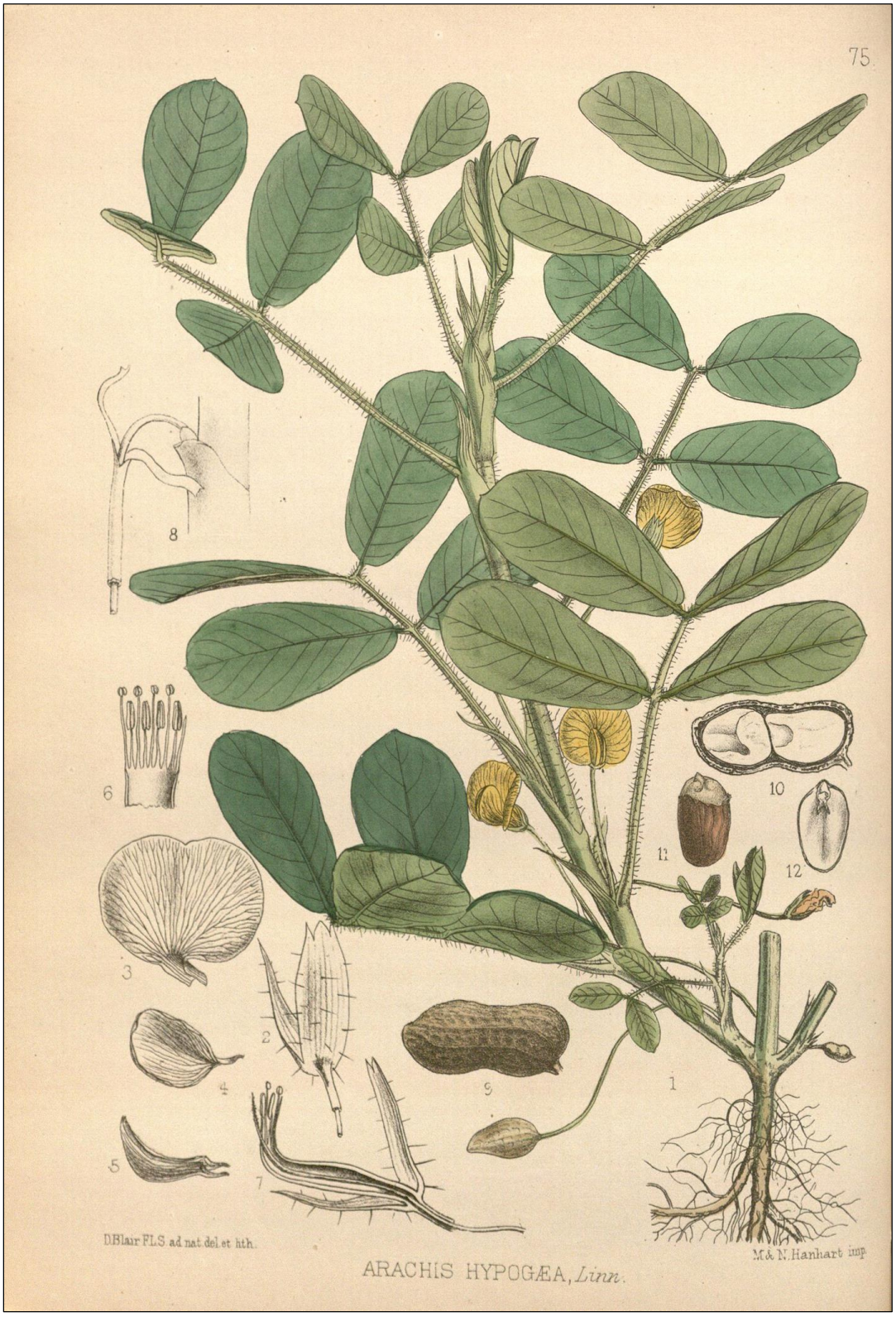
Crinoid stem – Southeastern Kansas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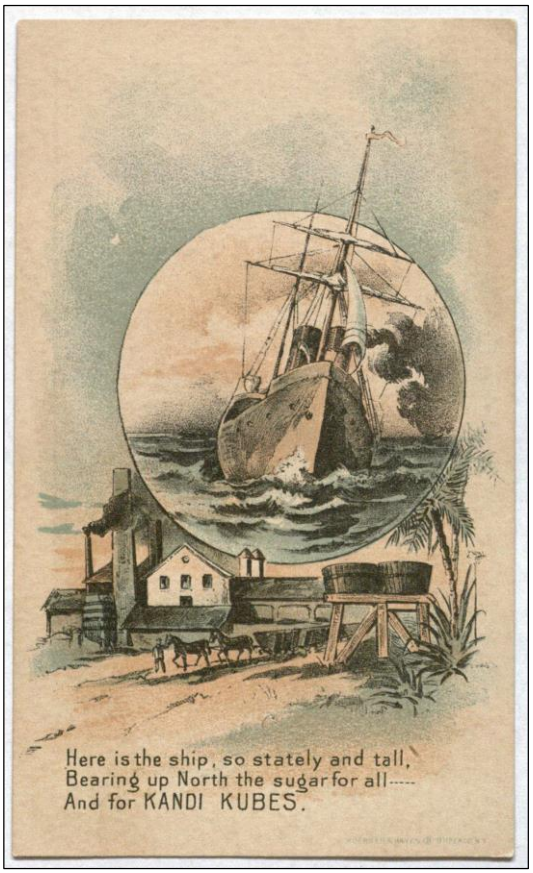

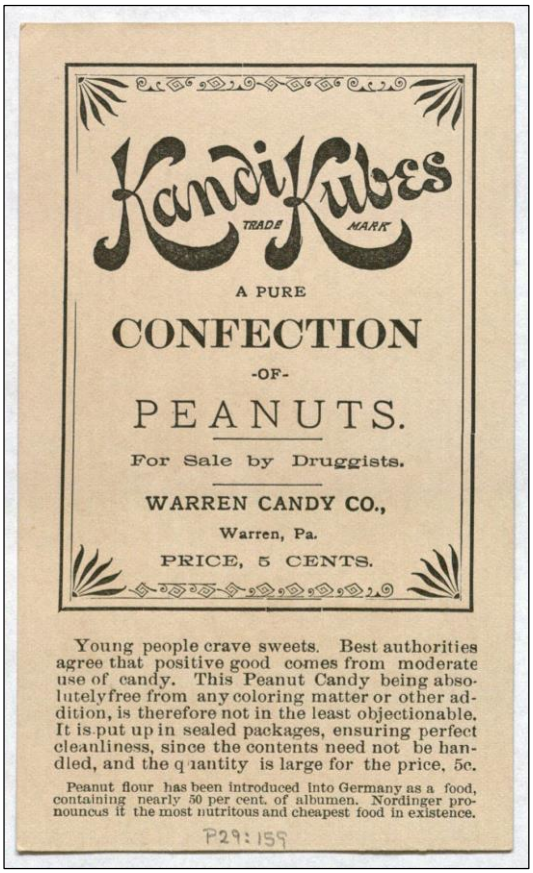

Ha! How long can ya stay fresh in that can? (COWARDLY LION TO TIN MAN)

EATING GOOBER PEAS

Robert Bentley (1821-1893): and **Henry Trimen (1843-1896):** *Medicinal* plants. London: J. & A. Churchill, 1880. 4 volumes. Vol. 2. *C7961*

The peanut *Arachis hypogaea*, is so widely disseminated today in the Old World that until primitive forms of it were found in Peruvian tombs dating from 2,000 to 3,000 B.C. it was widely assumed to be of Old World origin. By Columbian times it had spread throughout South America, the Caribbean, and Mexico; it reached Africa circa 1500 thence to North America in the 1600s. India and China lead in production today, but Japanese peanuts give the biggest yield.

