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**PLANTS OF ORNAMENTAL VALUE FOR THE  
RIO GRANDE VALLEY OF TEXAS**

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**Figure 1. Tall Fan Palm (*Washingtonia robusta*).** These tall growing palms are most useful for avenue plantings and are most effective when silhouetted on the horizon.

A description of the appearance and behavior of many native and ornamental plants found suitable for planting in the Lower Rio Grande Valley of Texas is presented here for use in landscaping and beautification in the area. The valuable trees and shrubs suited to the area are listed and described. The study also includes both annual and perennial flowers as well as a number of valuable plants that can be treated as perennials even though they sometimes are too tender for treatment as shrubs.

Two previous bulletins, No. 447, "Trees and Shrubs of Northwest Texas," and No. 551, "Valuable Plants Native to Texas," may be used along with this bulletin in a study of the native and ornamental plants available for different sections of the State.

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# PLANTS OF ORNAMENTAL VALUE FOR THE RIO GRANDE VALLEY OF TEXAS

By

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This publication presents a summarization of the accumulated experience of the Experiment Station Staff and certain cooperators with the ornamental material presented. All plants have been listed by both their common and scientific names in the hope of making the publication of widest use. A short discussion of the more practical phases of growing and protecting ornamental plants has been included for the convenience of home gardeners. The discussions relate only to plant material considered to be useful in the Lower Rio Grande Valley, but all material tested has been listed in tabular form and arranged according to scientific name.

Related Texas Station publications include Bulletin 447, "Trees and Shrubs of Northwest Texas," Bulletin 551, "Valuable Plants Native to Texas," Circular 87, "Rose Diseases" and Circular 90, "Rose Growing for the Home Gardener." The last three, especially, will be found useful to the home gardener in the Lower Rio Grande Valley.

Many thousands of dollars have been wasted in the Lower Rio Grande Valley in an effort to establish plants in this environment that are not adapted to prevailing conditions. Many plants which are not adapted to our soil and climate should give way to more suitable material. For example, the very attractive subtropical species of *Casuarina* are to be preferred to the *Arborvitae*, and we should learn to avoid the pest-ridden Hackberry when it is just as easy to grow the beautiful Silk Oak or the Brazilian Pepper Tree. Visiting horticulturists have lamented the use, by amateur gardeners and even by municipalities, of the less attractive deciduous plants when they might have used evergreen species that lend beauty to the landscape throughout the entire year. Why grow China-berry trees, *Spiraea* and Honeysuckle in a land that will produce the lordly palm, beautiful Orchid Tree or the showy Flame Vine?

The Lower Rio Grande Valley is a region of fertile soils and fairly equitable climate, but it should be freely admitted that conditions are not favorable for the growing of many types of plants. It has been said that it is much easier to acclimate a tropical or subtropical subject to the temperate region than to grow plants from northern latitudes in the near tropics. Gardeners who have attempted to establish Dogwood or Maple trees in this region can testify as to the difficulty of using northern

materials. Climate may not always be the most important factor affecting adaptability of many plants, as soil and irrigation also handicap the chances of certain exotics.

It is obvious that the appearance of many premises could be greatly improved by the judicious use of a few inexpensive ornamental plants. This aesthetic value is entirely aside from the practical benefits to be derived from a few well placed shade trees, a windbreak planting or a protective hedge of thorny but attractive native shrubs.

When fitting plants into the landscape scheme, it is well to consider that some plants have certain requirements that must be supplied from the environment, while other plants can endure and thrive in positions that would prove fatal to other subjects. By having a working knowledge of available ornamental material it is possible to fit the subject into the environment rather than attempt the costly business of modifying the environment. It is a known fact that some types of plants thrive in shady locations while others must have full sun. Likewise, some plants will endure drouth and can be planted in locations where they are likely to be neglected while others must be supplied with an abundance of soil moisture. Plants such as Sea Grape and Australian Pine will thrive in brackish soil, while salt-sensitive plants such as the Loquat and Avocado must be planted only on the best drained soil.

Resistance to cold or the ability to survive expected minimum temperatures is not prerequisite to adaptability as may tender plants such as hibiscus, poinsettia and bauhinia are frequently killed to the ground, but their perennial roots survive and the plant soon attains its original size.

Certain plants do not thrive in the slightly saline, alkaline soils of this region because of deficiency diseases brought about by the high lime content of many Valley soils. Roses are not well adapted to Valley soils, but thousands of healthy, prolific plants are grown in this region, simply by modifying the soil to correct the alkalinity.

Immunity to certain soil borne diseases like root rot and root knot, while highly desirable, is not absolutely essential. It is now known that susceptible plants can be grown on soil that is subject to infection from these two diseases. By planting in sod and through soil sterilization by disease inhibiting chemicals it is possible to grow successfully a wide variety of ornamental plants which are highly susceptible to these soil diseases.

## METHODS

The information presented in this publication has, for the most part, been obtained from adaptability tests conducted at the Lower Rio Grande Valley Experiment Station. In cases where no specimens were grown under actual test, and where the data pertaining to plant characteristics and adaptability are based on material grown away from the station, an asterisk (\*) has been used to identify this material. Most measurements and observations were based on the performance of plants ranging in age



from five to fifteen years. In many cases, plants have been eliminated from the tests after a single year where they have been found to be totally unadapted. Since station experience has been compared with that obtained from larger scale trials by local nurserymen and home gardeners, it is believed that the adaptability ratings are reliable.

In arriving at an adaptability score for any plant, the ability of the plant to become established when given reasonably good care, and the rate of growth and general vigor of the subjects throughout the test, were given due consideration. A score of zero (0) indicates that the subject can be established only with great difficulty (including special care) and that the few specimens which do become established are weak and obviously unadapted to their environment. A score of 10 indicates that the subject is well adapted.

The number of plants used in arriving at the figures presented in the tables ranged from two to 25, or more. Actual measurements were not taken on more than five specimen plants, thought to be typical of the variety.

Yearly records of performance were kept, and adaptability ratings, with comments, have been noted in each annual report of the station. The data herein presented represent the period of years summary of these reports. This applies both to the material grown on the farm and to that grown by cooperators.

Material used in these tests was secured in large part from commercial nurseries in California and Florida. Large quantities of new and untried plants were secured through the Office of Plant Exploration and Introduction of the United States Department of Agriculture. Native plants were grown either from seed or from seedlings brought in from the brush country.

Some of the plants used in these studies were grown in locations where they would ordinarily be used in the landscape scheme, but most of the plants were grown in a plant introduction garden where they could be regularly cultivated, irrigated, and cared for like ordinary row crops. No special soil treatments and no regular spray program was used in growing any of the plants, except subjects known to require special soil adjustment for their normal growth.

