Geophytes
HORT 308/609 Spring 2018
Plant List 4

Assignments

Geophytes

- Geophyte is the broader term
- Spring “bulbs” are the classic geophytes
  - Careful selection is required in warm climates due to inadequate chilling
- Other species are underutilized for summer or autumn bloom
- Underground structures
  - Bulbs
  - Corms
  - Tuberous roots
  - Tuberous rhizomes

Spring Bloomers

Assigned Readings
for Plant List 4

Read the pages in your textbook associated with the introduction to Bulbs, Corms, and Tubers (p. 411), the family descriptions, and individual taxa covered on Plant List 4 that was distributed in lab. These plant lists are also available on the course website.

http://aggie-horticulture.tamu.edu/syllabi/308/home/frameset.htm
**Helleborus orientalis**  
*Lenten Rose*

- Rounded slowly spreading mound of evergreen leaves 12” to 18” tall from underground rhizomes with fleshy roots
- Sun to shade in north, mostly shade where adapted in our region; best in a well drained slightly alkaline organic soil with uniform moisture

**Iris × germanica**  
*German Iris*

- Fans of sword-like leaves from thick ground level rhizomes forming slow spreading clumps
- Classic bearded *Iris* flowers, standards & falls nearly equal, wide color range, late fall (southern portions) - spring (colder regions)
- Sunny to partly sunny sites on very well drained soils; z. 4 (3b) - 9a (9b), very adaptable; plant shallowly!!!
- Iris borers and rots are problematic

**Iris × albicans**  
*Cemetery Iris*

- Often mistaken for *I. × germanica*
- Naturalized so extensively, *I. × albicans* is erroneously listed by many as a native species

- Valued for evergreen foliage & green, white, pink, burgundy, purple, to purple-black cup-shaped winter flowers; deer resistant
- In Eastern U.S. z. 4 - 8 (9a), but here best from 1-20 north
- Hybrids with other species extend the flowering season
• Several Oxalis spp. are grown in Southern USA as cool season annuals, while others are notorious weeds.
• Oxalis crassipes has lush bright green clover-like leaves from clustered corms forming 6” to 12” spreading mounds.
• Small clusters of rose-pink to rarely white flowers appear above the foliage.
• Excellent under deciduous trees for winter & spring sun, goes dormant in summer heat.
• Less weedy than most Oxalis spp.
• Grow in moist, but well drained soils, USDA z. 4 to 9.

**Oxalis crassipes**

- Pink Wood Sorrel

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**Crocus spp.**

• Traditional harbinger of spring in cool and cold temperate landscapes, perennial in USDA zones 4 (3b) - 7.
• Sparse grass-like clump of leaves with one single, rarely two, cup-shaped flowers per mature corm.
• Blooms bright yellow, white, purple or bicolors in late winter / very early spring.
• Best reserved for use in North Texas or cooler climates, treat as an annual elsewhere in southern locations.
• Good for naturalizing where adapted.

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**Muscari spp.**

- Small diminutive grass-like leaves with 4” to 6” (9”) tall raceme of urn-shaped flowers
  - Mostly blue, purple-blue, or white, rarely yellow.
• Blooms late winter to very early spring.

**Grape Hyacinths**

• Naturalize well in much of Texas, good substitute for Crocus spp. in the south (USDA z. 8 or 9), minimum cold tolerance is variable among species from z. 2 - 5.
• Tolerant of a wide variety of soils and sites as long as the soil is not permanently wet.
• Good example of a corm.

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**Muscari spp.**

- Grape Hyacinths
**Hyacinthus orientalis**

*Dutch Hyacinth*

- Classic spring flowering bulb
- Dense spike of blue, white, pink, or maroon flowers, highly fragrant
- Massing, accent groups, or forced as pot plants or singularly in special glass vases; use pre-chilled bulbs

**Hyacinthus orientalis**

*Dutch Hyacinth*

- Treat as spring annual in USDA zones 8 and warmer, in our region seldom a return bloomer
- French Roman Hyacinths, *Hyacinth orientalis* var. *albus* is the exception and can be naturalized but has less showy flowers
- Perennial bulbs in USDA zones 3 to 7 (8a); bulbs can be a dermal irritant

**Leucojum aestivum**

*Summer Snowflake*

- Bulbs producing 9" - 12" tall scapes with nodding clusters of white bell-shaped early spring flowers
  - Early summer in northern climates
- One of most reliable spring bulbs for our region; sun or under deciduous shade; any reasonable, but not soggy soil; hardy in USDA z. 4 - 8 (9)
- Use *en masse*, drifts, naturalizing, perennial borders; very underutilized