Known also as ground nuts, monkeynuts, goobers, and earthnuts, only in the USA does most of the crop go into the eating: peanut butter (50%); salted peanuts (20%); peanuts added to candy (16%); and the rest as oil.

But the peanut-butter sandwich in the lunch-box was unknown to European school-kids of my generation, and may still be: when this writer was at a party in Nürnberg in the 50s (with Ami food from the local US military PX or post-exchange), peanut-butter on crackers was considered exotic and rather classy by our Germans hosts but laughable by the American teenagers in attendance; American popcorn got the opposite reaction: to the Germans it smelled good but was really just "pig fodder". It all made for a great cross-cultural conversation, and there were no left-overs.

And what, you many ask, is the peanut doing in a book of medicinal plants? Messrs. Bentley and Trimen had plenty to say on that subject in 1880. Peanuts are about 25% protein, but deficient in certain amino acids; they're also rich in the B-complex vitamins. But most important for any food, they're soul satisfying. There are some substitutes on the market that, like fake caviars are 'just as good as the real thing, except for the taste'.

In the rest of the world the peanut is used mostly for vegetable oil, but the contents of the Tin Man's oil can could have been peanut oil as well.

Robert Bentley was an English botanist, botanical lecturer, member of the Royal College of Surgeons, and a Fellow of the Linnean Society. The color plates in this four-volume work were lithographed after drawings by David Blair. It was issued in forty-two parts and contained the plants then in the British pharmacopoeia.

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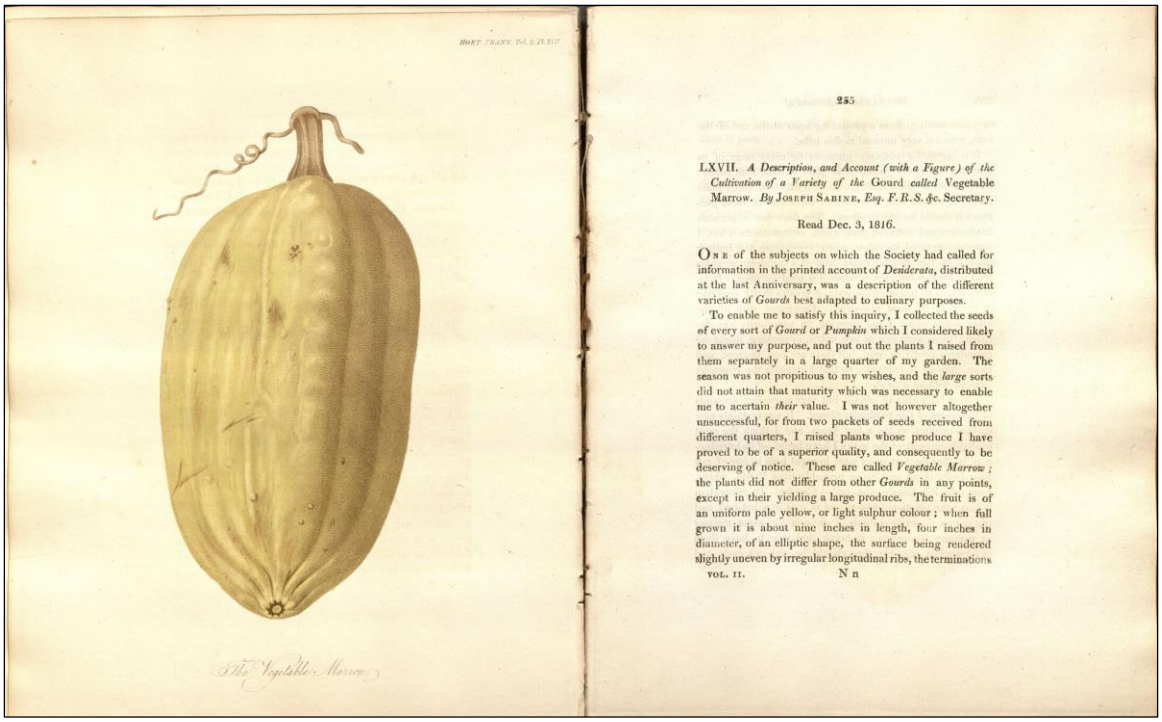
Scoria –Kansas Mesa, near Colbran, Colorado

AS AMERICAN AS …



HORT. TRANS. Vol. II. PL XVII.

The Vegetable Marrow

255

LXVII. *A Description, and Account (with a Figure) of the Cultivation of a Variety of the* Gourd *called* Vegetable Marrow. *By* Joseph Sabine, *Esq. F.R.S. &c.* Secretary.

Read Dec. 3, 1816.

One of the subjects on which the Society had called for information in the printed account of *Desiderata*, distributed at the last Anniversary, was a description of the different varieties of *Gourds* best adapted to culinary purposes.

To enable me to satisfy this inquiry, I collected the seeds of every sort of *Gourd* or *Pumpkin* which I considered likely to answer my purpose, and put out the plants I raised from them separately in a large quarter of my garden. The season was not propitious to my wishes, and the *large* sorts did not attain that maturity which was necessary to enable me to acertain *their* value. I was not however altogether unsuccessful, for from two packets of seeds received from different quarters, I raised plants whose produce I have proved to be of a superior quality, and consequently to be deserving of notice. These are called *Vegetable Marrow*; the plants did not differ from other *Gourds* in any points, except in their yielding a large produce. The fruit is of an uniform pale yellow, or light sulphur colour; when full grown it is about nine inches in length, four inches in diameter, of an elliptic shape, the surface being rendered slightly uneven by irregular longitudinal ribs, the terminations

VOL. II. N n

Good-bye, Professor Marvel, and thanks a lot! (DOROTHY)

AS AMERICAN AS THE GREAT PUMPKIN

Transactions of the Horticultural Society of London. 2d edition. London: Printed by W. Bulmer and Co., sold by J. Hatchard, 1815-1822. 4 volumes. Vol. 2, 1818. *D1075*

It is said that laughter and derision are normal responses to that ridiculous vegetable, the pumpkin, which just goes to show that nothing is sacred: especially not Mom and Pumpkin Pie. This vegetable marrow pumpkin along with various summer squashes are all varieties of *Cucurbita pepo*, native to the New World from Mexico south to Peru. Botanically speaking this incredible hulk is a berry, albeit a large one. The seeds are rich in both fats and proteins and that delicious smell that permeates malls everywhere is of those seeds, called pepitos, frying in oil. Many varieties of *C. pepo* are cultivated as ornamental gourds.

Joseph Sabine (1770-1837), English horticultural writer and secretary of the Royal Horticultural Society at the time that his paper on vegetable marrows

was published, took a serious approach to subjects horticultural. He published the *Transactions*, and most of the activities during his tenure were the fruit of his energy and ambitions, from the dispatching of plant collectors to foreign climes, to correspondence with foreign horticulturists (many of them in the Americas), to the establishment of a garden where he oversaw the growing of fine and improved varieties of many New World fruits, flowers, and vegetables, and to their distribution all over England.

Sabine contributed forty some papers to the Transactions, many about New World plants such as the passion flower, magnolia, dahlia, tomato, and of course our vegetable marrow. Eventually he was forced to resign after incurring enormous debt for the Society, and from there took an active part in the doings of the Zoological Society, contributing a paper to its *Transactions* on the North American marmot.

The hand-colored engravings of this journal, especially of fruits and flowers, are stunning in their beauty and realism; this second edition appears to be quite rare. Like our plants and animals, books with plates often have survival problems, and we can only hope that this edition hasn't become extinct at the hands of unscrupulous plates pirates; the fact that it is difficult to find in bibliographies would, we hope, indicate rather that a very small edition was published, maybe because Mr. Sabine was already running out of money.