### THE GROWING OF ORNAMENTAL PLANTS

It has been said that a person must have a knack for growing plants to succeed at gardening. This may be true in the case of some of the more difficult subjects, and there is sometimes an element of luck involved in getting a transplanted tree or shrub off to a good start. However, good care and the use of up-to-date methods will help to prevent failures. Attractive gardens and home plantings do not occur by chance but represent painstaking effort on the part of some plant enthusiast. The utilization of native plants in landscape beautification is probably the least expensive and the surest method. The foundation stock can sometimes



be obtained for the digging, and once it is established, will endure more neglect and unfavorable growth conditions than imported material. The more skilled gardeners will certainly want to grow some of the more unusual exotics, especially tropicals. Regardless of what material is used, the grower is certain to feel a thrill of accomplishment once the project is well under way.

### Soils

Since the soil is the medium in which our plants must grow, it might be well to consider a few facts concerning soils; their origin, properties, and uses. Geologically, soil is disintegrated rock, containing varying amounts of organic material that has been worked over by the many soil building agencies. From the purely agricultural viewpoint, soil is the medium in which plants grow and may be of either mineral or plant origin, usually both. Our Valley soils are principally alluvial, but there has been some working over of certain types by wind action. The physical and chemical properties of soils determine their usefulness for agricultural purposes and should receive due consideration. The silts and clays are composed of fine particles and are rather poorly drained, while the sands, loams, and gravelly soils have larger particles and are usually well drained.

Our most desirable Valley soils are loams, and the sandy loams are better drained and easier to handle than the more plastic clay loams and clays. All of our soils are slightly saline and contain relatively large amounts of calcium carbonate. This means that our soils are alkaline as opposed to the acid (low pH) soils common to most of East Texas. Since some plants have definite soil preferences, the grower should select his material accordingly, or should plan to modify the soil to suit the needs of the plants he decides to use. This can be done by using certain acid forming materials and soil conditioning chemicals but is too expensive for wide scale use.

Maintaining proper water relationships is a most important part of soil management. Making provisions for adequate drainage and attending to the irrigation program are the important factors affecting soil moisture. Weeding, cultivating and mulching are important principally as they affect soil moisture and soil temperatures.

### Sources of plants

There are many sources from which plants may be obtained. Probably the least expensive method is to obtain seed of desired sorts and start a tin can nursery. Where the time element is important, gardeners sometimes go out into the brush country and dig out desirable native plants. This has the double difficulty of usually securing an inadequate root system and of depleting the countryside of valuable plants. For these reasons, progressive gardeners prefer to choose from the wealth of ma-

terial at any one of the nurseries that cater to home gardeners. Regardless of where the material originates, the grower should assure himself that the plants are free from noxious pests and diseases that might be introduced into his garden along with the new plant material. This is the principal reason for having nursery inspection laws.

### Propagation

The reproduction of plants is a relatively simple matter in some instances, but certain subjects may require considerable horticultural skill for success. Many annual plants and some of our most satisfactory woody plants are propagated from seed. Others can be grown rather easily from cuttings or layers, while some of the more difficult subjects may require marcotting or cuttage under controlled conditions.

In growing seedlings, one should start with soil that has been sterilized by heat or with carbon bisulfide fumigation. The soil should be composed of a mixture of equal parts by volume of gravelly sand, good garden loam, and peat-moss or compost. This also makes a good potting soil for use in the tin can nursery. The seed may be planted in shallow flats or boxes, but it is often desirable to plant the seed of large plants in quart oil cans from which the lids have been removed. To insure drainage and facilitate transplanting, the bottoms of the cans should be cut along three-fourths of the perimeter. The larger sized cans make excellent receptacles in which to grow plants that must attain considerable size before being moved to their permanent locations.

The growing of plants from cuttings may be accomplished in the open ground, but better results are usually obtained where some sort of cutting frame is used. A small hot-bed, equipped with burlap and lath screens in addition to the sash cover makes an excellent propagating frame. Coarse builder's sand containing about ten per cent by volume of peat-moss is satisfactory rooting medium for most subjects. Keeping soil moisture and overhead humidity at the proper levels requires painstaking care and good judgment. Punctuality in attending to the needs of the rooting cuttings is highly important.

### Planting

It is a relatively simple matter to transplant "balled" or potted plant material, but the setting of "bare root" plants is a more difficult job. Since most of our Valley soils are quite fertile, it is not necessary to dig large holes and fill them with top soil or specially prepared potting soil. This may be desirable when replacing a plant that has died from root disease, but it is usually best to use a hole only slightly larger than the ball of earth about the plant's roots. The important point is to set the plant on fairly firm ground and then tamp the soil about the roots very carefully, so as to avoid air pockets. A sufficient quantity of water should then be poured about each plant, so as to wet and pack the soil

to a depth of at least eighteen inches. Mulching and shading will hasten the recovery of weak subjects that were not hardened off before being moved to their permanent locations. Watering with weak nutrient solution (one level teaspoonful of 11-48-0 per gallon of water) will also help force the growth of newly set plants.

### Cultural Care

Probably the most important cultural requirement of ornamental plants is the maintenance of adequate amounts of soil moisture. Sprinkling the surface of the soil with a lawn hose is not an efficient way of applying water, as too much time is required to thoroughly wet the soil within the roots zone of the plants. Where irrigation water is available, the use of three-inch conductor pipe or three-inch canvas pipe or hose is a most effective way of distributing water over the surface of lawns or about the roots of ornamental plants. This is a much better system than flooding, as adequate amounts of water are supplied without water-logging the entire soil mass.

A certain amount of weeding is essential in the growing of plants, but stirring of the soil is not essential and may cause actual damage in the case of jungle plants such as the avocado. Scraping of the soil with a hoe or removal of weeds with an asparagus knife are effective ways of eliminating undesirable weeds.

### Protection

Since many of our plants are being grown out of their natural habitat, they may require special protection from wind, cold, sun, insects, and disease.

Plants known to be susceptible to wind damage should be planted in sheltered locations or near the center of group plantings. Likewise, shade loving plants should be planted where they will not have to endure the full effects of the sun's rays.

Protection of plants from cold presents a more complicated problem, as some of our most desirable ornamentals are severely damaged by temperatures only slightly below the freezing point. Probably the simplest method of protection from cold is to bank trash-free soil about the base of the plants. Also covering the plants with a basket or hamper will afford considerable protection during cold spells of weather. Both methods conserve the stored heat already in the soil. Wrapping the trunks of plants with paper or other insulating material affords little or no protection during prolonged periods of cold. The burning of fuel oil in cans, buckets, or patented heaters is an effective but rather expensive method of preventing cold damage to valuable plants. In most cases it is not necessary to start heating until the temperature has dropped to about thirty degrees F. The important thing is to start heating before damage has occurred and to have sufficient fuel available to heat throughout the period of the emergency.

The control of insects affecting ornamentals is a subject unto itself. However, every home gardener should know what materials are available for the control of most insects that attack our plants. Most seed dealers have a fair knowledge of insects and insecticides and will help growers identify pests and map out control programs. There are a number of excellent materials which can be used in the control of both insects and diseases. When in doubt about the control of these plant enemies, the grower should consult his County Agent or the Experiment Station.

