

Ethnobotany. Lecture 38

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Outline

- 1 Technical plants
 - Incense plants
- 2 Ornamental plants
- 3 The most important cultivated plants and their centers of origins



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Technical plants

Incense plants



Incense plants (ceremonial odors)

- Used in many religions, most often in Eastern Christian churches, Hindu and Buddhism
- Multiple plants with essential oils, plus some specific species like myrrh *Commiphora myrrha* (Burseraceae, West Asia), styrax *Stryrax benzoin* (Styracaceae, West Asia) and sandalwood *Santalum* spp. (Santalaceae, Old World tropics)



Incense stick in Buddhist temple



Sandalwood cultivation



Frankincense, *Boswellia sacra*, Burseraceae, Africa

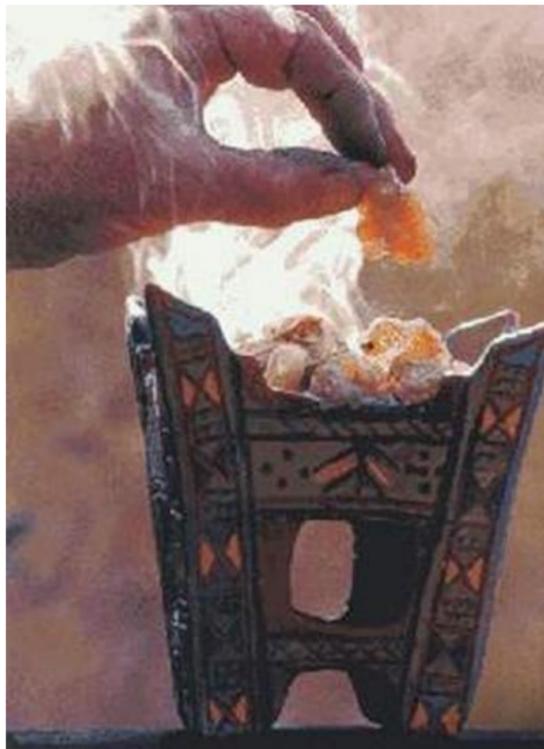
- Aromatic resin from *Boswellia* trees
- Burning of frankincense came from ancient Egypt to Hebrew church and then to Christian churches
- Contains a complicated set of terpenes which have also medicinal effects



Frankincense tree



Frankincense in church



Indoor plants

- Should be adapted for dry and relatively dark conditions
- We already covered cacti and other succulents in February excursion



Some groups of indoor plants

- Orchidaceae: tropical orchids; *Phalaenopsis* is one of the most frequently cultivated
- Bromeliaceae: South American bromeliads; *Cryptanthus*, *Neoregelia* and *Guzmania* are frequently cultivated
- *Begonia* from Begoniaceae, all tropics, is extremely shade-tolerant (and also ferns)
- Many ornamentals (indoor or outdoor) are variegated plants: induced variegation or naturally pigmented leaves



Begonia



Neoregelia, naturally variegated



Rubber ficus (*Ficus elastica*, Moraceae, Old World tropics), variegated mutant



Bonsai

- Specific way of cultivation resulted in dwarf plants
- Variety of temperate tree species used, cultivation is in-house but outdoor (in patio)
- Specific techniques are: leaf trimming, stem pruning and wiring, use stony substrate and small pots



Bonsai pine



Cut plants

- Cultivated throughout the year in greenhouses and/or open grounds, then cut
- Forcing of flowering is needed for most cases (hormones, temperature, day length, selection)



Most frequent cut plants

- Rose: *Rosa* spp., Rosaceae, China
- Carnation: *Dianthus caryophyllus*, Caryophyllaceae, Mediterranean
- Lily: *Lilium* spp., North Hemisphere
- Chrysanthemum: *Chrysanthemum* × *koreanum*, Compositae, East Asia
- Gerbera hybrids: *Gerbera*, Compositae, South Africa



