

# Family Characteristics of Plants to Assist in Identification of the 46 most Common Plant Families in Texas

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FERN FAMILY (Polypodiaceae) Leafy plants growing from rhizomes. Leaves mostly compound and attached directly to the rhizomes. Leaves are called fronds which are coiled from the tip downward. Spore cases, when present, seen as dots, lines or clusters on undersides or edges of the leaflets.  
*Examples:* maidenhair fern, lipfern, cliffbreak, Bracken fern, spleen fern

CYPRESS FAMILY (Cupressaceae) Mostly evergreen trees or shrubs (juniper and Arizona cypress) although one is deciduous (bald cypress). Evergreen species with bark peeling off in strips and having opposite or whorled, scale-like leaves and small, berry-like cones. Deciduous specie of wet habitats with alternate, linear, flat and feathery deciduous leaves often with erect woody projections “knees” from the roots.  
*Examples:* Ashe, redberry, one-seeded, alligator juniper; eastern red, southern red-cedar; bald cypress

PINE FAMILY (Pinaceae) In Texas a family of evergreen trees and shrubs with resinous sap and bark not peeling off in strips. Most are monoecious (with male and female flowers found on different parts of the same tree). Female flowers (pistillate) become cones or are berry-like. Leaves are commonly called “needles” and are narrow, rather stiff, and alternate; borne singly (Douglas fir) or enclosed by sheaths (pines) in clusters of 2-3.  
*Examples:* slash pine, loblolly pine, shortleaf pine, longleaf pine, Douglas fir

SPIDERWORT FAMILY (Commelinaceae) Succulent perennial or annual herbs with knotted nodes on stems with watery sap. Alternate, V-shaped, basally sheathing leaves with strongly parallel veins. Petals 3, delicate and often blue, flower clusters enclosed by boat-like sheaths. The roots are fibrous, thickened, appearing straw-like when carefully dug and loosened from the soil.  
*Examples:* spiderwort, dayflower, wandering-jew

SEDGE FAMILY (Cyperaceae) Grass-like herbs with fibrous roots. Stems solid and seen both as rhizomes and upright culms, 3-sided “sedges have edges”, without nodes. Leaves linear, grass-like, parallel veins, 3-angled, sheathing at base. Flowers small and inconspicuous on terminal branches. Fruit a small 1-seeded nut.  
*Examples:* sedges, bulrushes, flat-sedges, beak-rushes, nut-rushes

RUSH FAMILY (Juncaceae) Grass-like or sedge-like annuals or mostly perennials, often rhizomatous with fibrous roots; stems pithy or hollow, round or flattened on one side “rushes are round”. Leaves grass-like, parallel-veined, alternate, 3-angled like the sedges but often rounded. Tepals 6, not fused, brownish with thin margins.

*Examples:* rush, woodrush

LILY FAMILY (Liliaceae) Mostly perennial herbs growing from a bulb but can also be from fleshy-fibrous or tuberous roots, rhizomes or corm. If from bulbs cutting open the bulb will reveal closely overlapping scales. Stems erect or climbing. Leaves with parallel veins, alternate or whorled, often basal with sheathing at base. Flowers with 3 sepals and 3 petals, identical in size and color. Stamens 6 with a 3-parted stigma.

*Examples:* onion, wild hyacinth, daylily, false garlic, blue funnel lily

GRASS FAMILY (Poaceae) Fibrous roots on annual or perennial plants. Jointed stems and internodes may be solid or hollow. Leaves linear, with parallel venation, consisting of sheath and blade with ligule at top of sheath. Sheath clasps the stems. Flowers without sepals and petals but have pistil and usually 3 stamens. Awns often present on bracts.

*Examples:* native and introduced grasses, small grains, corn, rice, sugarcane, bamboos

WILD PETUNIA FAMILY (Acanthaceae) Mostly perennial herbs with squarish stems; foliage often with minute mineral concretions appearing as lines on vegetative surface. Leaves simple, opposite, usually entire or with indistinctly toothed leaves. Flowers axillary or terminal, solitary or in spikes, cymes, or panicles; sepals 5 united at base or up to 1/3 their length; corollas 2-lipped or nearly radially symmetrical and 4- to 5-lobed; stamens 2 or 4, pistil 1. Fruits a capsule usually with 2 or 4 seeds which are thrown from the plant upon maturity.