The control of plant diseases is fully as complicated a process as insect control. Certain abnormal conditions of plants are due to internal causes, usually nutritional deficiencies. These can generally be corrected by adjusting the fertilizer program to the needs of the plant or by adding soil conditioning materials that will adjust unfavorable conditions or release needed plant nutrients. Sulfur-manure compost, peat-moss, gypsum and iron sulfate are a few of the materials commonly used in treating nutritional diseases of plants. These materials are most effectively applied by placing them in holes bored or punched into the soil about the crown roots of the plants. Parasitic diseases of plants are due to invasion of the plant tissues by some sort of living organism. Soil sterilization has been mentioned as a means of avoiding infection from soil borne diseases. "Damping off," root rot, wilt, and root-knot are a few of the diseases which may be controlled by soil treatment. Foliage diseases such as mildew, leaf spot and rust are due to fungi (molds) and may be controlled by spraying or dusting the plants with protective fungicides, most of which contain copper in some form. There are many reliable fungicides which may be purchased at most seed stores. Information concerning their use may be obtained from your dealer or from representatives of the A. & M. College serving this region.

### PALMS AND CYCADS

This group of plants is especially useful in the development of the tropical effect in landscape beautification (Table 1). The true palms all belong to the botanical family Palmaceae. The cycads, including the Sago palms and the *Zamia*, belong to the family Cycadaceae. Palms of the hardier types will survive in many parts of Texas, but forms such as *Washingtonia robusta*, *Phoenix canariensis*, *Cocos australis*, *Phoenix Roebelenii* and *Cycas revoluta* thrive to perfection in the Lower Rio Grande Valley.

The stately fan palms and the graceful Phoenix and Cocos palms may be used for avenue planting (Figure 1), in group plantings at the end of roads, or to give height to mass plantings of the more dwarf types of plants. The dwarf forms such as *Cocos australis*, *Phoenix Roebelenii* and *Cycas revoluta* are especially useful for small group plantings.

Most palms, with the exception of the Royal and Coconut, are sufficiently hardy to be used freely in landscape work in the Lower Rio Grande Valley. This group of plants can endure considerable drouth but do their best when given good cultural care and adequate amounts of water.

All bloom in the spring, although the cream colored bloom is relatively inconspicuous and therefore unimportant.

The principal pest of young palms is the giant beetle which burrows down beside the young plants and then tunnels into the inner tissues. Beetle damaged palms are considerably dwarfed and frequently die as a result of the injuries. These beetles are controlled by flooding the burrows with a pyrethrum solution.

Pruning is probably the biggest job connected with the care of this group of plants.

### Species

*Chrysalidocarpus (Areca) lutescens.* Golden Feather Palm. A palm useful for porch or patio planting. It produces a slender, ringed trunk and graceful curving pinnate foliage with golden yellow stems. Suckering freely at the base, it produces a bushy effect. This palm is very tender to cold.

*Cocos australis.* Dwarf Blue Palm, Australian Palm, Pindo Palm. A rather dwarf palm which produces graceful, recurved, blue-green, pinnate leaves.

The bright yellow, edible fruits are borne in heavy, ornamental clusters. This palm is well adapted to conditions in this region (Figure 2).



*Cocos nucifera.* Coconut Palm. Although this palm is very valuable for its ornamental pinnate foliage and its edible "nuts," it is too tender to cold to be grown in this region except in sheltered locations along the coast.

*Cocos plumosa.* Queen Palm, Plumy Coconut Palm. A tall, slender palm which produces a smooth, light gray trunk and graceful, feathery, dark green leaves (Figure 3). Although somewhat tender to cold and occasionally chlorotic, this palm can be grown successfully in the Lower Rio Grande Valley in sheltered locations.

*Cycas circinalis.* Queen Cycad, Fern Sago. A large cycad which attains a height of six to eight feet. It is symmetrical in its habit of

**Figure 2. Dwarf Blue Coconut (Pindo Palm) (*Cocos australis*). These dwarf palms are very attractive and are hardier than most palms.**

growth, producing graceful, bright green, pinnate foliage. The foliage is subject to sun scald, and it is recommended that this plant be given a shady location.

*Cycas revoluta.* Dwarf Sago Palm. A dwarf plant of stiff, symmetrical appearance. It produces very dark green, stiff, pinnate leaves which have commercial value in floral decorations. Well adapted, and easily propagated by offshoots.



*Erythea armata*. Blue Fan Palm. A very slow growing palm whose stiff bluish-gray "fans" are covered with a powdery bloom on both surfaces (Figure 4). Well adapted.

*Howea Belmoreana*. Kentia Palm, Curly Palm. A small palm useful for porch or patio. It produces slender, graceful, dark green pinnate leaves at the top of a small, upright trunk.

*Latania Commersonii* (*Livingstonia chinensis*). Patio Palm, Chinese Fan Palm. A dwarf fan palm which produces bright green, fan shaped leaves and a slender dark brown trunk. This palm is suitable for porch or patio use only, since it is very tender to cold and subject to wind burn.

*Oreodoxa* (*Roystonea*) *regia*. Royal Palm. A tall, slender palm which produces a smooth light gray trunk and a head of graceful, bright green, pinnate leaves. This

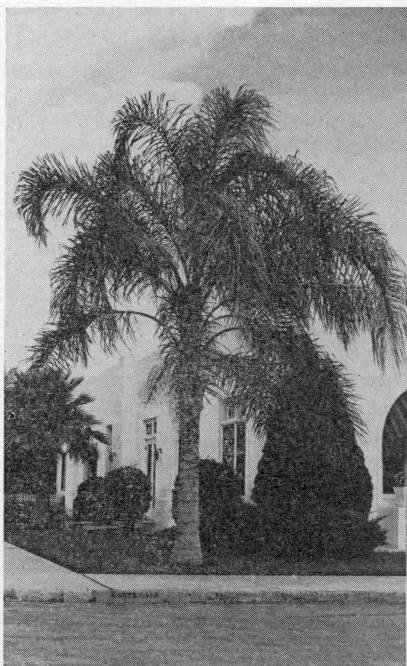


Figure 3. Plummy Coconut or Queen Palm (*Cocos plumosa*). A fairly hardy, upright palm having graceful fern-like leaves.



Figure 4. Blue Fan Palm (Blue Erythea) (*Erythea armata*). A slow growing, dwarf palm that will give color or form contrast to group plantings.

palm is too tender to cold to be used except in a sheltered location.

*Phoenix canariensis*. Ornamental Date Palm. A large, spreading palm which produces drooping, dark green, pinnate leaves and ornamental fruit clusters. It is well adapted and useful in specimen, group or avenue plantings (Figure 5.)

