VANISHING NORTH AMERICAN MATERIA MEDICA

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TOP 10 SELLERS 2015 (SMITH 2016)

1 Horehound (*Marrubium vulgare*)
2 Cranberry (*Vaccinium macrocarpon*)
3 Echinacea (*Echinacea* spp.)
4 Garcinia cambogia (*Garcinia gummi-gutta*)
5 Green tea (*Camellia sinensis*)
6 Black cohosh (*Actaea racemosa*)
7 Flax or flaxseed oil (*Linum usitatissimum*)
8 Ginger (*Zingiber officinale*)
9 Valerian (*Valeriana officinalis*)
10 Bioflavonoid complex
11 Green coffee (*Coffea arabica*)
12 Yohimbe (*Pausinystalia johimbe*)
13 Ivy leaf (*Hedera helix*)
14 Aloe vera *(Aloe vera*)
15 Saw palmetto (*Serenoa repens*)
16 Milk thistle (*Silybum marianum*)
17 Garlic (*Allium sativum*)
18 Plant sterols
19 Turmeric (*Curcuma longa*)
20 Cinnamon (*Cinnamomum* spp)

WHERE DO THE HERBS GO?

- Fads
- Research-driven rise of exotic herbs
- Globalization of herbal access
- Disconnect from nature/sourcing not transparent
- Loss of knowledge, loss of elders, herbal dark ages (1930s-1950s)
- Failure to do our own research
- Ridiculous fear-driven panics based on isolated constituents

FOREST AND TREES

HERBAL INFO MONOCROPS

- Books repeating books repeating books without any original citation
- Where is the updating from actual clinical experience or research?
- Telephone game result: information gets more and more distorted over time, less and less useful

LACK OF INFORMATION ≠ INEFFECTIVE

- Problem with "evidence-based medicine" is reliance only on clinical trial evidence
- There is no real history to base conventional treatment on so this is discount
- Herbal historical use is valuable but only if the information is good quality

NATIVE AMERICANS

AUTONYM	EXONYM	NATIVE TERRITORY
ANISHINAABEG (ᐊᓂᔑᓇᐯᒃ), ININI	Ojibwe, Chippewa	Northern Great Lakes region
TSALAGI (ᏣᎳᎩ), ANI-YUNWIYA (ᎠᏂᏴᏫ)	Cherokee	southern Appalachia
CHAHTA	Choctaw	Alabama, Florida, Mississippi, Louisiana
LENAPE, LENI LENAPE	Delaware	NJ, southern NY, western PA, northern MD

MORELLA CERIFERA (SOUTHERN WAX MYRTLE)

- Myricaceae
- Formerly *Myrica cerifera*
- Dioecious
- Root bark part used, but wax from fruit also
- Leaves: alternative to bay leaves in cooking

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NATIVE NAMES

- Chahta: kolaha
- Koasati (Coushatta): ittoikíllo

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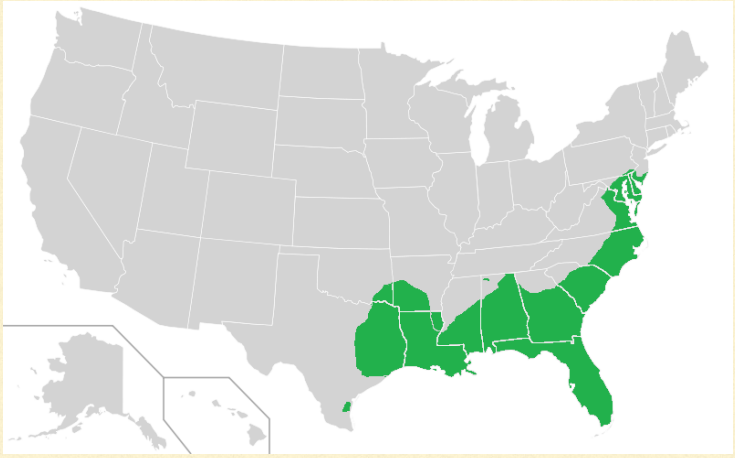
NATIVE RANGE