**Narcissus spp.**

*Daffodils*

- One of the best spring bulbs for use in Texas, several taxa will naturalize in this region
- Double yellow, white, or orange flowers or single rim of petals with a trumpet in center
- Important cut flower crop
**Narcissus spp.**  
**Daffodils**

- Massing, naturalizing, spring accent, containers
- Important, as with all bulbs, to allow the foliage to remain until it dies naturally to promote flowering the subsequent season; various genotypes z. 5 - 9

**Tulipa spp.**  
**Tulips**

- Not well adapted to most of Texas, treat as an annual, cultivars mostly of hybrid origin; short window of effectiveness
- Must be chilled prior to planting or will not bloom reliably in much of Texas
- Cup, urn, lily, to peony-shaped flowers of nearly every color in the rainbow, bloom in spring

**Tulipa spp.**  
**Tulips**

- Some species types are better adapted as perennials, but have lesser quality blooms; containers allow change-outs for multiple bloom cycles
- A world-wide favorite perennial spring bulb in USDA z. 5 (4) – 7 (8)

**Tulips spp.**  
Species types sometimes are better adapted as perennials, but may offer little resemblance to modern hybrid Tulips
**Ranunculus asiaticus**

- **Herbaceous spring perennial hardy to USDA zone 4 from tuberous roots used as an annual in our region**
- **Flowers can be cup-shaped semi-double to fully double in a wide range of iridescent colors highlighted by dark dense green foliage background**
- **Primarily in patio containers or limited bedding applications**
- **Needs winter chilling & dies in heat of summer of summer**

**Iris × hollandica**

- **Dutch Iris**
  - **Group of bulbous hybrid Iris**
  - **Late winter-early spring white, yellow, to blue flowers; short standards, long falls**
  - **Herbaceous perennials USDA z. 6 - 9, spring planted annuals in colder climates**

**Iris × hollandica**

- **Dutch Iris**
  - **Adapted to range of well drained soils in sunny locations**
  - **Watch predation & require good summer soil drainage**
  - **Good for spring mass display; cut flower garden; important in commercial floristry**

**Allium spp.**

- **Alliums**
  - **Genus of herbaceous perennial or biennial clump-forming bulbs**
  - ** Mostly onion / chive scented, often with hollow stems**
  - **Usually terminal umbels of white, pink, or purplish flowers atop leafless scapes**
  - **Excellent dual purpose plants**
**Allium spp. Alliums**

- Sunny location; well drained soils; moisture during active growing season (varies among species)
- Important edible crops, ornamentals, wildflowers; kitchen, herb gardens
- Useful climates vary among taxa from USDA zones 4 – 10
- Several poisonous look-a-likes

**Amaryllis spp. Amaryllis**

- Classified by some authorities in the genus *Hippeastrum*
- *Hippeastrum x johnsonii* is the most cold hardy (USDA z. 8 - 13) of taxa used in Texas gardens
- Less cold tolerant Dutch hybrids are usually encountered as potted plants

**Amaryllis spp. Amaryllis**

- Coarse textured foliage with large trumpet-shaped clusters atop thick flower stalks in spring
- Flowers white, pink, red, peach
- Sunny site with well drained soils
- Rogue out virus infected plants
- Pots, accents, specimens

**Summer Bloomers**
**Tulbaghia violacea**  
*Society Garlic*

- Slowly spreading 12” to 18” tall clump-forming evergreen herbaceous perennial
- Useful as a semi-evergreen perennial in USDA zones 8 (7b) - 13, annual in north
- Silver-white variegated forms
- White, light purple, lavender flowers on scapes above leaves
- Long season of bloom
- Mildly garlic scented foliage
- Bulbs subject to predation

**Agapanthus africanus**  
*Lily-Of-The-Nile*

- Large evergreen (USDA hardiness z. 9 - 13) to deciduous (z. 8) clump-forming subtropical herbaceous tuberous rhizomatous perennial
- Dense coarse-textured dark lustrous green foliage
- Serve as small shrubs in tropics

**Crinum spp.**  
*Crinum Lilies*

- White to intensely blue umbels of trumpet-shaped flowers on stout leafless stalks (scapes) late spring to summer
- Sunny site with well drained soils; prone to root/crown rots on wet sites

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**Crinum spp.**  
*Crinum Lilies*

- Large coarse textured warm temperate to tropical lilies; several for USDA z. 7 - 13
- Stiff upright clump of large succulent leaves lend a tropical appearance
- Umbels of open trumpet shaped flowers with more or less strap-like petals, white, pink, to maroon & white (hence called Milk & Wine Lilies)
**Crinum spp.**  
**Crinum Lilies**  
- Tolerant of a variety of soils including those on the wet side  
- Showy, but may be hard to work into conventional designs