*Phoenix dactylifera*. Date Palm. A large spreading palm which produces gray-green, pinnate leaves that are rather stiff and upright, giving the plant a less pleasing appearance than the Ornamental Date. However, it is well adapted and can be used where a large specimen plant is needed. If edible fruits are



desired, it is recommended that offshoots from superior fruiting plants be secured.

*Phoenix reclinata*. Leaning Palm. A spreading Phoenix palm somewhat resembling the Ornamental Date but having a tendency to form bushy clusters of offshoots. The palm presents a better appearance if the offshoots are allowed to remain. This plant has proven to be quite slow growing and somewhat tender to cold.

*Phoenix Roebelenii*. Pigmy Date Palm. A very dwarf palm which produces a small, upright trunk, and a head of very fine, fern-like foliage. It is quite tender to cold, and is most useful in patio plantings.



Figure 5. Ornamental Date Palm (*Phoenix canariensis*). Especially adapted to avenue planting.

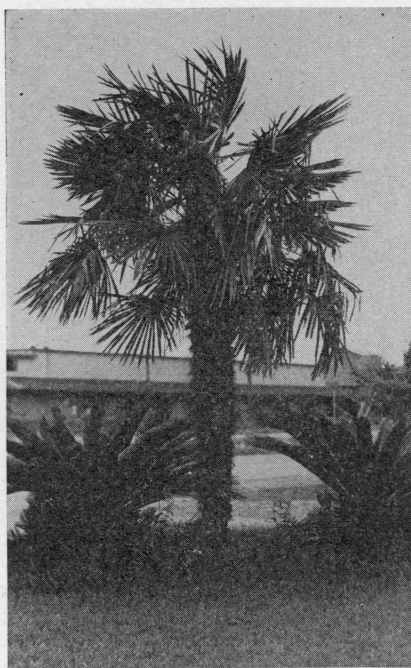


Figure 6. Windmill Palm (*Trachycarpus Fortunei*). This semi-dwarf palm is useful in mixed plantings along with Cycads or other dwarf types.

*Sabal Blackburnia*. Blackburn Palmetto Palm, Giant Palmetto Palm. This is the larger growing species of palmetto which is native to other parts of the state.

*Sabal texana*. Texas Palmetto Palm. The Sabal palms are well adapted and should be extensively used. The native *S. texana* is an upright fan palm producing blue-green foliage. The trunks of the young palms are most attractively laced or "booted" with the green leaf petioles which remain firm and green on the palm trunk for several years. This palm is highly resistant to wind and cold damage. It is supposed to be the first palm tree sighted by Europeans on the North American continent, and was responsible for the first naming of the Rio Grande, "Rio de las Palmas." The Palm Grove near Brownsville is composed of these native palms. Its fruits are considered edible and are sold as fresh fruit in the Matamoras market.

*Trachycarpus Fortunei* (*Chamaerops excelsus*). Windmill Palm. These upright fan palms seldom

reach a height of over ten feet. (Figure 6.) The "fans" are set windmill-fashion on the trunk. The trunk is covered with coarse, loose, brown fiber. Well adapted.

*Washingtonia robusta* and *filifera*. Washingtonia Fan Palm. Both of these species of tall fan palms grow in this region, and are well adapted. *W. robusta*, the taller species, is the most commonly planted. The leaves are cleft  $\frac{2}{3}$  to the base, and the petiole margins are completely armed. *W. filifera* produces leaves which are cleft almost to the middle and the petiole margins are armed about half the length. This species is more wind resistant.

*Zamia integrifolia*, *Z. floridana* and *Z. pumila*. Zamia, Coontie, Comptie. These dark green, dwarf cycads are very ornamental, being especially useful as foreground subjects in palm plantings. There are several species of *Zamias* native to Florida, some of which are collected by the Indians as a source of food and income. The fleshy underground roots produce the arrowroot of commerce.

TABLE 1. PALMS AND CYCADS

Name	Mature Size		Cold Hardiness	Adaptability	Desirability	Notes
	Height (feet)	Spread (feet)				
<i>Chrysalidocarpus lutescens</i> * (Golden Feather Palm)-----	10-15	3- 4	2	6	9	Useful as indoor subject
<i>Cocos australis</i> (Pindo Palm)-----	8-10	6- 8	9	9	9	Excellent dwarf palm
<i>Cocos nucifera</i> (Coconut Palm)-----	20-25	15-20	2	3	1	Useful only on the coast
<i>Cocos plumosa</i> (Queen Palm)-----	20-25	10-15	5	7	8	Useful as specimen
<i>Cycas circinalis</i> (Fern Sago)-----	6-15	6-10	3	7	6	A shade loving, dwarf, palm-like plant
<i>Cycas revoluta</i> (Dwarf Sago)-----	2- 6	5- 6	7	9	9	A symmetrical, dark green, dwarf plant
<i>Erythea armata</i> * (Blue Fan Palm)-----	10-20	4- 8	9	9	9	Desirable, small, fan palm
<i>Howea belmoreana</i> (Kentia Palm)-----	3	2	2	9	9	For indoor use
<i>Latania Commersonii</i> (Patio Palm)-----	5-15	5-10	2	8	8	Indoor use only
<i>Oreodoxa regia</i> (Royal Palm)-----	50-70	10-15	1	3	1	Very tender to cold
<i>Phoenix canariensis</i> (Ornamental Date Palm)-----	25-30	20-25	9	9	9	Extensively used in avenue planting
<i>Phoenix dactylifera</i> (Date Palm)-----	25-30	20-25	9	9	2	Very subject to foliage disease
<i>Phoenix reclinata</i> (Leaning Palm)-----	20-25	15-20	9	6	5	Slow growing; suckers freely
<i>Phoenix Roebelenii</i> (Pigmy Date Palm)-----	2- 4	2- 2½	4	9	9	Very desirable, dwarf date palm
<i>Sabal Blackburnia</i> * (Blackburn Palmetto)-----	25-30	8-10	9	9	9	Well adapted native palm
<i>Sabal texana</i> (Texas Palmetto)-----	15- 25	8-10	9	9	9	Native palmetto palm
<i>Trachycarpus Fortunei</i> * (Windmill Palm)-----	6- 20	6- 8	9	9	9	Very attractive, small, fan palm

<i>Washingtonia filifera</i> * (Calif. Wash. Palm)-----	40- 50	8-10	9	9	9	Very similar to <i>W. robusta</i>
<i>Washingtonia robusta</i> (Mex. Wash. Palm)-----	50-100	8-10	9	9	9	Very popular avenue palm
<i>Zamia floridana</i> (Coontie)-----	1- 1½	1- 1½	8	9	9	Much smaller than sago palm

\*Not grown on the Experiment Station.

Cold Hardiness: 9—Hardy; 5—fairly hardy; 1—tender.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.