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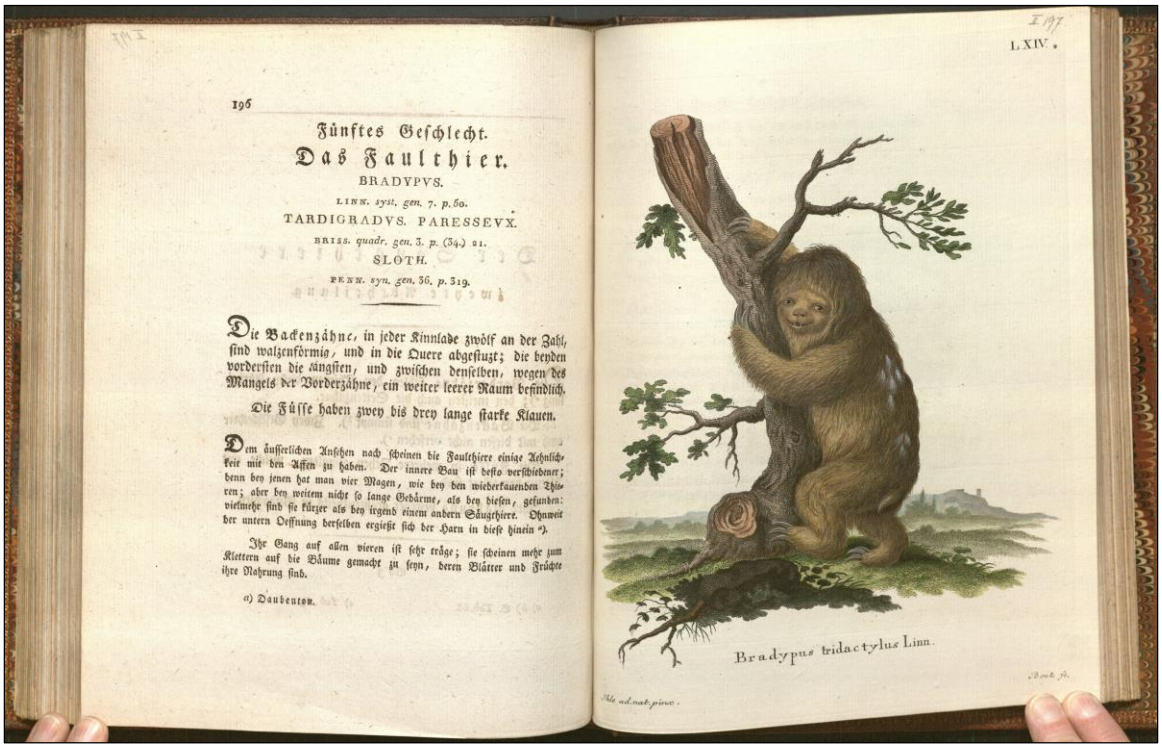
Selenite – Barber County, Kansas



196

Fünftes Geschlecht.

Das Faulthier.

BRADYPVS.

LINN. syst. gen. 7. p. 50.

TARDIGRADVS. PARESSEVX.

BRISS. quadr. gen. 3. p. (34.) 21.

SLOTH.

PENN. syn. gen. 36. p. 319.

Die Backenzähne, in jeder Kinnlade zwölf an der Zahl, sind walzenförmig, und in die Quere abgefluzt; die beyden vordersten die längsten, und zwischen denselben, wegen des Mangels der Vorderzähne, ein weiter leerer Raum befindlich.

Die Füsse haben zwey bis drey lange starke Klauen.

Dem äusserlichen Ansehen nach scheinen die Faulthiere einige Aehnlichkeit mit den Affen zu haben. Der innere Bau ist desto verschiedener; denn bey jenen hat man vier Magen, wie bey den wiederkauenden Thieren; aber bey weitem nicht so lange Gebärme, als bey diesen, gefunden: vielmehr sind sie kürzer als bey irgend einem andern Säugthiere. Ohnweit der untern Oeffnung derselben ergiesse sich der Harn in diese hinein a).

Ihr Gang auf allen vieren ist sehr träge; sie scheinen mehr zum Klettern auf die Bäume gemacht zu seyn, deren Blätter und Früchte ihre Nahrung sind.

a) Daubenton.

LXIV.

Bradypus tridactylus Linn.

Dick fc.

Ale ad nat. pinx.

DOROTHY: ***I can't run anymore … I'm so sleepy … I have to rest for just a minute …***
LION: ***Comin' to think of it forty winks wouldn't be so bad …***

AS AMERICAN AS THE WORK ETHIC

Johann Christian Daniel Schreber (1739-1810): *Die Säugethiere in Abbildungen nach der Natur.* Erlangen: in der Expedition des Schreber'schen Säugthier = und des Esper'schen Schmetterlings Werkes. **Mixed set**, 1792-1846. [Pt. 1: 1826]. 7 parts plus 5 volume Supplement, 1840-1855. Pt. 2, *Das Faulthier*. In der Walther'schen Kunst- und Buchhandlung, 1826?

Ellis Omnia D278

The three-toed sloth, genus *Bradypus*, is in the same order of mammals as the armadillo and the anteater: the Edentata. The 2 genera and 5 species (3 three-toed, 2 two-toed) are restricted to New World tropical rainforests. The sloth's common name says it all: she moves slowly and very little, a rolling stone she ain't, but rather mammal-turned-hammock, virtually unable to walk on the ground.

The artist appears to have caught this one at a private moment - the sloth descends to the ground only to defecate – most unusual for an arborial animal – and that only about once a week. In a wonderful adaptation, the sloth's fur has grooves that harbor green algae; the algae in turn help to camouflage her in her tree-top home and at the same time provide fodder for a particular species of moth.

Unlike so many rainforest mammals, this one has only a stump where you might expect the prehensile tail – long claws are her sky-hooks instead. In spite of the name of the order, the sloth does have five peg-like teeth on each topside and four on each side of the lower jaw. She feeds on the leaves of the forest canopy which are digested in a multi-chambered stomach. Even though the sloth is well hidden and has few predators she is sometimes seen from above and carried away by a harpy eagle. And jaguars snack on sloth whenever they're able to manage it.

Schreber's extensive color-plate work on mammals was close to 80 years in the making with contributions from a number of the most talented Nürnberg artists working during the period; it was continued after his death by George August Goldfuss (1782-1848) and Andreas Johann Wagner (1797-1861).

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Ohh, what a smell of sulphur! (GLINDA, DAINTILY)

AS AMERICAN AS WALT DISNEY

Walt Disney Productions: *Walt Disney's Bambi*. Adapted from Felix Salten, retold by Idella Purnell, illustrated by the Walt Disney Studio. Boston: D.C. Heath, 1944. *Children C794*

It's a good thing that the tomato is a New World species, because folklore has it that tomato juice is the best deodorant for the four parts crotyl-mercaptan four parts isopentyl-mercaptan three parts methyl-crotyl-disulfide solution known to man and dog as skunk-spray, and skunks are found only in the New World: from Canada to the southern tip of South America.

Cartoonists and makers of animated films (always named Walter for some reason) have taken full advantage of this anatomical feature to make their characters as unforgettable to children as their real-life model is to the unfortunate bowser who gets the skunk's dander up. There's *Walt* Disney and *Walt* Kelly – alter-egos respectively of Flower (pictured here) and Frenchy La Belle; and illustrator *Walter* Lanz drew Snuffy the skunk; and let's not forget Warner Bros.'s Pepé le Pew (who could *waltz*) – and all the other pusillanimous pole-cats of Hollywood.

Although some now elderly biologists will claim that they were first turned on to the study of American wildlife by Disney's 'true-life adventure' films such as "Seal Island" (1948) and "The living desert" (1953), just as many more will object to the condescending attitude these popular treatments of the subject exemplify and foster towards our wild animals.

This volume is from the Children's Collection of over 7,000 volumes of late 18th to early 20th century literature for children – including a few mid-century items such as this one – a great resource for the study of social history, history of education, and literature.