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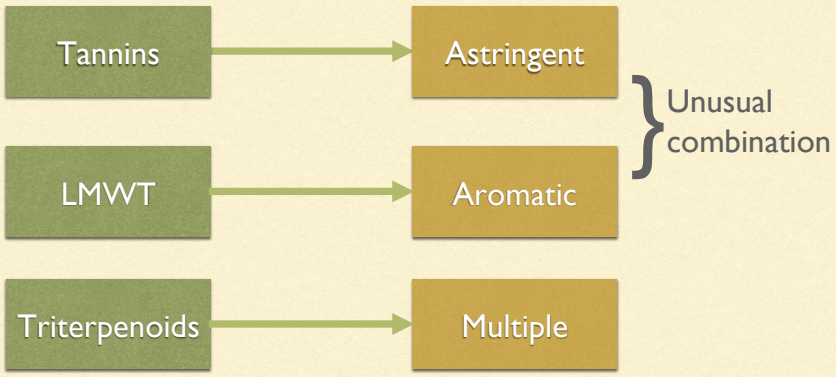
INTERESTING ACTIONS



INDICATIONS

- Periodontal disease in general
- Sore throat with swollen tonsils, ulcers
- "Relaxed, flabby tissues with hypersection" (GI stimulant + astringent), as sometimes occurs in chronic diarrhea, chronic gastritis (not so good in acute situations)
- Thomsonian medicine: very heating

RELATED SPECIES

- *Morella pensylvanica* (northern wax myrtle): NE Canada/USA
- *Myrica gale* (bog myrtle, sweetgale): holarctic distribution
- *Morella faya* (firetree, faya): Azores, Madeira, Canary Islands
- *Morella rubra* (yángméi 杨梅, yamamomo ヤマモモ): China

MYRICA CANDLES

http://designskool.net/cape-cod-traditions-on-gardenista-this-week/

http://the3foragers.blogspot.com/2014/08/making-bayberry-candles.html

SASSAFRAS ALBIDUM (SASSAFRAS)

- Lauraceae; bark or root bark used
- Native names:
  - Tsalagi: ᏕᎾᏙᏁ (ganasdatsi) and other similar variants
  - Chahta: iti kạfi
  - Leni Lenape: winakw
  - Anishinaabe: maanaagwaakwamizh

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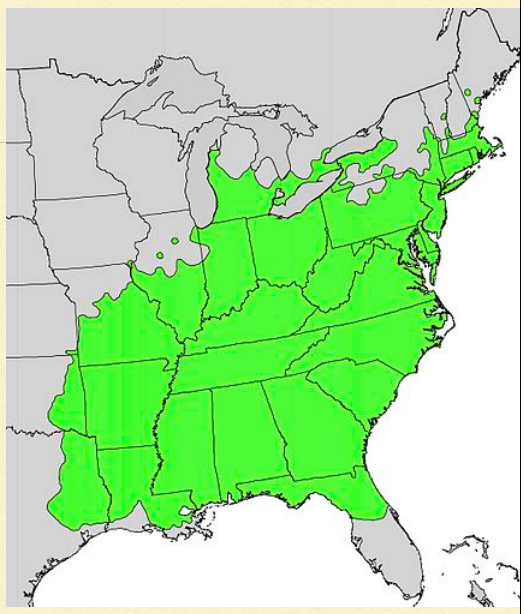
NATIVE RANGE

- Can grow outside this range (e.g. in Washington)



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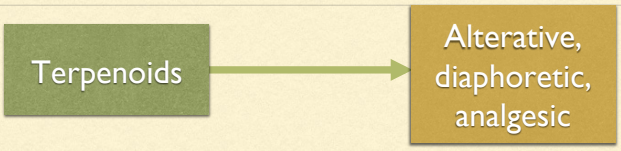
ACTIONS AND USES

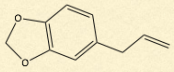


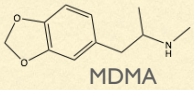
- Topical oil: for pain relief in rheumatic conditions
- Topical infusion: for poison ivy dermatitis
- Oral infusion or oil: dysmenorrhea, cystitis
- Flavor!