**Dietes iridioides**  
**White Butterfly Iris**  
- Evergreen to semi-evergreen 1½’ to 2’ (3’) tall shrub-like mound of strap-like to narrow sword-like leaves from a fleshy rhizome  
  - Cold is limiting factor, USDA hardiness zones 9 (8b) - 13  
- Sporadic season-long bloom, nearly year-round in tropics, flowers resemble small white butterflies held above most of the foliage  
- Full sun to partial shade, very heat and moderately drought and salt tolerant; soil pH adaptable; African native  
- Perennial borders, massing, or as shrub in subtropics/tropics

**Dietes bicolor**  
**Yellow Butterfly Iris**  
- *Dietes bicolor* is very similar to *D. iridioides*, except slightly larger, with cream to pale yellow flowers that are more flattened than on *D. iridioides*  
- Cultural requirements are similar, cold tolerance is primary limitation

**Dahlia spp.**  
**Dahlias**  
- Classic tuberous rooted summer annual in north, herbaceous perennial to subshrubs in their native lands, 1’ - 8’ (rarely 20’) tall  
- Fibrous rooted versus tuberous rooted  
- Ten flower classes, 20,000+ registered cultivars; mostly yellow-orange-red  
- Serious problems with heat, soil and irrigation salts, spider mites, & aphids
**Gladiolus × hortulanus**

- Classic summer corm, widely planted for massing or as cut flower, vertical sword-like leaves, perennial in USDA z. 9 (8) - 10
- Planted for the large 1’ to 4’ (5’) spikes of trumpet or orchid-shaped flowers, available in every color of the rainbow, also bicolors; individual flowers open from bottom of the spike up (acropetally)
- Long grown for commercial cut flowers, Gladiola functions equally well in home cut flower gardens
- Deadheading older basal flowers will give a cleaner look

**Gladiolus × hortulanus**

- Plant successive groups for extended season
- Limited cold hardiness, USDA z. 9 (8b), lift, remove spent corms, and store in cool dry dark place
- Cold, rots, mosaic virus, & thrips are main problems
- Lodges; may require staking

**Lilium spp.**

- Upright stiff stout stalks with spirals of alternate lanceolate to nearly linear leaves terminating in mostly one-sided flower clusters
- Trumpet-shaped flowers with flaring or recurved petals in a range of colors

**Lilium spp.**

- Individual flowers are short-lived, but spectacular when in bloom
- Cold hardiness and heat tolerance vary substantially among taxa from USDA z. 4 - 9
- Chilling requirements and intolerance to poorly drained soils limit use in our region
- Morning sun with afternoon shade helps in Texas & SW USA; full sun elsewhere
- Adds bold splashes of short-term color
- Perennial borders, naturalizing, containers
**Kniphofia uvaria  Torch Lily**
- Clump-forming herbaceous perennial hardy to USDA z. 5 to 9
- Keeled strap-like leaves from short stout underground rhizomes
- Foliage 1’ to 2’ tall x 3’ wide
- Red-Hot-Poker like to yellow flowers on striking erect 3’ - 5’ tall racemes
- Short-lived in hot humid regions
- Plants need irrigation, but also require well drained soils
- Full to partial sun for best flowering

**Fall Bloomers**

**Lycoris radiata  Surprise Lily**
- Also known as Hurricane Lily due to bloom after first fall rains (sometimes hurricanes) or Red Spider Lily after recurved divided corolla and distended stamens
- Good late season color; tolerates some wet soils and heavy clays in winter if dry in summer
- Exhibits a heat / drought rather than cold dormancy
- Red species is more vigorous than the yellowed species (L. aurea)
- Great for naturalizing in drifts or pockets of color

**Rhodophiala bifida  Oxblood Lily**
- Colony forming South American bulb that has naturalized locally in Texas
- Foliage follows flowers, then goes dormant during summer drought
- Sun to part shade, soil pH adaptable, clay to sand, brief poor drainage ok
- USDA zones 7 – 9 (10); resembles a miniature Amaryllis, but with fall bloom
Zephranthes spp.  Rain Lilies

- Foliage is reminiscent of a sedge or monkey grass clump but goes dormant in the summer drought / heat
- Flowers & foliage return with late summer-fall rains, hence “Rain Lilies”
- Several species vary in flowering time and flower color, most have open cup to trumpet shaped flowers
- Welcome harbinger of relief from the summer doldrums
- Tolerates drought, heat, high pH soils, clay soils
- Sort of the anti-Crocus, heralds first signs of fall

Additional images may be viewed on Plant Picture Pages on http://landscapeplants.tamu.edu

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