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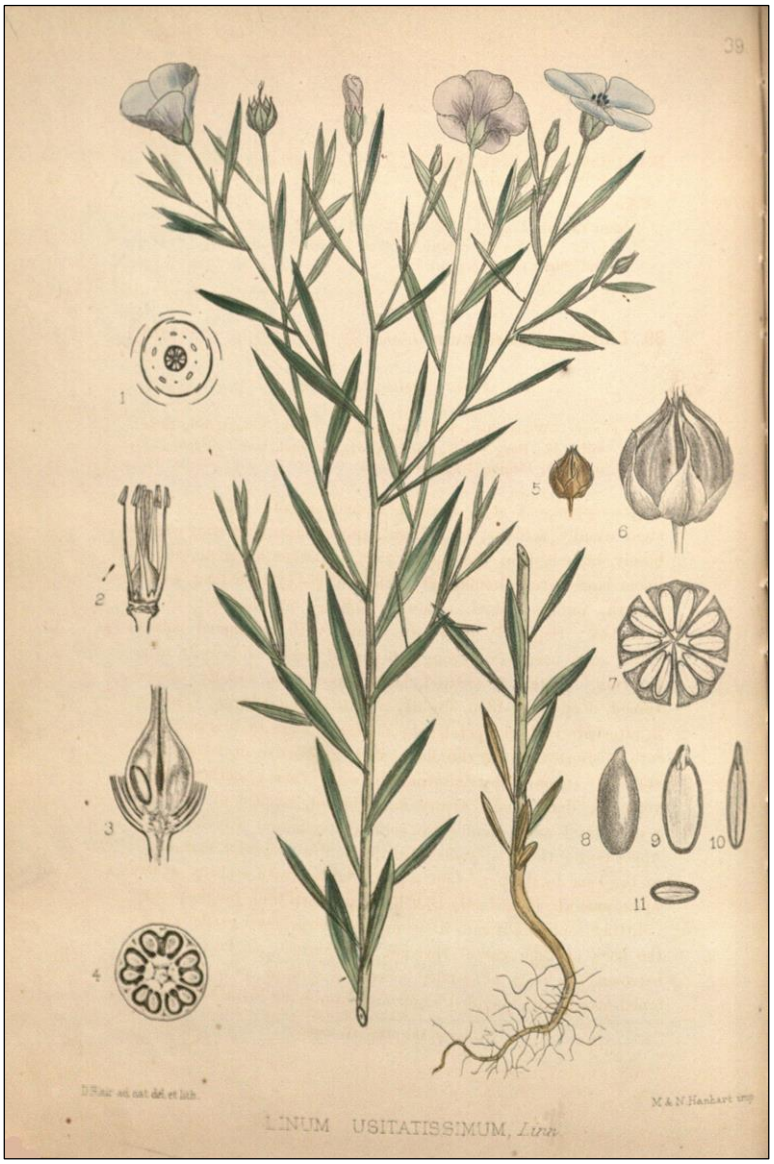

Their magic must be very powerful or she wouldn't want them so badly.
(GLINDA TO DOROTHY)

AS AMERICAN AS COCA- COLA

Robert Bentley (1821-1893) and **Henry Trimen (1843-1896):** *Medicinal plants*. London: J. & A. Churchill, 1880. 4 volumes. Vol. 1. *C7961*

Chants of the prairies, …
Chants going forth from the centre from Kansas …

Take my leaves America, take them South and take them North,

Make welcome for them everywhere, for they are your own offspring,
Surround them East and West, for they would surround you …

So you're afraid that's *Erythroxylon coca* trying to strike up a conversation with you? Cocaine induced paranoia can cause the user to think that insects are burrowing under her skin, or that coca leaves are speaking to her through poetry. But the above lines come not from the Andes nor from some 60s writer in our collection of underground poetry, but from American poet Walt Whitman from *Leaves of Grass*; re-reading Whitman in his memorial year we kept finding our own skewed connections between the prose and poetry of this lover of natural America and our subject, New World plants and animals.

No American plant except *Nicotiana* gets more negative press these days than *Erythroxylon coca,* as the source of the powerful stimulant cocaine. The traditional coca chewing as practiced by the mountain Indians since the days of the Inca Empire (in what is now Peru, Bolivia, Ecuador, and Colombia) helped them live and work at high altitudes. The amount of cocaine in the leaves is small and because of the way in which it was – and is – traditionally used, does not cause as many of the problems of abuse and consequent ill health that we see in the rest of the world today. Andean mountain folk mix the dried leaves with lime or the ashes of the plant *Chenopodium quinoa,* and chew it.

Soon after the alkaloid cocaine was extracted in 1855 it became known as a cure-all: it was indeed a powerful anaesthetic, put to good use as a local in minor surgery, especially eye operations. It is still used in nose and throat surgery because of its ability to cut down on bleeding while it blocks pain. It was once used in small amounts in patent medicines and soft drinks, including the prototype of Coca-Cola. Its short-term pleasant effects and widespread availability soon resulted in abuse and finally the recognition that it could cause serious medical problems and death; by 1914 its use was restricted. In the 60s, after a fifty-year hiatus its abuse began again and went from being the expensive and glamorous "in" drug of the next two decades to the inexpensive, easy-to-find street drug known as crack.

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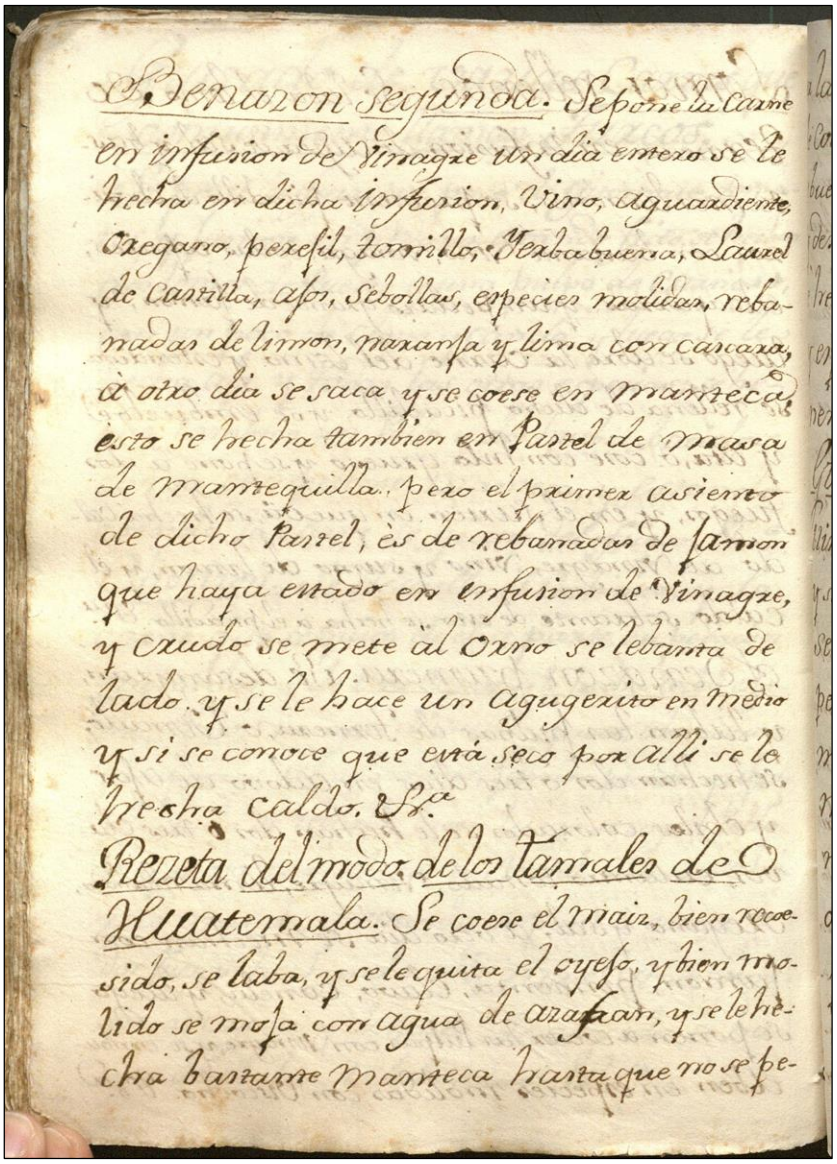