Carnation



Gerbera



Outdoor annuals and perennials

- Plants from diverse families
- Annuals should (like petunia, *Petunia hybrida*, Solanaceae, South America) be fast-growing
- Biennials like pansy (*Viola x wittrockiana*, Violaceae, Europe) produce vegetative part in the first year
- Perennials normally have underground rhizomes (like peony, *Paeonia* spp., Paeoniaceae, East Asia) or bulbs (like daffonlids, *Narcissus* spp., Mediterranean), often wintering indoor (like geraniums, *Pelargonium* spp., Geraniaceae, South Africa)
- Traditionally, flowering shrubs like roses, lilacs (*Syringa* spp., Oleaceae) are also referred here

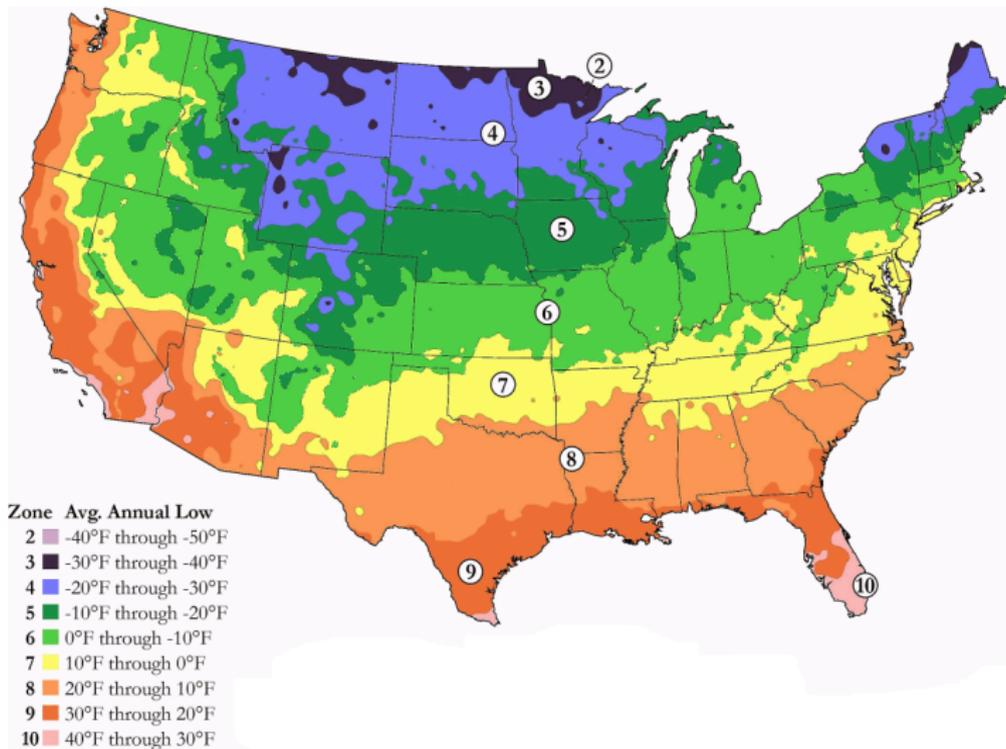


Hardiness zones

- Determined from average lowest temperature
- North Dakota belongs to 3/4 zones



Hardiness zones in U.S.



Petunia



Pansy



Peony



Bulb plants

- Liliaceae: lily *Lilium*, tulip *Tulipa*, fritillary *Fritillaria*
- Amaryllidaceae: daffodil *Narcissus*, snowdrop *Galanthus*
- Asparagaceae: grape hyacinth *Muscari*, hyacinth *Hyacinthus*, squill *Scilla*, common bluebell *Hyacinthoides*



Common bluebell



Landscape woody plants

- Trees, shrubs, rarely vines
- Evergreen and deciduous



Conifers

- Pinaceae: *Picea* (especially blue spruce, *Picea pungens*, North America), *Pinus*, *Larix*
- Cupressaceae: *Cupressus*, *Juniperus*