*Examples:* carlowrightia, waterwillow, ruellia, tubetongue

AMARANTH or PIGWEED FAMILY (Amaranthaceae) Weedy herbs and subshrubs, annuals or perennials, with erect to prostrate growth. Many with reddish coloration and salt tolerance. Leaves opposite or alternate, simple and mostly entire either sessile or on short petioles. No stipules. Flowers tiny but numerous, green in color and surrounded by prickly or spiny bracts. Corolla absent, 2-5 sepals usually present, opposite 2-5 stamens. Sepals surrounding the fruit. Fruit usually a berry, capsule or nutlet.

*Examples:* amaranth, snakecotton, globe amaranth, tidestromia

SUMAC FAMILY (Anacardiaceae) Deciduous shrubs, trees, or woody vines with resin ducts in the bark and sometimes in the foliage with toxic sap. Leaves alternate or rarely opposite, simple to having 3 leaflets or pinnately compound. Flowers small to inconspicuous and numerous, 5 petals with 5 or 10 stamens. Fruit a drupe.

*Examples:* American smoke-tree, Texas pistachio, sumac, poison-oak, poison-ivy

CARROT FAMILY (Apiaceae) Annual or perennial herbs and often aromatic, stems hollow, often with conspicuous ribbing with resin canals. Internodes of stems hollow and even swollen. Net-veined leaves alternate and often pinnately compound, sometimes dissected with sheaths at petiole. Inflorescence a simple or compound umbel with greenish bracts. Flowers small and white to green, yellow or pink; sepals 5, stamens 5, 2-chambered ovary; 2 styles swollen at the base. Fruits splitting into two symmetrical parts which split apart upon maturity but each half still contains its seed. Each part will show 3, 5 or 7 ridges, sometimes winged.  
*Examples:* sand parsley, chervil, water hemlock, eryngo, Queen-Anne's lace, wavewing

MILKWEED FAMILY (Asclepiadaceae) Perennial herbs or twining vines with unbranched stems containing a latex or milky sap. Leaves opposite, whorled or sometimes alternate (butterfly milkweed), without stipules; simple, entire or undulate, thick but not succulent. When opposite, each pair oriented 90° from pair below. Calyx and corolla lobes 5 united basally and often drooping; 5-parted crown or corona located between the petals and stamens. Stamens 5 on the corolla tube with anthers attached to the stigma (gives an hour glass shape to individual flowers). Fruit a large cigar-shaped follicle with splits open releasing numerous flattened seeds with attached silky hairs for wind-blown pollination.  
*Examples:* milkweeds, swallow-wort, milkvine, twinevine

ASTER & SUNFLOWER FAMILY (Asteraceae) The largest family of flowering plants. Annual or perennial herbs, rarely shrubs or trees. Characterized by several to many small flowers borne in a compact inflorescence – packed together on a flat or dome shaped receptacle. The flowers are usually of two types; ray flowers around the outside (yellow or white), and disk flowers in the center. Ray flowers have 5 petals which are united for a distance then expand to one side as a “ray”. Disk flowers have 5 petals joined into a radially symmetric tube which ends with 5 teeth. A two-branched stigma usually extends beyond the corolla tube. Some species, however, lack ray flowers (ironweed); and some lack disk flowers – made up entirely of ray-type flowers (dandelion). Sepals are modified into scales or pappus.  
*Examples:* ragweed, sagewort, aster, baccharis, thistle, broomweed, sunflower, Liatris, rosinweed

TRUMPETVINE FAMILY (Bignoniaceae) Shrubs, trees or climbing or trailing woody vines. Leaves opposite or uppermost alternate, simple or pinnately compound; entire, toothed or lobed without stipules. Flowers large and showy in terminal panicles or spike-like racemes, or in axillary clusters. Corollas tubular, bilaterally symmetrical, with 2 or 4 separate stamens. Fruits are woody capsules containing winged seeds.  
*Examples:* cross vine, trumpet-creeper, catalpa, desert willow