## TREES

Because of the wide variation in size, shape, coloration and floral adornment, trees have a definite place in the planting plan and should be placed to best advantage. For roadway or line planting, plant only one species in the row, using group plantings to secure variety in color and form. Certain types of trees make splendid background plants and groups of the tall growing forms can be used as points of emphasis to break the monotony, or hedge row effect, of line plantings and add grandeur to the horizon or silhouette view. If planted in the foreground of small properties, large trees tend to dwarf their surroundings and spoil landscape effects. If shade and comfort are the prime considerations, it may sometimes be desirable to sacrifice a point in landscape technique.

As a general rule, it seems highly desirable to give evergreen trees preference over forms which shed their leaves during the winter season. When referring to evergreens, we mean broadleaf evergreens and not conifers. It seems inappropriate to use conifers in a subtropical planting where there is such a wealth of available material producing more naturalistic effects and having more appeal to residents and visitors alike.

The most general use of this group of ornamentals is for shade. By massing the tree plantings toward the rear of the premises, it is usually possible to secure the much needed shade, and in addition, background effect for the landscaped home grounds. In some cases, it may be advisable to plant shade trees in borders along the property line. Of the more useful shade trees for the Lower Rio Grande Valley, we might call attention to the merits of such trees as Brazilian Silk Oak (*Grevillea robusta*), Texas Ebony (*Pithecolobium flexicaule*), Anaqua (*Ehretia anacua*), Anacahuita (*Cordia Boisseri*), Orchid Tree (*Bauhinia* sp.), Spanish Live Oak (*Quercus virginiana*), Tree Acacia (*Acacia Wrightii*), and Huisache (*Acacia Farnesiana*.)

Municipalities and owners of large estates will be interested in trees for thin line, or avenue, planting. In this group we have subjects such as: Hardy Australian Pine (*Casuarina lepidophloia*), Brazilian Pepper (*Schinus terebinthifolius*), Retama (*Parkinsonia aculeata*) and Carob Tree (*Ceratonia Siliqua*).

To add color to roadside or border plantings of trees one might use groups or single specimens of Anacahuita, Huisache, Retama, Orchid Tree, Desert Willow (*Chilopsis linearis*), Bignonia Tree (*Tabebuia species*), and Coral Tree (*Erythrina herbacea* var. *arborea*).

Specimen trees should be used with care to add interest to the landscape scheme. Monkey Puzzle (*Araucaria imbricata*), Sausage Tree (*Kigelia pinata*), Calabash Tree (*Crescentia species*), Star Pine (*Araucaria excelsa*), Monkeypod or Rain Tree (*Samanea Saman*), Woman's Tongue Tree (*Albizia Lebbek*), Pickle Tree (*Averrhoa carambola*) and Banyan (*Ficus benghalensis*) are recommended for such use.

### Species

*Acacia Baileyana*. Robin's Egg Blue Acacia. Both forms of this species are weak growing but very ornamental, the sprays of flowers being used in



floral arrangements. *A. Baileyana* produces gray-green foliage and yellow globular flower clusters. *A. Baileyana* var. *purpurea* produces very small blue-green foliage tipped with purple. (Leguminosae.)

*Acacia cultriformis*. Knife, Crowded-Leaf Acacia. A tall shrub or small tree having very crowded, blue-green pinnate foliage; produces typical acacia flowers, yellow in color.

*Acacia Farnesiana*. Huisache. This native acacia produces very dark green, acacia foliage, deep golden-yellow balls of flowers very early in the spring, which are followed by short, cylindrical, black seed pods. A rapid growing, flowering ornamental, having many thorns.

*Acacia Greggii*. Long-Flowered Catsclaw. A small native tree which produces medium green acacia foliage and elongated heads of cream colored spikes of flowers. Very thorny.

*Acacia longifolia* var. *floribunda*. Flowering Acacia. A small tree which produces dark-green linear leaflets, and a profusion of creamy-yellow balls of flowers.

*Acacia Roemeriana*. Round-Flowered Catsclaw. A small native acacia tree which produces very dark green, oval leaflets and a profusion of greenish-yellow balls of flowers, followed by curved red seed pods. This is one of the first of the native trees to bloom in the spring.

*Acacia Wrightii*. Tree Acacia. A large growing, typical acacia tree which produces elongated heads of white acacia flowers. This is the largest of the native acacia trees.

This group of trees is usually grown for its ornamental bi-pinnate foliage and crowded spikes of spring flowers which are followed by dark colored pods.

*Albizia Julibrissin*. Silk Tree, Powder-Puff Tree. A small, deciduous tree having finely cut, medium green foliage and gray bark. In the spring, it produces typical "powder puff" flower heads which are pale pink in color. A slow growing species (Leguminosae.)

*Albizia Lebbek*. Woman's Tongue Tree. An ornamental tree having bright green, pinnate foliage, inconspicuous heads of greenish flowers, and ornamental, flat seed pods about nine inches long. The clacking of these seed pods give the tree its name. The trees grow rapidly, and appear to be well adapted, but are tender to cold. It produced small white flower heads the second year after planting. Leaves are pinnate; flowers are in heads.

*Amyris madrensis*. Torchwood, Rue Plant. This native evergreen tree is one of the thornless members of the Rue Family. It is upright in habit of growth and produces dark green, crinkled, pinnate foliage; small white flower heads, and attractive reddish-brown drupe-like fruits. The entire plant has an aromatic odor. (Rutaceae.)

*Araucaria araucana* (*imbricata*). Monkeypuzzle. A tall, pyramidal, evergreen tree with spreading, upward curved branches, small, dark green, stiff, lanceolate leaves, and large cones (five inches to eight inches).

*Araucaria excelsa*. Norfolk-Island Pine, Star Pine. A symmetrical, evergreen tree having its branches arranged in horizontal planes so as to form five pointed stars when viewed from above. One of our most interesting exotics. (Pinaceae.)



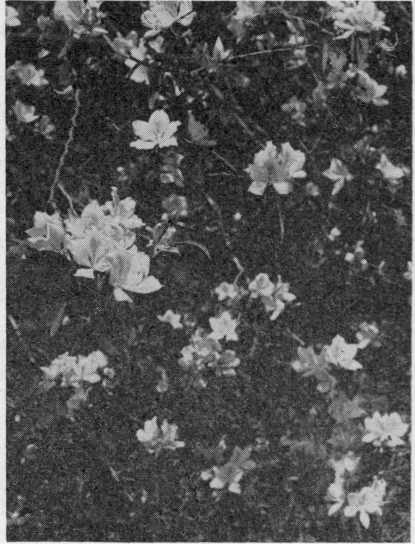
*Arbutus Unedo*. Strawberry Tree. A low growing tree or shrub, which has dark green, oblong evergreen leaves with red stems. The white flowers are born in the fall, followed by scarlet berries. This tree is very slow growing, and has not proven very well adapted to conditions in this region. (Eriaceae.)