Blue (Colorado) spruce

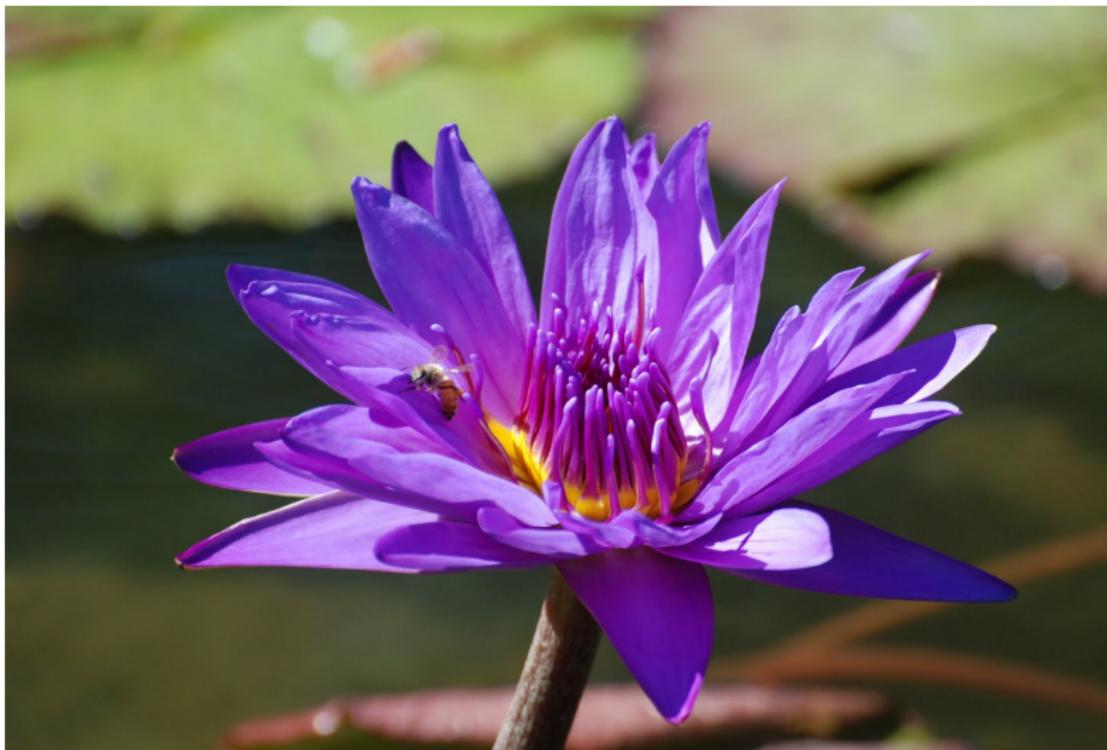


Special groups

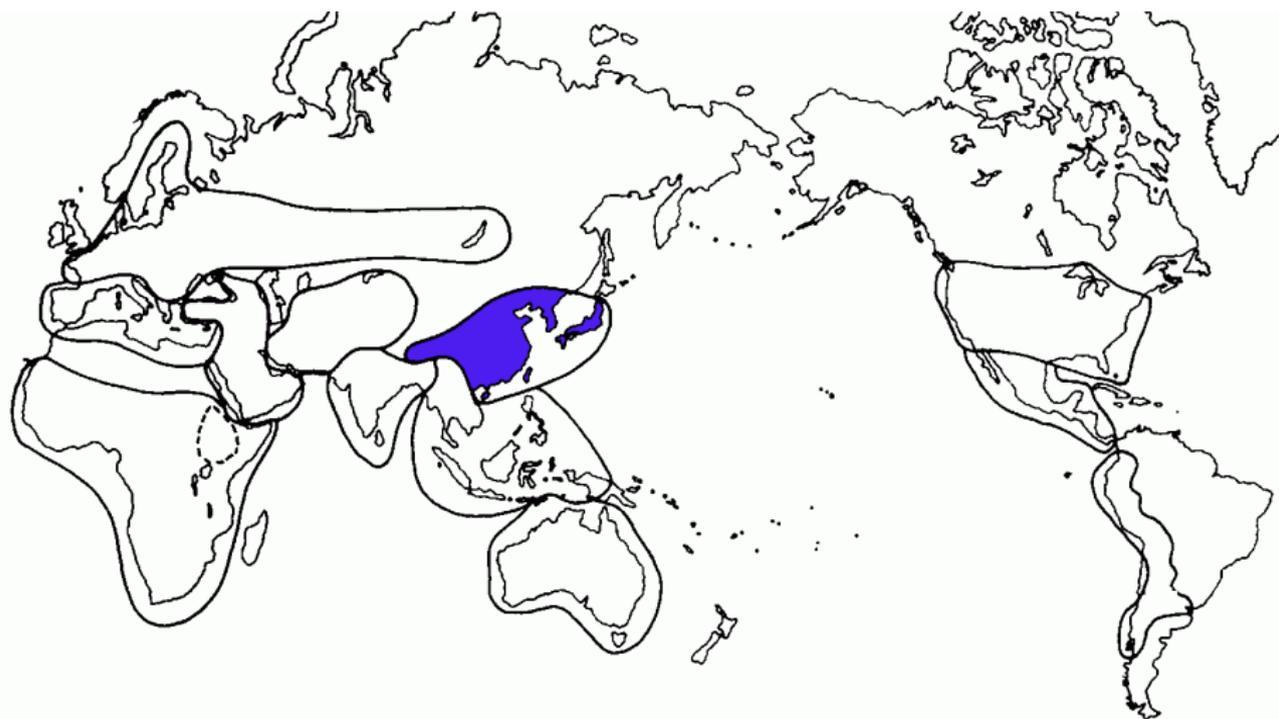
- Plants for alpine (rocky) gardens like stonecrops, *Sedum* spp., Crassulaceae
- Aquatic ornamentals: ponds (like waterlily, *Nymphaea* spp.) and fishtanks (like *Pistia*, *Elodea* etc.)
- Lawn plants: *Lolium perenne*, ryegrass and species of bluegrass (*Poa*) and bentgrass (*Agrostis*)