FORGET-ME-NOT FAMILY (Boraginaceae) Annual or perennial herbs from a basal rosette; round stems smooth or hairy, often with rough bristly hairs. Stem leaves alternate, simple, smooth or hairy and usually without petioles; rosette leaves may have petioles; many covered with rough, bristly hairs. Flowers in 1-sided, uncurling inflorescences shaped like a question mark and uncoiling as the flowers open. Corolla 5-parted funnel- or tube-shaped; 5 stamens with a single style. Ovary deeply divided

into 4 externally visible segments. Fruits usually 4 one seeded nutlets which are frequently bur-like or covered with hooked bristles.

*Examples:* heliotrope, puccoon, false-gromwell, coldenia

MUSTARD FAMILY (Brassicaceae, previously Cruciferae) Annual, biennial or perennial herbs with small yellow or white regular flowers in terminal racemes which bloom in late winter or very early spring. Sepals 4, petals 4, arranged to form a cross. Stamens 6, of unequal length, with inner 4 longer than the outer 2. Stems and leaves frequently with a hot, pungent, "peppery" taste. Leaves alternate, simple or divided and without stipules. Rosette leaves usually different from the stem leaves. Fruits a silique (separating along two lines into three parts with the seeds attached to an inner partition).

*Examples:* mustard, bittercress, draba, Pepperweed, bladderpod, sheppard's-purse, wallflower

CACTUS FAMILY (Cactaceae) Xerophytic shrubs or trees, perennial. Fleshy and jointed stems with watery sap, modified for photosynthesis and water storage, sometimes triangular or flattened. Areoles (pad-like axillary buds) bearing spines. Leaves absent or much reduced. Inflorescence solitary with large, showy, brightly colored flowers. Scale-like leaves at base of flowers may transition into sepals which may transition into petals, stamens numerous. Fruit is a berry often called a tuna for some species.

*Examples:* Devil's-head cactus, hedgehog cactus, nipple cactus, prickly pear, cholla, tasajillo

SPIDER-FLOWER FAMILY (Capparaceae) Annual herbs with exception of the shrub *Koeberlina*, All-thorn.

Closely related to the Mustard family but differing by having stamens of equal length, a one-chambered fruit and alternate, trifoliolate leaves with leaflets entire or nearly so. Flowers in terminal, bracted racemes, sepals 4; petals 4 with each petal showing a long claw at the base; stamens 6 to many; pistil 1, ovary superior. Fruit is a capsule which breaks into two parts without the central partition seen in plants of the Mustard family.

*Examples:* spiderflower, rhombopod, clammyweed, spectaclepod, all-thorn

GOOSEFOOT FAMILY (Chenopodiaceae) Numerous members of this family are xerophytic or halophytic (dry land or salt loving) plants often with a strong scent. Grooved or angular stems, often with red or light green striations, and a whitish tap root. Leaves alternate (rarely opposite) with toothed or lobed margins, elongated or strongly deltoid in shape, without stipules. Leaves have mealy appearance. Inflorescence is a cyme. Flowers with petals absent but with 5 united sepals which usually persist onto the fruit, greenish in color. Sepal lobes usually folded in bud, resembling a button; stamens 5 and placed opposite the sepals. Fruits one seeded with a covering of calyx lobes. Seeds differ from those in Pigweed family by being not as shiny and not easily released from the covering.

*Examples:* saltbush, lambs-quarters, tickseed, Russian thistle, seepweed, tumble ringwing, kochia

MORNING-GLORY FAMILY (Convolvulaceae) Common traits include a twining or trailing growth habit and showy, funnel-shaped flowers. Annual or perennial. Leaves alternate, simple, without serrations but tending to be deeply divided, angular or heart shaped, without stipules. Flowers in cymes or solitary, borne on a jointed peduncle arising from the leaf axils. Flowers large and showy, 5-parted, stamens 5 borne on the corolla. The 5 lobes of the tube-like corolla are folded in bud and twisted at the top.