*Bauhinia*. Orchid Tree. Large growing shrubs or trees which produce heart-shape leaves, and showy, orchid-like flowers (Figure 7). The White Flowered Orchid Tree, or Mountain Ebony, *B. variegata* var. *candida* (*B. alba*) appears to be the hardiest to cold damage, while the yellow variety, *B. tomentosa* (St. Thomas Tree), and the Red Flowered Orchid Tree (*B. Galpini*) appear to be quite tender to cold. The Purple Flowered (*B. purpurea*) and the Pink Flowered (*B. triandra*) Orchid Trees make rapid recovery if frozen back. (Leguminosae.)

*Bixa Orellana*. Lipstick Tree, Anatto. A small tree producing ovate leaves, panicles of pink to rose flowers, and prickly tan capsules which contain seeds covered with a red coating that is the consistency of lipstick and can be used as a coloring agent. (Bixaceae.)



**Figure 8. Como (*Bumelia Schottii*).** A round topped, spreading, native tree having evergreen foliage. Much more satisfactory for shade than deciduous types.



**Figure 7. Blossoms of the White Flowered Orchid Tree (*Bauhinia variegata* var. *candida*) resemble orchids in their general appearance and are borne in great profusion.**

*Bumelia lanuginosa* (*angustifolia*.) Chittamwood. False Buckthorn. Small thorny trees or shrubs having short stiff branches terminating in thorns. The greenish white, small flower clusters are borne in profusion along the woody stems. Its fruits resemble small black cherries. It produces wedged shaped leaves one to three inches long, glossy green above and woolly underneath. (Sapotaceae.)

*Bumelia Schottii* (*spiniflora*.) Como, Ironwood. A small, round topped, native evergreen tree bearing numerous, shining, dark green, oval leaves (Figure 8.) In late fall,

it produces clusters of greenish flowers, which are followed by blue, oblong fruits in late spring. The Mexicans call the plant chicle, and obtain a latex substance by "bleeding" the green fruits.

*Calliandra hemaetocephala*. Calliandra. An evergreen tree which produces attractive, bright green, pinnate foliage. The globose flower heads produce long silky, purplish to red stamen. (Leguminosae.)

*Callistemon rigidus*. Rigid Bottlebrush. This very dense, small tree has very dark green, linear leaves and extremely large, showy "brushes" that are produced in great profusion (Figure 9). (Myrtaceae.)

*Callistemon lanceolatus* (*citrinus*). Lemon Bottlebrush, Weeping Bottlebrush. A type having bright green, lanceolate leaves and new growth tipped with rose. The young leaves contain a volatile oil that has the odor of lemon. The bushes are less showy than those of *C. rigidus*.

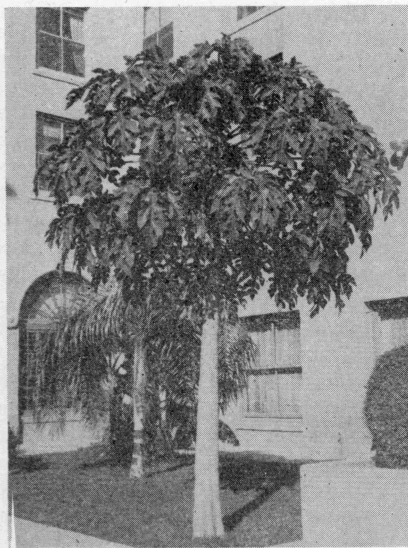


Figure 10. Papaya (*Carica papaya*). A rapid growing, tender, fruiting plant that has a tropical effect.

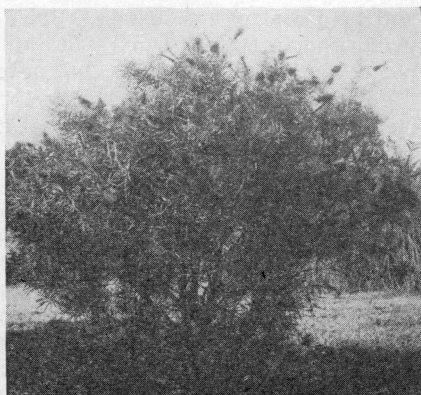


Figure 9. Rigid Bottlebrush (*Callistemon rigidus*). An attractive small tree, that bears numerous, bright red flowers about the size and shape of a milk bottle brush.

These large bushes or small trees appear to be well adapted to conditions in this region. Their chief ornamental value lies in the bright red "brushes" tipped with gold. These "brushes" are followed by hard, dry, seed capsules which adhere to the stems for several years. It takes two years for the seed to mature. The "brushes" are relished by orioles and other fruit eating species of birds.

*Carica Papaya*. Papaya. A herbaceous tree that is well adapted to conditions in this region, and makes rapid growth. It produces large, palmate leaves, cream colored to yellow flowers and large, yellow, melon-like edible fruits (Figure 10). The plants are usually dioecious, and do not come true from seed, unless the flowers are hand pollinated. Papaya plants are quite susceptible to cotton root-rot disease, but treating the soil with sulfur (applied in holes about the tree)

will help control the disease. Since papayas are very tender to cold, all plants should be well banked for winter; if the tops are frosted back, the plants can be topped off, and allowed to sprout out from below. (Caricaceae.)

*Carya (Hicoria) Pecan.* Pecan growing has not proven successful as a commercial enterprise in this region, but a number of pecan trees are being used for shade. The native Texas rootstock has not proven well adapted, and other rootstocks are being tried. (Juglandaceae.)

*Cassia.* Shower Trees. Six species of cassia trees are being grown at the Valley Experiment Station, all of which are well adapted, but some species are quite tender to cold. These small trees produce such a profusion of showy blooms that they deserve a place in the landscaping scheme.

Both *C. nodosa* (Pink Shower) and *C. grandis* (Grand Shower) produce oval leaflets and numerous pink flowers. *C. nodosa* produces bright green glossy foliage; *C. grandis* produces reddish bronzy foliage.

The four yellow flowering cassias produce flowers that are similar, but the foliage and seed pods are distinctive. *C. Fistula* (Golden Shower) produces broad, dark green leaflets and long, slender, "sausage-like" pods (12" long). *C. laevigata* (Smooth Senna) also produces dark green, broad leaflets, but small, cylindrical pods about six inches long. *C. splendida* (Showy Senna), which has become established on this side of the Rio Grande, is native

to the San Juan River Valley. It produces a low, spreading plant with bright green, large oval leaflets and cylindrical pods about six inches long. *C. tomentosa* (Woolly Senna) is also a native of the Mexican side of the Rio Grande, but has become established on the American side of the river. This is an upright tree having gray bark. It produces a continuous bloom of yellow flowers which have a few red markings at the base of the petals. The flattened pods are about six inches long. Unlike most of the cassias which bloom in the spring and summer, *C. laevigata* blooms in August (Leguminosae.)