Water lily



East Asian center



East Asian center: main food

- Rice
- Soybeans



East Asian center: fruits and vegetables

- Peach
- Orange
- Radish



East Asian center: sugar and oil

- Tung



East Asian center: spices and drinks

- Tea
- Camphor tree



East Asian center: medicinal

- Ginseng
- Ginkgo



East Asian center: technical

- Bamboos
- Gutta percha

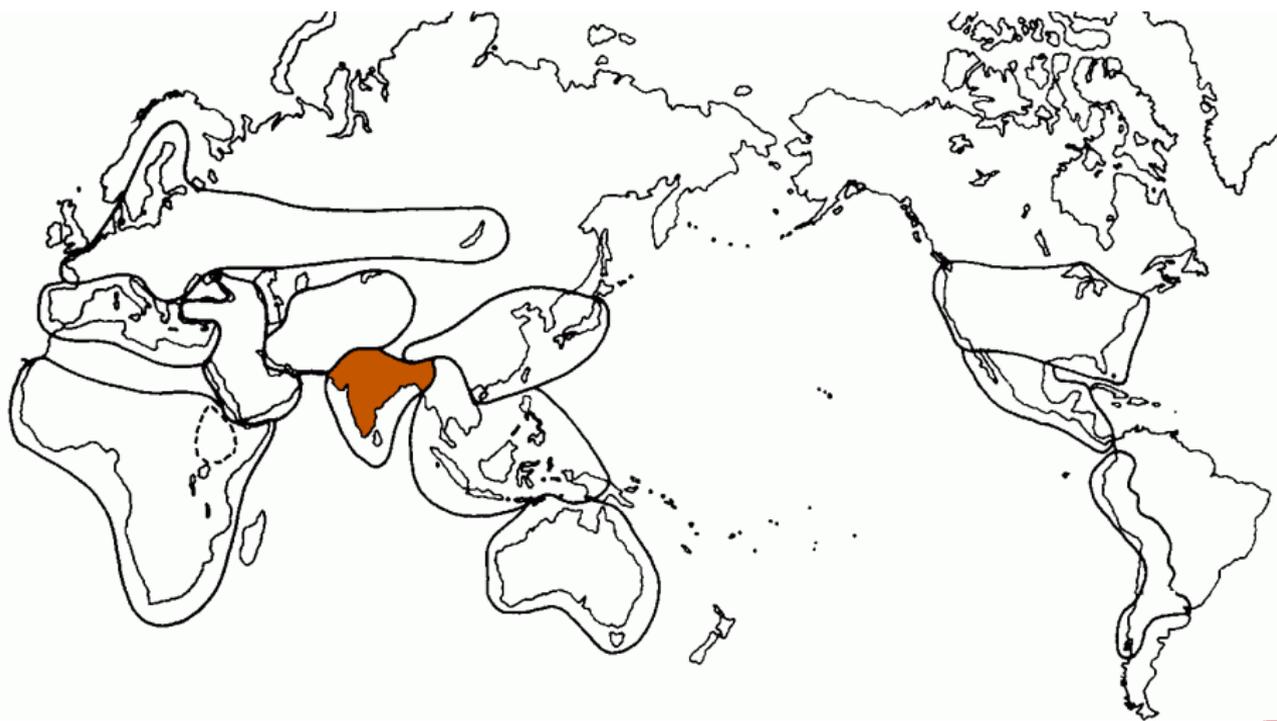


East Asian center: ornamental

- Chrysanthemum
- Ornamental maples



South Asian (Indian) center



South Asian (Indian) center: main food

- Buckwheat
- Chickpea



South Asian (Indian) center: fruits and vegetables

- Mango
- Cucumber



South Asian (Indian) center: sugars and oils

- Sugarcane
- Sesame



South Asian (Indian) center: spices and drinks

- Black pepper
- Cinnamon



South Asian (Indian) center: technical

- Jute
- Cotton (partly)