Benazon segunda. Se pone la carne en infusion de Vinagre un dia entero se le hecha en dicha infusion, Vino, aguardiente, Oregano, perefil, tomillo, Yerbabuena, Laurel de castilla, ajos, sebollas, especies molidas, rebanadas de limon, naranja y lima con cancara, à otro dia se saca y se coese en manteca, esto se hecha tambien en Panel de masa de mantequilla. pero el primer asiento de dicho Panel, ès de rebanadas de jamon que haya estado en infusion de Vinagre, y crudo se mete al Orno se lebanta de lado. y se le hace un agugerito en medio y si se conoce que está seco por alli se le hecha caldo. Sr.a

Rezeta del modo de los tamales de Huatemala. Se coese el maiz, bien rocesido, se laba, y se le quita el oyeso, y bien molido se mosa con agua de azafran, y se le hecha bastante manteca hasta que no se pe-

I'll be home in time for supper! (DOROTHY)

AS AMERICAN AS "GOING OUT FOR MEXICAN"

Recetas de cocina mexicanas [manuscript]. Mexico? 17--? *MS C144*

I was one with Richard M. Nixon when he lamented, "I am not a cook!"

As a newly-married Dolly Domestic I could only stare in dismay at both Tricky Dick on the TV and at Grandma's hand-written recipe cards that always stated the obvious "Cook until done", without a word about how this magical end

was to be accomplished. This manuscript is just such a non-cook's recipe for indigestion: long on ingredients, but wanting in the how-to department.

All we know about this delectable piece of research material is that it came to the University of Kansas with apparently no more info about its provenance than what some former owner had written on the cover: "Recetas de cocina mexicanas. Siglo XVIII". So although we are not prepared to swear that it is indeed an 18th century Mexican recipe book, and even though it has the splashes and stains of every authentic cook's cookbook, it is completely legible throughout and we display it in hopes of tempting a student hungry for primary research material on New World foods (with a good admixture of ingredients from the Old Country), to come in and do a project: linguistic, gustatory or otherwise.

Shown here is a recipe for Benazon segunda, presumably left-over venison, and it is full of the strong spices that would be absolutely necessary if the meat had been sitting around in the neo-tropical heat long enough to be 'left-over' (sounds more like a recipe for Montezuma's Revenge to me).

The next dish is tamales Guatemala style, and the third is for a Genoese stew. It is fun to speculate that Columbus, himself Genoese, sat at the dining table and traded recipes with his American hosts; on the other hand, maybe it has more to do with what the New Worlders wanted to do to the interlopers to 'assimilate' them, so to speak. At any rate, the book is full of the corn, tomatoes, chocolate, salsa of all sorts, and other edible comestibles without which the European diet must have sometimes been a tad bland.

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Amethyst

I had the measles once ... (DOROTHY)

AS AMERICAN AS SYPHILIS

William Woodville (1752-1805): *Medical botany.* Second edition. London: Printed and sold by William Phillips, 1810. 4 volumes. Vol. 3. *Linnaeana D92*

Or, The Bear Bones of a Controversy: the debate over the origins of syphilis rages on and the answer probably rests in the evidence that will be provided in the analysis of bone material from both the Old and New Worlds, where the disease has been a pox on both our houses.

The evidence up to now, from both books and bones, has supported an American origin for the venereal form of syphilis. Much confusion has arisen around the question of whether the disease is but one, the venereal form, of four human bacteria known as treponemes, or just one treponematosis with four clinical pictures depending on environmental conditions in a particular locality, because except for their pathological processes they are indistinguishable. There is no doubt, from linguistic evidence, that the Gang of Four: pinta (named after Columbus's boat?), yaws, venereal syphilis, and probably endemic syphilis (spread by non-venereal means), existed in pre-Columbian America. There's ample literary evidence that both venereal syphilis and yaws were taken back to Europe by the Discoverers.

One theory has it that human treponematoses arose from African animals and evolved into its various forms: pinta was carried by man across the land bridge into America and endemic and venereal syphilis arose from mutants of yaws in tropical Africa, moved into and existed in prehistoric Europe. But the evidence for its existence there is scarce and inconclusive: the treponemes leave characteristic bone lesions and although these have been found in great abundance in New World skeletons, there are no unambiguous examples in Old-World bones.

The controversy took a new turn in recent years when two American scientists found the tell-tale lesions in the bones of a bear unearthed in Indiana that had lived 11,000 years ago. The bear could have become infected eating already treponemal Human Tartare; or early Americans could have acquired the disease from an already infected bear; or, the lesions in the bear might have been caused by a different pathogen altogether.

It's an interesting and complicated story, but in the year of 1992, at least, the evidence was on the side of a New World origin for, or revitalization of, "The French Disease".

When syphilis broke out in Europe around 1500, presumably brought home by Columbus and his sailor companions, physicians relied on the ancient rule that where a disease flourished there also grew an herb for the cure. Soon travelers to the Americas brought back word that wood of guaiacum would do the trick and it was being used on a large scale as early as 1508. Although the two species of *Guaiacum* have many modern-day uses as one of the hardest of woods, the wretched syphilitic would have done better to take his chances

with the mercury cure – and often did – and it wasn't long before all knowledge of what guaiacum was even supposed to look like, was lost to botanists and pharmacists and physicians, and the unscrupulous were selling all manner of substitutes.

The study of the origins of Cupid's Itch and of its effects on world history since 1492 could fill a [syphilis-free] lifetime. And have.

Woodville's opus on medical botany was an attempt to describe and illustrate, with 300 plates, all the vegetable materia medica in the catalogs of the Royal College of Physicians of London and Edinburgh. It was the standard book on plants of the British pharmacopoeia until the 1880s when it was superseded by 'Bentley and Trimen', also featured – twice – in this exhibition.

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Gold

244 GEORGI MARCGRAVI APPENDIX.

nostris ovibus quantum distet, tu ipse judicare poteris. Hactenus Mathiolus. Ab his autem plurimum differunt oves illæ Chilenses, quarum hanc iconem nostri attulerunt ad vivum expressam.

In qua observandum omnia satis quadrare, quo ad corporis compositionem; præterquam quod postici pedes ungulas bisulcas habeant, priores autem in quatuor divisos ungues & quod prolixis admodum villis lanæ vestiatur, quam imprimis commendant. Cæterum natura bene convenit cum præcedentibus, ita ut haud dubium sit unius generis animal esse, tantum ratione cæli sub quo degit variare: nisi forte inter utrumque sit distinctio illa, quam observavimus in descriptione Ind. Occidentalis; ut omnino existimo. Sputum ejaculatur in vexantes; & scribit P. Alonso d'Ovaglie in Historica Relatione Regni Chile, vulgo credi in parte corporis humani quam sputum illud contigerit scabiem generari: quæ reliqua sunt de hoc animali dicenda, pete ex Historia nostra novi Orbis.

GEOR-

Next time she squawks, walk right up to her and spit in her eye. That's what I'd do. (ZEKE)

AS AMERICAN AS JOE CAMEL

Georg Marggraf (1610-1644): *Historia rerum naturalium Brasiliae*. Ioannes de Laet … in ordinem digessit & annotationes addidit. ***In***: **Willem Piso (1611-*1678*)**, *Historia natiralis Brasiliae*. Lugduni Batavorum: apud F. Hackium; Amstelodami: apud L. Elzevirium, 1648. *Summerfield G196*

Members of the *Lama* genus, all New World natives, belong to the camel family. There are two wild species, the vicugña *L. vicugna* and the guanacoe *L. guanaco*; it is thought that the guanaco is ancestral to the llamas and alpacas of which no wild members exist anymore. They were domesticated in pre-

Columbian times and are now the beasts of burden for the mountain descendants of the Incas, and greatly prized for their wools the world over.