RECENT RESEARCH

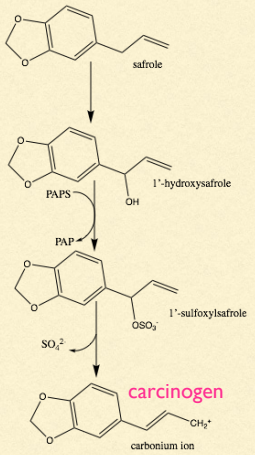
- *S. albidum b*ark highly active against leishmaniasis (Pulivarthi 2015)
- *S. randaiense* stem lignans inhibit iNOS (Hou 2015)
- *S. tzumu* bark lignans inhibit acetylcholinesterase (Lu 2017)

SAFROLE





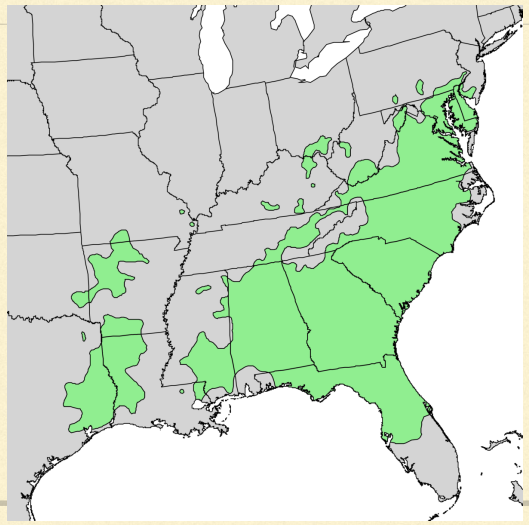
- Role in plant: pesticidal
- Amount in plant: small
- Problem: extrapolation from pure safrole in high doses in rodents (carcinogenic) to crude extracts in humans in low doses (no such evidence) is highly dubious
- Note: new problem is use for synthesis of MDMA, but extracting safrole from sassafras isn't trivial, unlikely to be a problem from crude extracts



CHIONANTHUS VIRGINICUS (FRINGETREE)

- Oleaceae
- Chahta: hattak sipokni ịnutakhish ("old man's beard")

NATIVE RANGE



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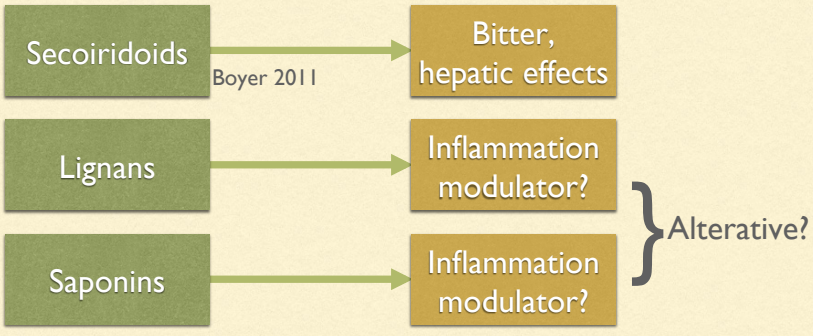
ACTIONS



DR. IJM GOSS' LIST (AS RELATED IN SCUDDER 1870)

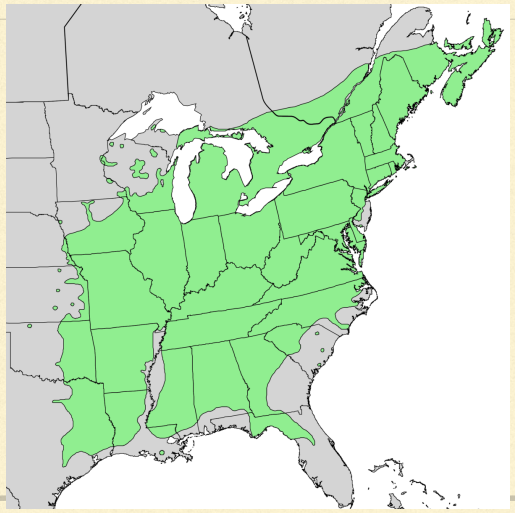
- Alterative, bitter, with liver affinity
- For hepatomegaly, esp. due to malaria
- For jaundice (acute or chronic)
- *Not* useful for biliary duct obstruction
- Recipe for tincture of bark of root: 2 oz in 1 quart gin
- Dose: 0.5 oz q3h of this tincture or 1–2 drachms (1/8–1/4 oz) fluid extract q3h