South Asian (Indian) center: medicinal

- Turmeric
- Gotu kola

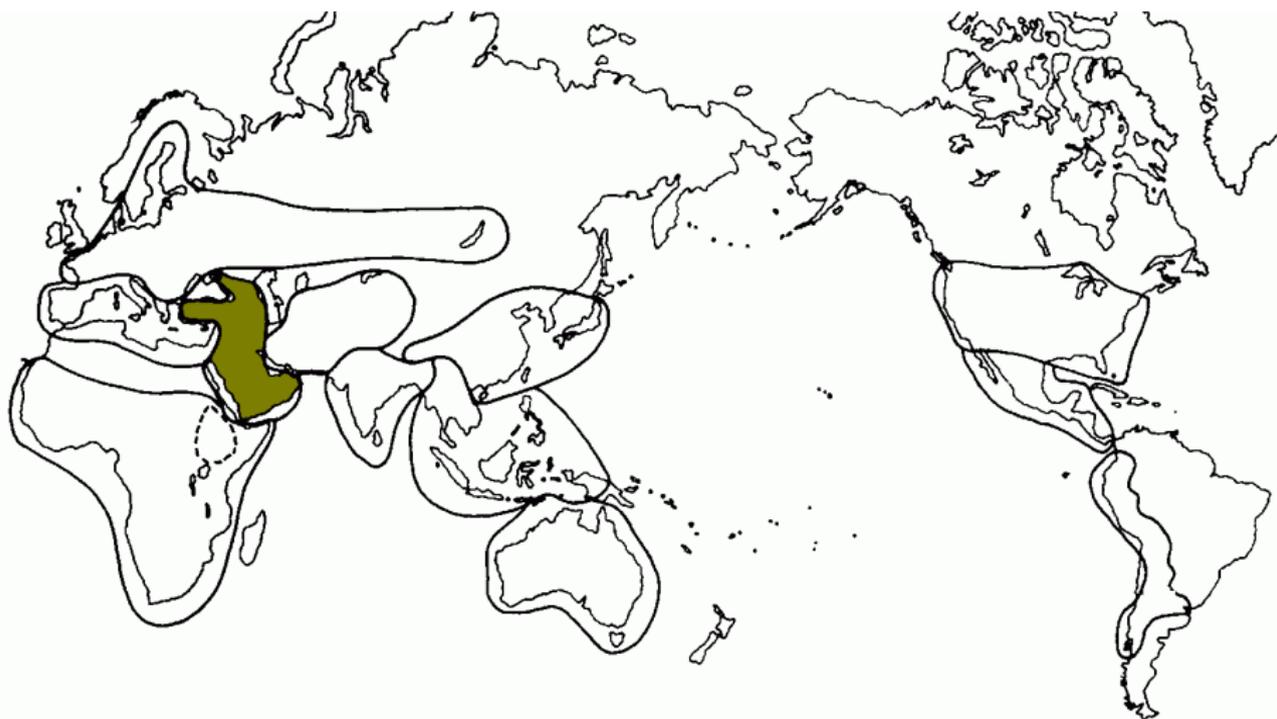


South Asian (Indian) center: ornamental

- Rhododendron
- Ficus



West Asian center



West Asian center: main food

- Wheat (partly)
- Lentils



West Asian center: fruits and vegetables

- Grapes
- Pomegranate
- Walnut



West Asian center: spices and drinks

- Coriander
- Cumin



West Asian center: technical

- Alfalfa



West Asian center: medicinal

- Chamomile
- Senna



West Asian center: ornamental

- Rose
- Tulip
- Carnation



Mediterranean center



Mediterranean center: main food

- Barley
- Oats



Mediterranean center: fruits and vegetables

- Cabbage
- Pear



Mediterranean center: sugars and oils

- Sugar beet
- Olive



Mediterranean center: spices and drinks

- Dill
- Bay leaf



Mediterranean center: technical

- Flax
- Clover



Mediterranean center: medicinal

- Deadly nightshade
- Autumn crocus



Mediterranean center: ornamental

- Lilac
- Primrose



African (Ethiopian) center



African (Ethiopian) center: main food

- Sorghum



African (Ethiopian) center: fruits and vegetables

- Watermelon
- Date palm



African (Ethiopian) center: sugars and oils

- Castor
- Oil palm



African (Ethiopian) center: spices and drinks

- Coffee



African (Ethiopian) center: technical

- Gourd



African (Ethiopian) center: medicinal

- Aloe
- Madagascar periwinkle



African (Ethiopian) center: ornamental

- Geranium
- Gerbera



Central American (Mexican) center



Central American (Mexican) center: main food