Styles 1-2. Fruit are capsules with thin papery walls which split to reveal 2-3 chambers each containing 1-2 angular seeds.

*Examples:* bindweed, *evolvulus*, morning-glory, Alamo vine, *bonamia*

GOURD FAMILY (Cucurbitaceae) Annual or perennial herbaceous, somewhat succulent vines, bearing one tendril per node, prostrate or climbing with an extremely rapid rate of growth. Leaves are large, alternate, simple, entire or deeply 5-lobed (palmately lobed). Inflorescence solitary in leaf axils or in axillary racemes. Flowers unisexual (usually male flowers first followed by female flowers), radially symmetrical, corollas 5-lobed, yellow to yellow-orange or white; stamens 3 or 5, free or variously united; ovary inferior; style 1, stigma usually 3. Fruit a modified, fleshy berry called a pepo (a berry developing from an inferior ovary and enclosed by a hard or leathery rind).

*Examples:* buffalo gourd, balsam gourd, melonette, bur-cucumber

HEATH OR BLUEBERRY FAMILY (Ericaceae) Shrubs, trees or rarely herbs or vines. Leaves simple, alternate or rarely opposite or whorled; leathery and evergreen or deciduous, entire or serrate. Inflorescence usually in racemes or panicles, often hanging, rarely solitary; calyx of 4 to 7 distinct or partially united sepals which are usually persistent; corolla of 4 to 7 distinct or united petals; commonly funnel- or urn-shaped. Stamens twice as many as the corolla lobes and attached to the petals; anthers two-lobed and opening by terminal pores; style single; stigma minute. Fruit a capsule, berry or drupe.

*Examples:* Texas madrone, pointleaf Manzanita, azalea, farkelberry, Missouri blueberry

SPURGE FAMILY (Euphorbiaceae) A large, complex and difficult family to recognize. Glandular annuals or perennials; stem sap usually acrid or milky; plants sometimes succulent and fleshy. Leaves alternate or less often opposite or whorled; usually with stipules (which may appear as two spines below each leaf); simple although some are so deeply lobed to appear compound; entire, toothed, or lobed. Inflorescences highly variable in flower form but flowers are always unisexual; sepals and petals may be present (if so 5) or absent. Ovary superior with three carpels. Fruit a schizocarp, capsule or drupe.

*Examples:* croton, wild mercury, spurge, leaf flower, noseburn, Queen's delight, copperleaf

BEAN or LEGUME FAMILY (Fabaceae) Shrubs, trees, vines although mostly herbs. Leaves are generally alternate, compound, and often having stipules at the base; some are sensitive to touch. Leaves can be entire, or rarely toothed or lobed. Inflorescence in racemes, panicles, spikes, heads or umbel-like clusters. Sepals 5, separate or united; petals 1-5, equal or in most genera unequal; stamens 5 to many; pistil 1. Fruit a legume (one chambered, separating into two halves with 1-several seeds born in row) or sometimes 1-seeded.

*Examples:* Flowers regular (radial symmetry) = mimosa, acacias, mesquite

Flowers not radially symmetric, but not pea shaped = redbud, partridge pea, honeylocust

Flowers shaped like a pea with 2 wings and 2 petals making up a keel = clovers,

bluebonnets, snoutbeans, lespedezas, wildbeans, vetch, Tickclovers, wild indigo

OAK or BEECH FAMILY (Fagaceae) Trees and shrubs with deciduous or rarely evergreen leaves; simple and variously toothed or lobed. Male flowers borne in spreading to drooping catkins or in dense clusters. Female flowers are surrounded by a cup-shaped whorl of bracts. Inferior 3 to 7-celled ovary becomes a one-seeded nut at maturity with the cup-shaped bracts enclosing the fruit (beech or chestnut) or is basal (oaks, the cup of the acorn).