FRAXINUS AMERICANA (WHITE ASH)

- Oleaceae
- Native names
  - Chahta: shinạp
  - Tsalagi: ᏧᏚᏃᎾ (tsuganonv)
  - Lenape: mixakanakw
  - Anishinaabe: baapaagimaak

F. pennsylvanica photo (c) 2017 E. Yarnell

NATIVE RANGE



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Thiemann 2016

Argilus planipennis
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PA Dept Conservation & Nat Resources

Lower terpenoids levels in American *Fraxinus* spp make them more susceptible to this pest (Pureswaran 2009).

OTHER SPECIES

- *F. pennsylvanica* (green ash, red ash): eastern North America
- *F. nigra* (black ash): northeastern North America
- *F. excelsior* (European ash): widespread throughout Europe; seed extract anti diabetic in clinical trial (Zulet 2014)
- *F. ornus* (manna ash): Mediterranean, Balkans, southwestern Asia; leaf decoction used for arthritis and gout in Italy (Guarrera 2005)

FRAXINUS AND FIBROIDS

- Learned this from Silena Heron, ND (1946–2005)
- This is mentioned by Felter (1922) but he questions its efficacy, but does support use for "pelvic heaviness and dragging pain"
- Mechanism of action unknown

HEPATIC/GB TONIC

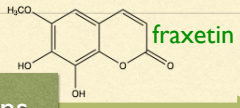
"Both the black and white ash deserve study. The first, for its influence in skin diseases, especially of an herpetic character, and as a general alterative. The second, to improve secretion, and for its influence upon the chylopoietic viscera."

—Scudder 1870

F. rhynchophylla (qín pí 秦皮) hepatoprotective, antifibrotic in liver (Guo 2017; Peng 2010)

F. latifolia (Oregon ash) photo (c) 2017 E. Yarnell

RESEARCH FINDINGS



Coumarins → XO inhibitor Chang 1996

Crude extracts antimalarial (Aydin-Schmidt 2010)
F. ornus anti-hyperglycemic, antimicrobial, inflam mod, anti-comp
Various Asian species protect substantia nigra (Li 2013)
F. excelsior antihypertensive, diuretic (Eddouks 2005)
Inflammation modulating (El-Ghazaly 1992)

Secoiridoids → Bitter, hepatic effects

General ref: Kostova 2007

CHELONE GLABRA (BALMONY)

- Plantaginaceae
- Tsalagi: ᎠᎾ ᏍᏁᎢ (ahwi gahngoi, "deer tongue")

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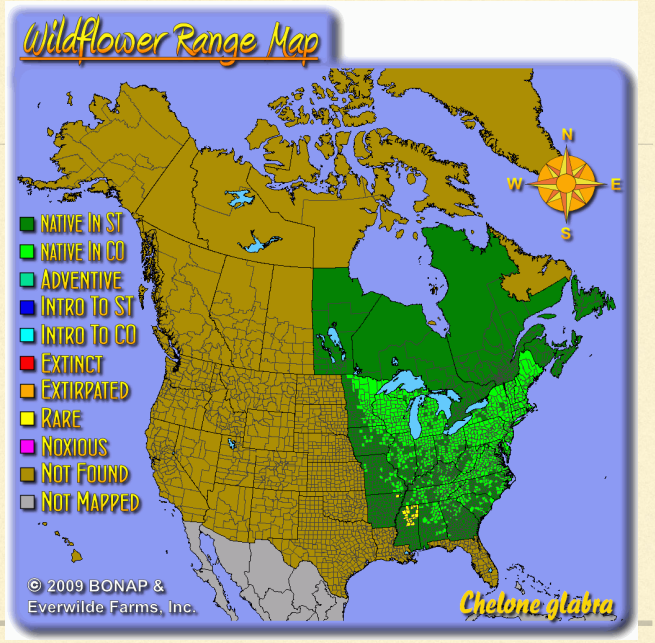
NATIVE RANGE