- Corn
- Beans



Central American (Mexican) center: fruits and vegetables

- Avocado
- Squash



Central American (Mexican) center: sugars and oils

- Sunflower



Central American (Mexican) center: spices and drinks

- Red pepper



Central American (Mexican) center: technical

- Cochineal



Central American (Mexican) center: medicinal

- Quassia



Central American (Mexican) center: ornamental

- Marigold
- Cacti



South American (Andean) center



South American (Andean) center: main food

- Potato
- Sweet potato



South American (Andean) center: fruits and vegetables

- Pineapple
- Tomato



South American (Andean) center: sugars and oils

- Peanut



South American (Andean) center: spices and drinks

- Cocoa
- Vanilla



South American (Andean) center: technical

- Para rubber tree



South American (Andean) center: medicinal

- Quina
- Ipecac



South American (Andean) center: ornamental

- Canna
- Bromeliads



Really short anonymous voluntary survey

- 1 What do you **like** most in ethnobotany course?
- 2 What do you **dislike** most in ethnobotany course?
- 3 **Which lab** do you remember most of all?
- 4 Please grade (1—bad, 5—excellent):
 - 1 Lectures
 - 2 Labs
 - 3 Exams



Summary

- Main groups of technical plants: forage, wood, fiber, dye, latex, incense
- Main groups of ornamental plants: indoor, cut, outdoor annuals and perennials, landscape woody



For Further Reading



A. Shipunov.

Ethnobotany [Electronic resource].

2011—onwards.

Mode of access:

http://ashipunov.info/shipunov/school/biol_310