*Examples:* chestnut, beech, oaks

GENTIAN FAMILY (Gentianaceae) Annual or perennial herbs with bitter taste, glabrous or mostly so; leaves simple, margins entire, opposite, whorled or rarely alternate, sessile to occasionally long-petioled, without stipules. Flowers terminal, solitary or in cymose inflorescences; calyces often with prominently ribbed tube, usually 4-5 teeth or lobes, corollas with long tube and flattened petals; stamens inserted on the corolla tube, alternate and as many as the lobes; superior ovary 1-celled or rarely 2-celled; styles short or none, stigma entire to divided. Fruits a 1-chambered, many seeded capsule.

*Examples:* mountain pink, Texas centaury, bluebells, prairie rose-gentian

GERANIUM FAMILY (Geraniaceae) Annual, perennial or rarely biennial herbs with much branched stems, often with aromatic oil glands at base of anthers. Leaves alternate or subopposite; simple or compound, toothed or lobed, with somewhat papery stipules. Inflorescence a cyme, umbel or in pairs on a slender peduncle and slender petioles with narrow bracts. Sepals 5, petals 5, stamens 5 or 10, the filaments united basally; pistil with 5 carpels, ovary superior, the united styles growing longer and firmer in fruit forming a prolonged beak. Fruit a capsule or schizocarp. Maturing fruits of *Erodium* can be separated into 5 spear pointed shafts resembling the seeds of Texas wintergrass. Upon full maturity the shafts (styles) will tightly twist as they dry.

*Examples:* Texas filaree, California filaree, Carolina geranium, Texas geranium

WATERLEAF FAMILY (Hydrophyllaceae) Annual or perennial herbs arising from a basal rosette with weak or reclining stems. Rosette and stem leaves similar; with alternate to opposite leaves being entire to toothed or lobed, often with hairs; frequently showing large "water spots" as splotches on the upper leaf surface. Inflorescence is a one sided coil shaped like a scorpion's tail. Flowers regular with 5-parted calyx and corolla; corolla bell- to funnel-shaped, white to bluish purple in color; stamens 5 attached to the base of corolla tube, carpels 2, and united; filament bases rarely expanded on both sides into wings or appendages; pistil with 2 carpels; ovary superior; styles or stigmas 2. Fruit is a many seeded capsule which may be hairy.

*Examples:* Aunt Lucy, hydrolea (water leaf), baby blue-eyes, phacelia

MINT FAMILY (Lamiaceae, previously Labiatae) Herbaceous annual or perennials, occasionally woody shrubs. Aromatic foliage when crushed, "minty" odor and 4-sided, square stems. Leaves opposite, simple, entire, toothed or lobed, without stipules and arranged at 90 degrees angle to each other. Inflorescence axillary or terminal, in various forms; calyces 2- to 5-toothed or lobed; corollas usually bilaterally symmetrical, commonly 2-lipped; stamens 2 or 4 attached to the corolla tube, with 2

shorter than the other 2; pistil and style 1; ovary superior with 4 lobes. Fruit is 4 nutlets included in the persistent sepals.

*Examples:* horsemint, sage, skullcap, mock pennyroyal, henbit, horehound, germander

LAUREL FAMILY (Lauraceae) Aromatic trees or occasionally shrubs with alternate, simple, entire or lobed, persistent or deciduous leaves, stipules absent; or sometimes twining, parasitic vines with tiny, scale-like leaves. Flowers small, in clusters, greenish yellow or yellowish; sepals 4 to 6; petals 0; stamens basically 9-12, in 3 or 4 series of 3 each, some sterile; anthers 2- or 4-celled, opening by 2 or 4 uplifted valves. Usually superior ovary, 1-celled, style simple. Fruit is a hanging 1-seeded berry or drupe.

*Examples:* spicebush, red bay, sassafras, finestem lovevine

MALLOW FAMILY (Malvaceae) Annual and perennial plants herbaceous or shrubby, often with mucilaginous sap and tough fibrous bark, usually with simple, forked or stellate hairs. Leaves alternate, usually palmately nerved, simple or rarely palmately compound; entire, toothed or lobed; petioled, stipules present, sometimes falling early. Flowers radially symmetric with 5 sepals, 5 petals, and numerous stamens united to form a column around the style (extra calyx outside normal calyx). Ovary usually superior, carpels 3 or more, 1-celled, style usually several branched. Fruit usually a capsule or a wheel shaped schizocarp resembling a flattened orange without the skin, containing several hairy seeds.