ACTIONS AND INDICATIONS

- Bitter, hepatoprotective
- Gastrointestinal debility, dyspepsia
- Jaundice
- Felter 1922

POLYMNIA UVEDALIA (BEAR'S FOOT)

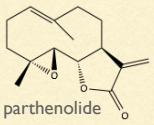
- Asteraceae
- Now called *Smallanthus uvedalia*

Photo from missouriplants.org, CC3.0 license

SO LIKE *CEANOTHUS*

- "According to Dr. Pruitt, it may be considered a specific in splenic enlargement from malarial influence…"
- "Prof. J. M. Scudder, MD has used it with good effect in chronic gastritis, chronic hepatic enlargement…according to him the indications for its use are full, flabby, sallow tissues, impaired circulation, atonic impairment of function, and glandular enlargement"
- Felter 1898

RESEARCH FINDINGS



- *P. uvedalia* sesquiterpene lactones, notably parthenolide, inflammation modulating (Feltenstein 2004)
  - Enhydrin α-glucosidase inhibitor thus hypoglycemic (Serra-Barcellona 2017)
- *P. maculata* = *S. maculatus*, Central American/Mexican species, inflammation modulating (Bork 1997)
- *S. sonchifolius* (yacon) root is a common food in Central America, shows antidiabetic, antimicrobial, bitter, many other actions

FOUQUIERIA SPLENDENS (OCOTILLO)

- Fouquieriaceae
- Native names:
  - Tohono O'odham: melhog
  - Hualapai: igamye

photo (c) 2017 E. Yarnell

ACTIONS AND USES

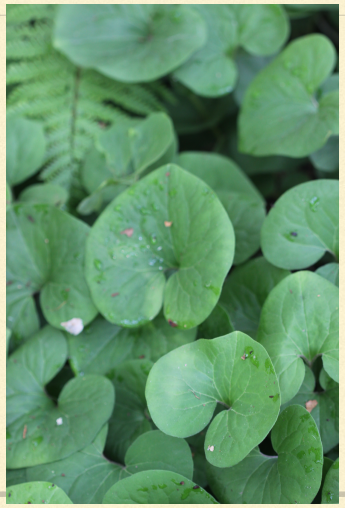
- Pelvic lymphagogue
- Really seems to get "stuck" chronic problems moving
- Helps remove cysts and benign growths
- Drives formulas to the pelvis?
- Based on Michael Moore's work, Silena Heron, ND's clinical experience, and my clinical experience

UP FROM OBSCURITY

- Though pretty obscure it has become one of the most recognizable Sonoran desert plants in use
- Threatened by development in AZ, where its harvest is restricted
- What other regional delights like this languish in obscurity now?

ASARUM CANADENSIS (WILD GINGER)

- Aristolochiaceae family
- Native to understory of forests across North America



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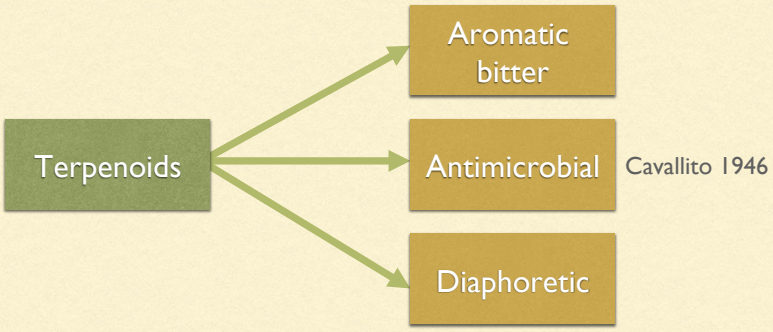
ACTIONS