*Casuarina.* The Casuarinas have proven to be rapid growing in this region but seem to be quite subject to root rot. *Casuarina lepidophloia* (Hardy Australian Pine) does not produce seed but multiplies from root sprouts. *C. Cunninghamiana* (Cunningham Beefwood) has also proven to be a well adapted species. They are pyramidal in habit of

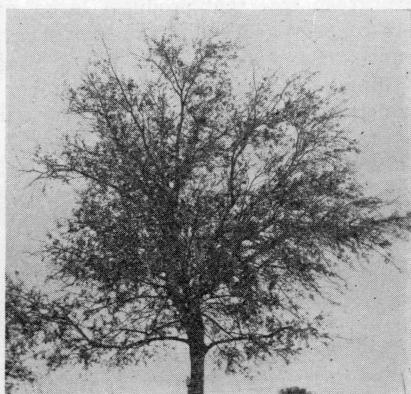


**Figure 11. Clump of Hardy Australian Pine (*Casuarina lepidophloia*). A well adapted, dense foliaged tree suitable for windbreak or hedge planting.**

growth, are very symmetrical, and produce very dark green, pine-like foliage (Figure 11.) *C. equisetifolia* (Horsetail Casuarina) has a greater salt tolerance, but the foliage is less dense, and the plants are more subject to cold damage and to root disease. *C. glauca* (Australian Pine) and *C. montana* (Australian Pine) produce the typical pine-like foliage and small cones, but must be considered less desirable than other species. (Casuarinaceae.)

*Cedrus Deodora*. Deodor Cedar. A tall pyramidal tree producing graceful, sweeping branches and blue green, pine-like foliage. (Pinaceae.)

*Celtis laevigata*. Southern Hackberry, Smooth-Leaf Hackberry. A native, deciduous tree having a spreading top (Figure 12). It



**Figure 12. Hackberry (*Celtis laevigata*).** This native, deciduous tree is widely used as a shade tree because of its rapid growth, but should be replaced by evergreen types, such as the Silk Oak, or some of our native acacias.

grows rapidly, and the rapid propagation of the tree causes it to become a pest in many instances. It produces small, ovate, notched, leaves; inconspicuous flowers and small red berries. (Ulmaceae.)

*Ceratonia Siliqua*. Carob, St. John's Bread. A spreading evergreen tree having dark, reddish-brown bark, red stems, dark green obovate leaflets with a reddish tint, and racemes of red flowers which are followed by silique-like fruits about eight inches long which are said to be edible. This very ornamental tree is quite subject to root rot. (Leguminosae.)

*Cercidium macrum (floridum.)* Palo Verde, Short Leaf Retama. A small flowering tree having dark green bark, very small leaflets and few thorns. (Leguminosae.)

*Cercidium texanum*. Texas Palo Verde, Thorny Palo Verde. Almost shrub like in appearance, this plant is easily identified by the greenish-yellow bark, and numerous thorns.

The showy yellow flowers of these native, evergreen trees are identical in appearance to those of the Retama, but the trees appear to be partially defoliated because of the sparcity of foliage.

*Cercis canadensis*. Redbud, Judas-Tree. A small, deciduous tree that produces dull green, heart-shaped leaves. In the early spring, before the leaves appear, the branches are covered with showy, rosy red, small flowers which never completely open. One of the first flowering trees to bloom in the spring. Not widely used in the Valley. (Leguminosae.)

*Chilopsis linearis*. Desert Willow, Flowering Willow. This is a native, evergreen tree having willow-like foliage, and lavender colored tubular flowers. (Bignoniaceae.)

*Chrysothymum oliviforme*. Star Apple, Satin Leaf. A small, compact.



evergreen tree that produces large, glossy, dark green oblong leaves which are coppery gold color underneath, giving the plant an unusual ornamental effect. (Sapotaceae.)

*Cinnamomum Camphora*. Camphor Tree. An evergreen, pyramidal tree which produces dense, glossy, dark-green ovate leaves having an aromatic odor. The greenish-colored flowers are followed by a profusion of small, succulent, black berries. Well adapted. (Lauraceae.)

*Citrus mitis*. Calamondin. A citrus tree which produces numerous small, oblong leaves and a continuous supply of small, fragrant, white flowers and small, orange colored, acid fruits. This is one of the most ornamental of the citrus species. (Rutaceae.)

*Condalia obovata*. Brasil, Brazil Wood. This native evergreen tree or tall shrub is sometimes called "Bright Green Ebony." It produces very dense, small bright green, obovate leaves, numerous thorns, inconspicuous small flowers, and numerous small red berry-like fruits (Figure 13). (Rhamnaceae.)

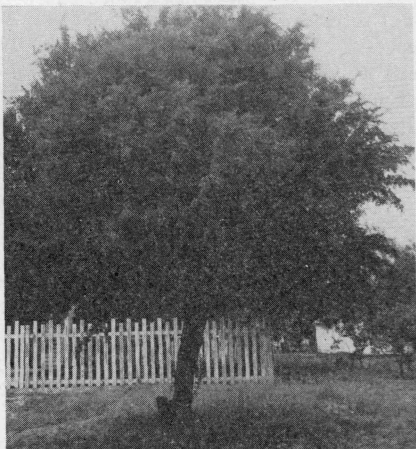


Figure 13. Brasil (*Condalia obovata*). A most attractive, evergreen, native tree having very dense, bright green foliage.

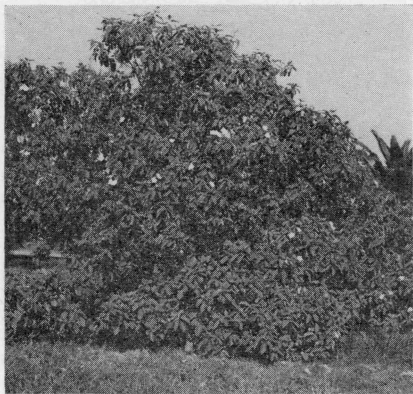


Figure 14. Anacahuita (*Cordia Boisseri*). A showy native evergreen that produces an abundance of white blossoms throughout the greater part of the year. Very popular for roadside plantings.

*Cordia Boisseri*. Anacahuita, Wild Olive. One of the most ornamental of the native trees. It is a round headed small tree which produces coarse large ovate leaves, and a continuous bloom of large white flower clusters followed by creamy white fruits about the size and shape of ripe olives (Figure 14). This tree, which is found in abundance in the Rio Grande Valley, attracts numerous birds and butterflies and should be included in every planting. Grows readily from seed. (Boraginaceae.)

*Cordia Sebestena*. Geiger-Tree, Red Flowered Cordia. A rapid growing, evergreen tree having a round head, large, rough, ovate, green leaves; showy red flowers, followed by olive-shaped fruits.



This tree appears to be fairly well adapted to conditions in this region.