*Examples:* Indian mallow, sida, cotton, hibiscus, cheese-weed, globe mallow, pavonia, poppymallow

FOUR-O'CLOCK FAMILY (Nyctaginaceae) Annual, biennial or perennial herbs, shrubs or trees from a fleshy or woody taproot; stems erect or reclining often with at least the lower nodes swollen; repeatedly branching as paired forks or in threes; glabrous or pubescent; sometimes armed with spines. Leaves mostly opposite, sometimes alternate or having false whorls; sessile or petioled, blades entire or sometimes dentate or lobed. Single corolla and calyx whorl often subtended by 5-lobed cup of bracts, ovary superior, developing into a nut-like 1-seeded achene enclosed by the floral tube.

*Examples:* sand verbena, angel trumpets, spiderling, four-o'clock, scarlet muskflower, Devil's claw

OLIVE FAMILY (Oleaceae) Perennial shrubs or trees (nearly herbaceous in *Menodora*). Leaves opposite, simple or compound, entire, toothed or lobed, no stipules. Inflorescence a panicle or raceme; flowers axillary, lateral, or terminal, perfect or unisexual; with or without calyces and corollas, when present 4-lobed or -parted (except 10-14 calyx lobes and 5-6 corolla lobes in *Menodora*); stamens 2 or rarely 3-5, growing with the corolla and alternate with the lobes. Stigma 2-lobed. Ovary having 2 carpels, superior, with 2 ovules in each cell. Fruit a drupe, capsule or samara.

*Examples:* elbowbush, swamp privet, ash, jasmine, ligustrum, showy menodora

EVENING-PRIMROSE FAMILY (Onagraceae) Annual or perennial herbs or half-shrubs. Leaves basal, alternate or opposite; simple, entire, toothed or pinnately lobed; stipules minute or lacking. Flowers perfect and radially symmetric; sepals 4, generally reflexed when flower opens, may adhere to each other. Petals 4 attached to top of extended floral tube (hypanthium); inferior ovary, stamens 4 or 8 (flower

parts in fours or multiples of fours), stigma usually divided into 4-way cross. Fruit cylindrical, 1 to many seeded capsules, elongated vase-shaped and often ribbed. Fruits of gaura resemble Phillips head screwdriver bits.

*Examples:* evening primrose, gaura, water primrose, halfshrub sundrop, desert evening primrose

**KNOTWEED FAMILY (Polygonaceae)** Annual or perennial herbs or herbaceous vines. Stems erect, twining or prostrate containing a pungent acid juice. The juice causes eye irritation, hence the name smartweed. Leaves alternate or rarely opposite or whorled, the blades entire or rarely lobed or toothed; petioles usually present, membranous stipules present, usually sheathing the stem at base of leaf, though absent in *Eriogonum* and *Brunnichia*. Inflorescence in fascicles arranged in spikes or racemes. Flowers small, calyx of 2 to 6 usually nearly entirely separate sepals (whitish or pinkish), sometimes developing keels or wings, corolla absent; stamens 2 to 9, the filaments often dilated basally; anthers 2-celled, each cell with a longitudinal slit; ovary 1-celled, styles 3 or 2, usually not much united. Fruit a 3-sided achene or nutlet with a single seed often falling still covered by the remains of the calyx.

*Examples:* wild buckwheat, knotweed or smartweed, curly dock

**BUTTERCUP FAMILY (Ranunculaceae)** Annual or perennial herbs or woody climbers (*Clematis*); leaves basal, alternate or in a few genera opposite or whorled; simple or compound, entire, toothed, or lobed, with or without stipules. Inflorescence a cyme or flowers single with spirally arranged parts; sepals often free, few to many, often with nectaries on inside base and/or spurred; stamens usually numerous, pistils 1 to many, style 1, stigma lateral or terminal, usually minute; ovary superior. Fruit a follicle, achene or berry.