In appearance these South American camels are not the spitting images of their Old World relatives: they have a lighter body build, with long neck carried upright, large eyes with long lashes on the upper lids, and arched tails; but they are one with their Old World relatives in that habit of raising their heads, laying the ears back and expelling air, moisture, and food through their mouths, directed, just like Joe Camel within spitting distance of a spittoon, at anything or anybody who threatens or excites them.

Georg Marggraf's *Historia* was the only illustrated work about Brazilian natural history prior to the great 19th century expeditions, and is lavishly illustrated with over 500 woodcuts of birds, other animals, and plants of the region, made from his own sketches. It is preceded by Willem Piso's account of Brazilian medicine.

Marggraf's contribution was edited after his death (at 34) by Joannes de Laet (1593-1649), who made additions of considerable ethnographical and linguistic importance.

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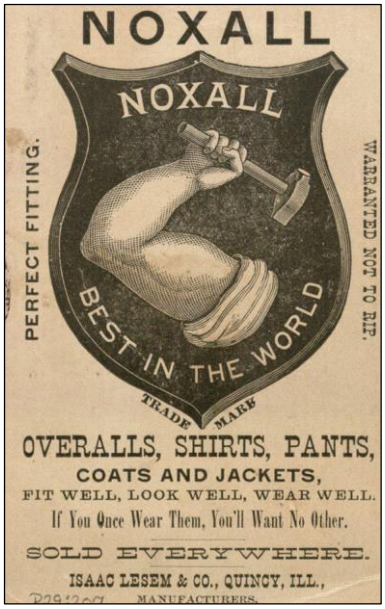
Here-here-can't work on an empty stomach. Have some crullers. (AUNT EM)

AS AMERICAN AS OVERALLS

George Cuvier (1769-1832): *The animal kingdom*. London: printed for G.B. Whittaker, 1827-1832. 16 volumes. Vol. 1-4: *Class mammalia*, arranged by Baron Cuvier, with specific descriptions by Edward Griffith, Charles Hamilton Smith and Edward Pidgeon. Vol. 3. 1827. *Ellis Omnia C798*

This was one of only a few pictures we found of an anteater without the ants so we've supplied our own rubber-tree ants to complete the scene [left out in this photo]; and although this plate may not be altogether accurate, the general color pattern called a "vest" is typical for the genus *Tamandua.* Nevertheless it looked to us rather more like the custom-made-right-down-to-the-tail Noxall brand overalls made in Quincy, Ill.: "*IF THEY FIT IN THE TAIL YOU KNOW YOU'VE GOT THE RIGHT PAIR*". **And as American as baseball ...**



Anteaters belong to the order Edentata – without teeth – that includes sloths and armadillos; although the latter have peg-like teeth on the sides of their mouths and no front teeth, true anteaters have no teeth at all. Other characteristics of this order, of skeleton, reproductive tract, and circulatory system, are unique among mammals.

The Edentates are the remnants of a group that evolved when South America was an isolated island continent. There are three genera and four species of

the true anteaters, all restricted to neo-tropical rainforests. The prehensile tail that also shows up in our opossum and New World monkeys acts as a fifth paw for the tamandua to anchor himself as he claws open a nest of ants, termites or bees (all social insects!); the giant anteater has a long and bushy, non-prehensile tail. An anteater's front claws are so large that he doesn't walk on the soles of his feet but rather on an outside pad with the claws tucked under. The sounds made by this animal vary among species: the giant can roar (but usually doesn't); the sound most often heard from the tamandua is that of ripping rotten wood; the silky or pygmy anteater is said to whistle softly. I guess you don't need teeth for that.

This London edition of Cuvier's *Règne animal* has been called the most attractive and comprehensive of Cuvier's works in the English language. It was originally issued in parts and bibliographers quote close to 800 plates in its sixteen volumes. Special Collections has the four volumes of mammalia only.

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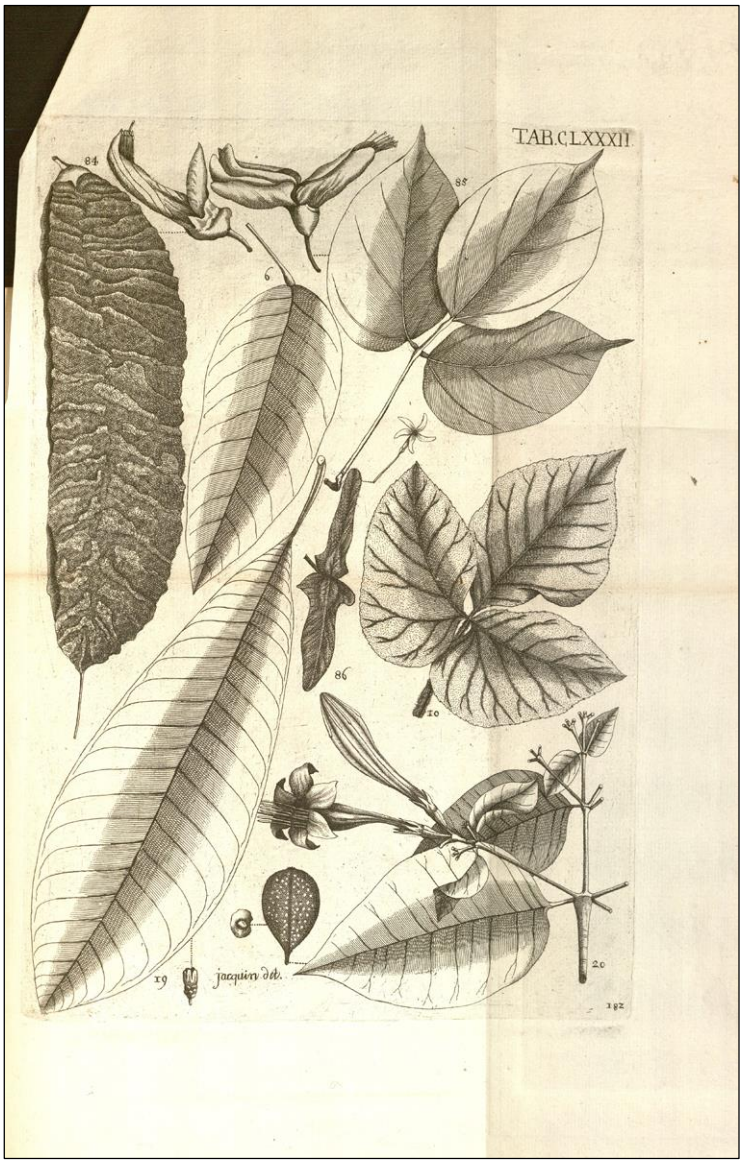
Crinoid stems – Southeastern Kansas



"There is a large American on the train", said M. Bouc … "a common-looking man with terrible clothes. He chews the gum, which I believe is not done in good circles." (AGATHA CHRISTIE)

AS AMERICAN AS CHEWING GUM

Nikolaus Joseph Jacquin (1727-1817): *Selectarum stirpium Americanarum historia*. Vindobonae: ex Officina Krausiana, 1763. 2 volumes. Vol. 2.

Linnaeana E7

With the above quotation from *Murder on the Orient Express*, we are departing from using the wise words of the people of Oz or Walt Whitman for once in

order to get an honest auslander's perspective on the great American habit of chewing gum. And we double our pleasure by chewing and smoking at the same time. Just as *Nicotiana* has provided the world with all sorts of tobacco products, so the Mexican native *Achras sapota* is the source of chicele (itself the source of chiclets), a rubber-like substance obtained by boiling down the juice of this tree.