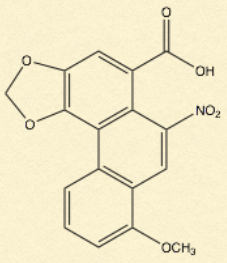


RESEARCH FINDINGS

- *A. sieboldi* (xì xīn 細辛)
  - Inflammation modulator in rats with RA (Zhang 2014)
  - Volatile oil kills dust mites (Wu 2012)
  - In formula, anti-Coxsackievirus including nephroprotective (Yen 2014)

ARISTOLOCHIC ACID?

- Carcinogenic, nephrotoxic
- One study found highly variable amounts of AAI present in *A. canadense and A. caudatum* (Schaneberg 2002)
- Same group failed to find any AA in six commercial products with wild ginger (Schaneberg 2004)
- FDA analysis of Heron's tincture found no AA



AA I

DICENTRA FORMOSA (PACIFIC BLEEDING HEART)

- Papaveraceae
- Ichishkíin Sínwit (Sahaptin, Yakama) name: xwoixwoi'as; tumla'tumla' ("little hearts")
- Forgotten cancer remedy

photo (c) 2017 E. Yarnell

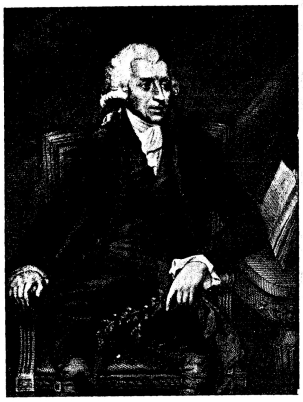
DIGITALIS PURPUREA (FOXGLOVE)

- Scrophulariaceae
- Classic example of expropriation

photo (c) 2017 E. Yarnell

WUTHERING AND THE SHROPSHIRE WOMAN

- 1785: William Wuthering published his account on digitalis for dropsy
- An early transition to herbs as drugs
- He credits a woman for teaching him about the herb but never names her or really gives her credit



WILLIAM WITHERING, M.D., F.R.S., &c.

From an engraving by W. Bond from the painting by C. F. Breda.

ACTIONS AND INDICATIONS

- Positive inotropic, negative chronotropic
- Congestive heart failure (see next slide)
- Atrial fibrillation: prevent propagation into the ventricles

DIGOXIN IN CHF

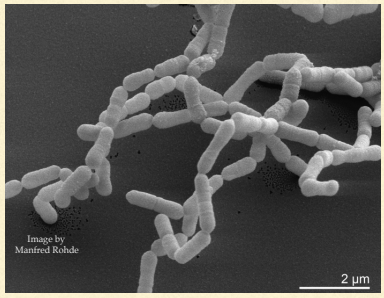
- Low-dose digoxin (0.125 mg/d or less) leading to low serum levels (0.5–0.9 ng/ml) is much safer and reduces mortality, hospitalization, improves symptoms in CHF (Ahmed 2006)
  - At higher levels, it only reduces hospitalizations and doesn't reduce mortality
- Serum digoxin danger level: >2 ng/ml

EGGERTHELLA LENTA

digoxin → dihydrodigoxin

active → inactive

E. lenta is only species known to make this conversion (Saha 1983)



Well established that some people don't get benefit from digoxin due to this inactivation (Haiser 2014).

PEDICULARIS SPP (LOUSEWORT)

- Orobanchaceae
- Hemiparasitic: watch where you harvest
- Medicinal species:
  - *P. bracteosa*
  - *P. racemosa*
  - *P. groenlandica*

P. racemosa photo (c) 2017 E. Yarnell

ACTIONS AND INDICATIONS

- Skeletal muscle relaxant
- Pelvic anodyne/analgesic
- Nervine, anxiolytic
- "Kava of the Continent" (same actions except no topical anesthetic effects, taste is much better)

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