*Examples:* anemone, columbine, clematis, larkspur, buttercup, meadowrue

**BUCKTHORN FAMILY (Rhamnaceae)** Shrub, small tree or woody vine. Leaves opposite or alternate, seasonally deciduous; leaf stalks and minute stipules present; sometimes with 3 main veins or with secondary veins strikingly parallel. Flowers usually small, greenish or yellow-green, 4 or 5 sepals with usually 4 or 5 clawed or spoon-shaped petals (though absent in some species); and 4 or 5 stamens that are opposite the petals and alternate with the sepals and whose anthers are partly hooded by the ends of the spoon-shaped petals; style solitary; ovary 1- to 4-celled, each cell with one ovule. Fruit a drupe with 1, 2 or 3 stones or a schizocarpous capsule.

*Examples:* Alabama supplejack, ceanothus, colubrina, condalia, coyotillo, buckthorn, lotebush

**ROSE FAMILY (Rosaceae)** Shrubs, trees or herbs, frequently with thorns. Leaves alternate, cleft, or divided, pinnately or palmately compound. Stipules generally present at base of leaf. Flowers regular (radial symmetry) and perfect. 10 to numerous free stamens and pistils surrounded by 5 petals and 5 sepals, sometimes 3 to 8 sepals, rarely united at base, often appearing double by a row of outer bractlets. Hypanthium present (cup-like structure composed from the fused petal, sepal and stamen bases). Fruit type variable, often pome (apple-like), drupelets (blackberry-like), drupe (stone fruit), dry capsules or dry nutlets.

*Examples:* mountain mahogany, hawthorne, Apache plume, cinquefoil, plum, rose, dewberry

COFFEE or MADDER FAMILY (Rubiaceae) Shrubs, trees or herbs, rarely climbing. Leaves opposite or whorled, simple, entire; stipules often united to form a sheath, rarely leaf-like. Flowers perfect or unisexual, regular, usually in panicles or cymes, sometimes solitary or clustered in heads; calyx tube more or less united with the inferior ovary. Corollas tubular with usually 4 lobes, although can range from 3 to 6; stamens 3 to 6 inserted on the corolla throat; pistil 1; styles and stigmas 2-4. Fruit a capsule, berry, drupe or schizocarp.

*Examples:* buttonbush, buttonweed, bedstraw, bluets,

CITRUS or RUE FAMILY (Rutaceae) Armed or unarmed shrubs or perennial herbs, rarely small trees. Leaves alternate or opposite, often pinnately or palmately compound or by reduction simple, usually firm, thickish and aromatic, underside of leaves with small dots revealing oil glands (obscure in *Ptelea*). Petioles and/or rachis often wing-margined, stipules absent. Flowers perfect in various types of inflorescences; sepals 4-5, free or fused; petals 4-5, free or fused; nectar disk inside flower below ovary and stamens; stamens 8 to many, often in groups, sometimes fused. Ovary superior, 4 to many fused carpels. Fruit a berry, drupe, schizocarp or hesperidium (orange); fruit wall often with oil glands.

*Examples:* Dutchman's breeches, pricklyash, bitter orange, Mexican orange, hoptree

SOAPBERRY FAMILY (Sapindaceae) Shrubs, trees or climbing vines. Leaves alternate, simple or palmate to pinnate or odd-pinnate, with or without stipules. Male and female flowers on separate plants or often some flowers appearing perfect; flowers regular or irregular, usually borne in racemes, panicles or cymes; sepals 4 or 5; petals commonly 4 or 5; often with scaly or hair-tufted nectaries on lower inner side; stamens usually more numerous than petals, typically 8 or 10 in two whorls; anthers 2-celled. Fruit a berry or capsule, sometimes a schizocarp or smaralike mericarps.