The Mayas chewed chicele 1,000 years ago; but chewing gum isn't just a New World vice, any more than smoking toxic substances was: early Greeks had chewed a gum from the mastic tree *Pistacia lentiscus*. But the commercial gums some folks park under the seat during the screening of a Christie-Mystery, or behind the ear, or "on the bedpost overnight" (good song, by the way), was developed in 1860 from chicele and other latex products that give it that smooth quality. The various gums are blended into a syrup by a grinding process followed by melting with pressurized steam. Sugar and flavorings are then added to the gum base and the whole is chewed some more in a huge kettle holding up to a ton (oh, my aching jaw!) of the rubbery stuff. Mixing complete, the gum, now with the consistency of bread dough, is rolled and flattened into a wide continuous ribbon that is scored and hatched into sticks or pillow-shaped pieces, coated with candy, packaged and marketed. Viva Sapota! And it's recyclable, too.

Nikolaus Jacquin travelled in the West Indies and Central America from 1754 to 1759. He published a short *Enumeratio* of newly-discovered Caribbean plants and followed it with this, his first major publication, containing 184 engravings of tropical American species.

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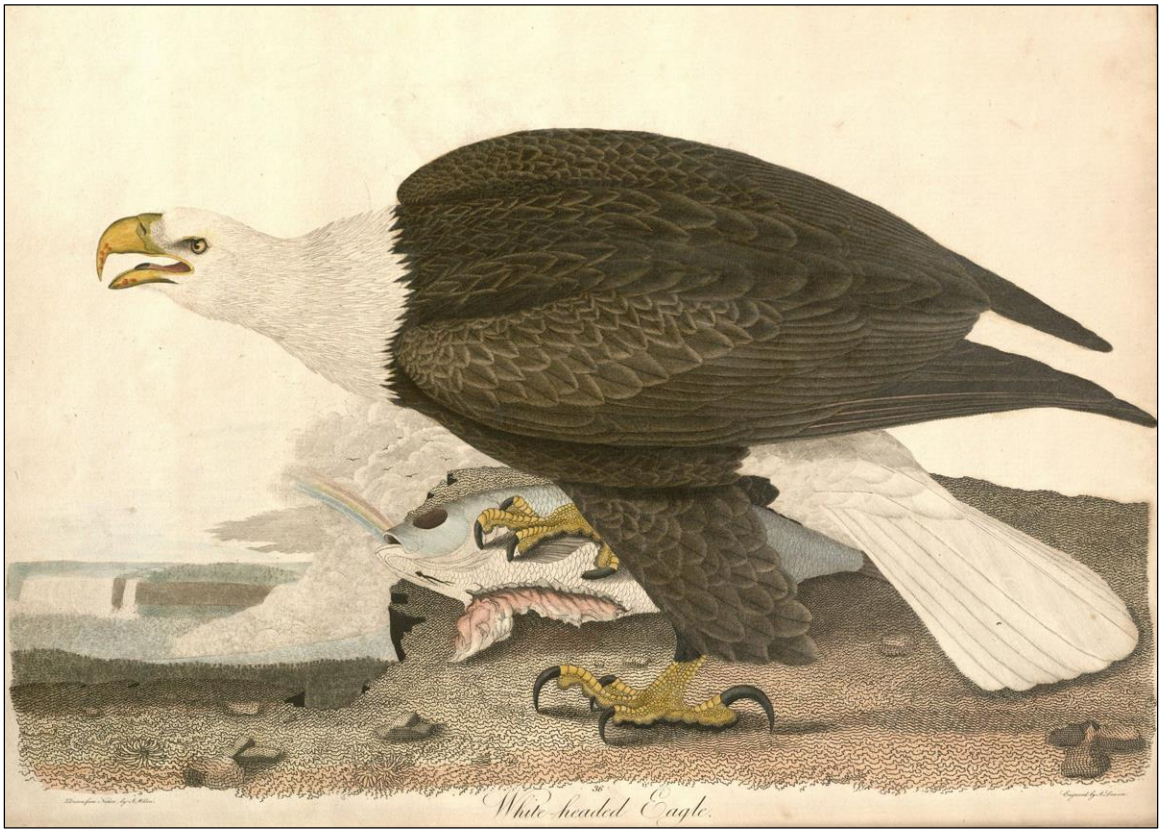
Iron pyrite



DOROTHY: ***Your Majesty, if you were King***
You wouldn't be afraid of anything?
COWARDLY LION: ***Not nobody, not nohow! ...***
DOROTHY: ***How about a hippopatamous?***
COWARDLY LION: ***Why, I'd thrash him from top to bottomus***.

AS AMERICAN AS OLD GLORY

Alexander Wilson (1766-1813): *American ornithology*. Philadelphia: Published by Bradford and Innskeep, printed by Robert Carr, 1808 [i.e. 1809]-1814. 9 volumes. Vol. 4, 1811. *Ellis Aves E205*

Eagle, the standard English name for about sixty species in the family Accipitridae (including the hawks) does not stand for a united taxonomic group: ornithologically speaking the term refers to the largest of the diurnal birds of prey and is divided into four families one of which includes the American bald eagle *Haliaeetus leucocephalus*. American eagles include the golden, now exterminated through much of its range; the harpy of South

America that preys on capuchin monkeys, sloths, and macaw parrots; and the bald eagle, the best known of American eagles, at home on local waters in and near Lawrence and depicted on the Great Seal of the USA.

In keeping with the Scottish tendency towards split personality, Alexander Wilson, a native of Paisley, Scotland, who came to be known as the Father of American Ornithology – beating out Audubon for the honor – was at various times divinity student, weaver, peddler, surveyor, teacher, poet, traveler, editor, and ex-con (he was sent up for libel, blackmail, and agit-prop in support of mill-weavers; but then, dear old dad *had* been a smuggler).

Ultimately Wilson became the writer of this first comprehensive, systematic, illustrated natural history of North American birds. In spite of his stubbornness and intolerance of criticism that made him a difficult friend, he attracted the support of the influential Philadelphia naturalists of his day. One, George Ord (1781-1866), wrote the final volume of the Ornithology, saw to the posthumous publication of the last two volumes, and defended Wilson's reputation against Audubon's accusations of plagiarism. It is interesting in this connection to compare Audubon's bald eagle with Wilson's *prior* drawing of the bird.

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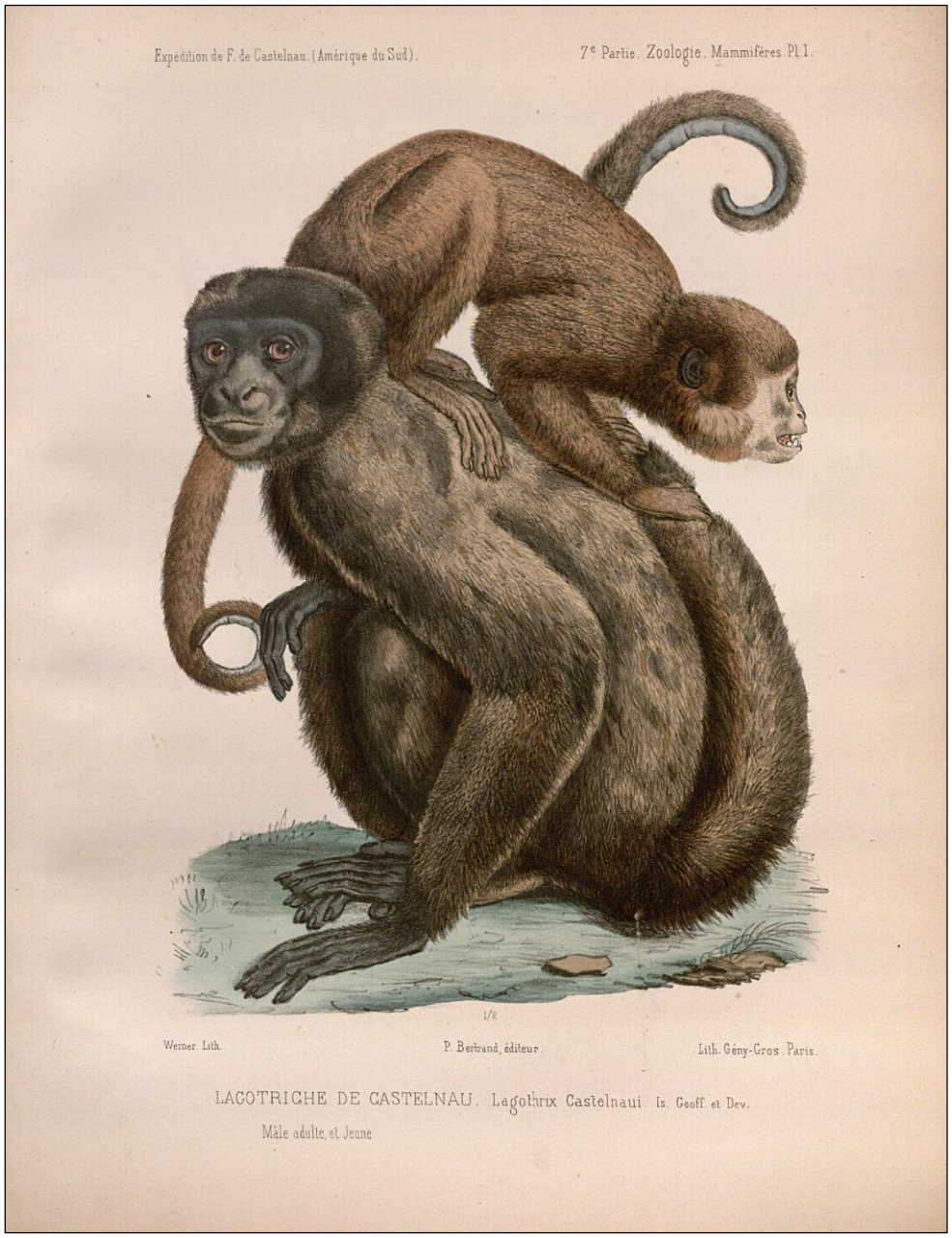
Box turtle belly shell – Argonia, Kansas



COWARDLY LION: ***Somebody pulled my tail!***
DOROTHY: ***You did it yourself!***

AS AMERICAN AS MOM AND APPLE PIE

Francis Castelnau (1812-1880): *Expédition dans les parties centrales de l'Amerique du Sud.* Paris: chez P. Bertrand, 1850-1859. 7 parts. Pt. 7. Zoologie: Animaux nouveaux ou rares. 3 volumes. Vol. 1: Mammifères, par **Paul Gervais (1816-1879).** 1855. *Ellis Aves E350*

Although *Homo sapiens* may be able to imitate the barks, screams, and trills of the common wooly monkey and even the alarm call "yoohk-yoohk", it don't mean a thing, 'cause Mr. Sapiens ain't got that swing facilitated by a prehensile tail.

This wooly monkey is the adult male of *Lagothrix lagothricha*, with junior climbing on his back. He is one of two species of *Lagothrix*, both from South America, where he inhabits the eastern slopes of the Andes in Colombia and central Brazil, eastern Ecuador, and Peru. He is the most intensively hunted of all monkeys, for the delicious meat, and Mom's absence from the picture may be because she often must be killed in order to capture her offspring. So has Dad figured this out?

Fortunately this species has a large geographical range because its reproductive rate is low, so that under the pressure of even subsistence hunting by humans it is locally extinct in many areas and is generally considered endangered.

Castelnau was a French naturalist and traveler; the most important of his voyages was this one he led to equatorial South America under the sponsorship of the French government, considered one of the most valuable of its kind in all zoological literature. The part shown here, on mammals, was the work of French palaeontologist and entomologist Paul Gervais.

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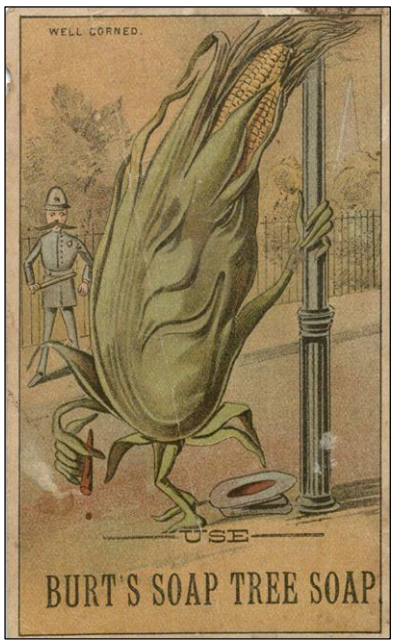
Crinoid stem – Southeastern Kansas

ADVERTISING CARDS

The advertising cards, for a variety of products from sarsaparilla to sewing machines manufactured and marketed in the United States, were printed and published during the last twenty years of the 19th century.



Answers to Citizenship quiz:

1. **Vampire bat**
2. **Charles Darwin, 1809-1882:** (Letter to James E. Todd from Down, Kent, England, 10 April, 1882)
3. **Cashew**
4. **Bighorn sheep**
5. **Tapioca**
6. **Lantern fly**
7. **Jerusalem artichoke** (although not an artichoke and not from Jerusalem).
8. **Tomato**
9. **Fruits and vegetables in Titford's basket:**

FRUITS AND VEGETABLES IN TITFORD'S BASKET

1. Breadfruit* (*Artocarpus*)
2. Musk okra* (*Hibiscus*)
3. Pineapple (*Ananas comosus*)
4. Soursop (*Annona muricata*)
5. Shaddock* (*Citrus*)
6. Jackfruit* (*Artocarpus*)
7. Sweetsop (*Annona squamosa*)
8. Pigeon pepper (*Capsicum*)
9. Coral pepper (*Capsicum*)
10. Bird pepper (*Capsicum*)
11. Sore throat pepper (*Capsicum*)
12. Spanish fig* (*Ficus*)
13. Eggplant* (*Solanum*)
14. Long cerasee* (*Momordica*)
15. Star apple (*Chrysophyllum*)
16. Naseberry (*Achras sapota*)
17. Mammee apple (*Mammea*)
18. Chocho (*Sechium edule*)
19. Mango* (*Mangifera indica*)
20. Cashew apple (*Anacardium occidentale*)
21. Coconut (*Cocos nucifera*)
22. Sand box (*Hura crepitans*)
23. Pomegranate* (*Punica granatum*)
24. Akee* (*Blighia*)
25. Avocado (*Persea americana*)
26. Plantain* (*Musa*)
27. Large purple plum
28. Indian fig (*Opuntia*)
29. Guava (*Psidium guajava*)
30. Rose apple* (*Eugenia*)
31. Tomato (*Lycopersicum esculentum*)
32. Yellow hogplum (*Spondius mombin*)
33. Common okra* (*Hibiscus esculentus*)
34. French sorrell* (*Hibiscus*)
35. Passionfruit (*Passiflora*)
36. Cerasee* (*Momordica*)
37. Wild gooseberry (*Cactus*)
38. Pinguins (*Bromelia*)
39. Banana* (*Musa*)
40. Tamarind* (*Tamarindus indica*)
41. Lime* (*Citrus*)

(* = Old World natives)

A shout of thanks out to my colleagues who helped with images: Kathy Lafferty of Spencer Library's Public Services scanned images and supervised student assistant Tim Churchill's photo-shoot of oversized plates; artist Loel "Annie" Barr, in Saugerties, N.Y. (Kansas-born), sharpened and brought out color and light in images; Library Copyright Specialist/Technical Assistance Officer Marianne Reed advised on questions of use of recently published materials; KU librarian Sarah Goodwin Thiel and technical writer John Brewer, wearing their imaging hats, tucked and trimmed images into shape and inserted them into the text.

The End

Selenite – Barber County, Kansas