*Examples:* ballonvine, soapberry, Mexican buckeye, Mexican urvillea

FOXGLOVE FAMILY (Scrophulariaceae) Mainly annual or perennial herbs, occasionally shrubs or rarely trees. Stem not angular. Leaves alternate or opposite. Flowers perfect in racemes or panicles, never terminal (in ours); sepals 4 or 5, free or united; corollas bilabiate or more or less irregular; the 4 or 5 buds imbricated in bud; stamens sometimes only 2, rarely 5, inserted on the corolla tube; style single, stigma entire or bilobed. Ovary superior. Fruit a 2-celled capsule, many seeded.

*Examples:* agalinis, water hyssop, Indian paintbrush, ceniza, toadflax, penstemon, speedwell

NIGHTSHADE FAMILY (Solanaceae) Annual and perennial herbs, shrubs or trees. Leaves alternate or fascicled, sometimes with some opposite, entire to odd-pinnate; flowers in umbels, cymes or panicles, or solitary and lateral, perfect, regular or nearly so, 4- to 6-parts; calyx usually 5-toothed or 5-cleft (rarely 4-toothed), calyx and corolla star-, trumpet-, or funnel-shaped or tubular in general; stamens usually 5, distinct or slightly united by the anthers; filaments distinct, inserted on the corolla tube alternate with the lobes; anthers opening by slits or pores; styles 1; stigma entire or 2-lobed; ovary superior, usually 2-celled. Fruit a berry or capsule, seeds many attached to center of fruit.

*Examples:* chillipiquin, jimsonweed, wolfberry, ground cherry, nightshade

VERVAIN FAMILY (Verbenaceae) Annual or perennial herbs, shrubs, woody vines or trees; branchlets and twigs mostly four-angled. Leaves mostly opposite, deciduous, mostly simple, sometimes compound or 1-foliolate; the blades entire or variously dentate, incised or cleft (leaves similar to leaves of the Mint family but the leaf teeth tend to be more pointed and the foliage has no “minty” odor. Inflorescence axillary or terminal, as cymes, racemes, spikes, panicles, heads or false umbels. Bracts at the base of the flowers sometimes colored. Flowers mostly irregular, calyx and corolla 5-parted; corolla sometimes 2-lipped but not as distinctly as the Mints. Stamens 4, borne on the corolla in 2 sets of unequal length or sometimes a 5<sup>th</sup> stamen is represented by an antherless staminode. Superior ovary of two carpels, 4-parted but not deeply divided, a single terminal style. Fruit usually a dry schizocarp or less commonly a drupe or fleshy schizocarp.

*Examples:* Aloysia, beautyberry, lantana, lippia, frog fruit, verbena, vitex

CALTROP FAMILY (Zygophyllaceae) Prostrate or ascending annual or perennial herbs from an herbaceous to woody rootstock, shrubs or rarely small trees; branches diffuse, crooked at nodes; stipules present. Leaves opposite or rarely clustered in fascicles at nodes or alternate, even-pinnate and once-compound or rarely irregularly pinnatifid; leaflets usually opposite and paired, entire. Flowers perfect, regular or nearly so, 5-parted, pseudaxillary; peduncles solitary or rarely clustered. Sepals 4 or 5, free, sometimes unequal; stamens 10 to (12 to 15), usually in 2 whorls; filaments free or sometimes winged basally or with a basal appendage; ovary superior. Fruit a lobed or winged variously dehiscent capsule, or separating at maturity into 5 to 10 indehiscent mericarps; seed 1 to many.

*Examples:* caltrop, puncture vine, guayacan, creosote bush

#### References:

Checklist of the Vascular Plants of Texas, Stephan L. Hatch et al, MP-1655 July 1990

Plant Identification using Family Characteristics, D. James Morre, Dept of Botany, Purdue University, Balt Publishers, Lafayette, Indiana, 1971.

Manual of the Vascular Plants of Texas, Conovan S. Correll and Marshall C. Johnston. Texas Research Foundation, 1970.

Shinners & Mahler’s Illustrated Flora of North Central Texas, George M. Diggs, Jr et al, Botanical Research Institute of Texas, 1999.

Field identification of the 50 most common plant families in temperate regions, Lena Struwe, Rutgers University, 2009.

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