*Crescentia*. Calabash Tree. Both species of Calabash appear to be well adapted to conditions in this region but are very tender to cold. The large fruited type (*C. Cujete*) produces "gourds" up to twelve inches in diameter; the smaller fruited type (*C. alata*) produces fruits from four to eight inches in diameter. The latter produces peculiar lanceolate leaves usually in groups of three, the middle leaf being trifoliate on the tip. (Bignoniaceae.)

*Cupressus arizonica* var. *bonita*. Arizona Cypress. This blue-green pyramidal conifer is fairly well adapted to the Valley (Figure 15). (Pinaceae.)

*Cupressus lusitanica*. Portuguese Cypress. This well adapted species has a semi-horizontal habit of growth and the dark-green foliage assumes a bluish hue during the winter season.

*Cupressus sempervirens* var. *horizontalis*. Horizontal Italian Cypress. These dark green conifers appear to be well adapted and have been used in the Valley to a limited extent.

*Cupressus sempervirens* var. *stricta*. Royal Italian Cypress (Columnar Cypress). These formal subjects are just as well adapted as the horizontal type, but should be used with discretion.

*Cupressus tortulosa*. Bhutan Cypress. This is a true Cypress, and the pyramidal trees have dark-green drooping foliage with a yellowish cast.

*Daubentonia* (*Sesbania*) *Tripetii*. Red Flowered Sesbania. A large shrub or tree from South America that appears to be semi-deciduous under conditions in this region. It has dark green, pinnate leaves and produces numerous racemes of showy, orange and red pea-like flowers followed by three-lobed seed pods. (Leguminosae.)

*Delonix* (*Poinciana*) *regia*. Royal Poinciana. A rapid growing evergreen tree that produces dark green, pinnate foliage; and in early summer, a profusion of large red and yellow flowering racemes that are followed by long seed pods. Royal Poinciana trees are quite tender to cold, and should be given protection until they are mature. It also has been observed that they are quite subject to attack by Huisache girdlers. (Leguminosae.)

*Diospyros Kaki*. Japanese Persimmon. A round topped, deciduous tree

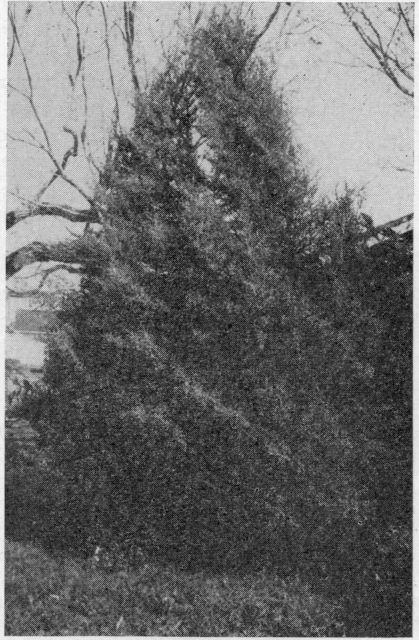


Figure 15. Arizona Cypress (*Cupressus arizonica* var. *bonita*) are used in the Valley, but are not as well adapted as the Portuguese Cypress.

having rather large, round, dark green, ovate leaves. The large, edible fruits are orange to red in color, and vary in shape from oblate to conical. (Ebenaceae.)

*Diospyros texanum*. Texas Persimmon, Chapote, Possum Plum. A small native evergreen tree which produces dark green, glossy, oblong leaves 1 to 1½ inches long. In the spring it produces a number of white, bell-shaped flowers which are followed by purple, plum-like fruits which are relished by the Mexican children.

*Diospyros virginiana*. Wild Persimmon. This deciduous tree bears small, bright ovate leaves, and small edible fruits of uncertain quality.

Persimmon trees are grown to a very limited extent in the Lower Rio Grande Valley. However, the cultivated form appears to be fairly well adapted, and the wild species makes rapid growth.

*Dcyvalis caffra*. Kei Apple. A rapid growing, evergreen, thorny tree which produces bright green obovate leaves, greenish flowers, and bright yellow, juicy fruits. (Flacourtiaceae.)

*Ehretia anacua*. Anaqua, Knock-Away. A native tree which produces a round head; thick, rough, dark-green elliptic leaves; and in the spring a



Figure 16. Anaqua (*Ehretia anacua*). A native evergreen flowering tree that is far superior to Hackberry or Ash as a permanent shade tree.

profusion of small, fragrant white flowers which are followed by numerous small red to yellow edible fruits (Figure 16). Sometimes called Sugarberry. (Boraginaceae.)

*Eriobotrya japonica*. Loquat. An evergreen, round-topped tree that produces large, rough, dull-green oblong leaves. The white flower clusters are borne throughout the summer and fall, but only the late fall flowers produce fruit, which ripens the following spring. The edible, plum-like fruits are orange color. (Rosaceae.)

*Erythrina Cristi-galli*. Brazilian Coral Tree. A slow growing deciduous tree which produces dark green, long-ovate trifoliate leaves and racemes of large, dark red, pea-shaped flowers followed by pods filled with red seed. (Leguminosae.)

*Erythrina herbacea*. Annual Coral Tree, Fireman's Hat. This is a peculiar native plant. It is an annual above ground but has a large perennial root. It produces flowers and foliage similar to *E. herbacea* var. *arborea*.

*Erythrina herbacea* var. *arborea*. Native Coral Tree. A small native tree found only along the Rio Grande Valley Coastal area. It produces bright green, three lobed, trifoliate leaves; and in late winter and early spring,

produces numerous firecracker-like spikes of rosy-red, closed pea-shaped flowers, which are followed by bean-like pods that split open and expose the bright red seed (Figure 17). It is easily propagated by seed or cuttings.

*Esenbeckia Runyonii*. Esenbeckia. A small, round-headed, deciduous, native tree bearing trifoliolate leaves. In the summer it produces showy panicles of cream colored flowers followed by brown capsules. (Rutaceae.)

*Eucalyptus algeriensis*. Algerian Eucalyptus. This variety is the result of a cross between *E. rostrata* and *E. viminalis* and appears to be better adapted to Valley conditions than most species in this group (Figure 18.) It produces blue-green lanceolate leaves. (Myrtaceae.)

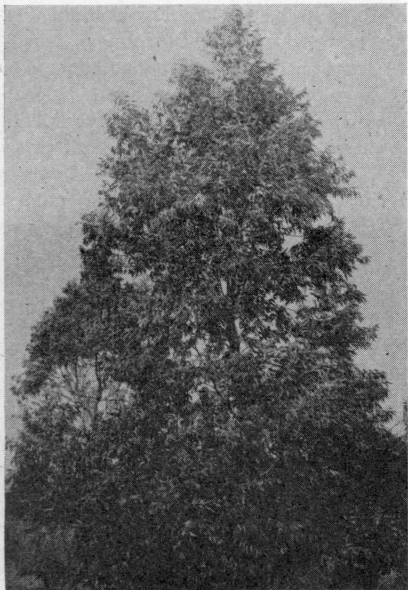


Figure 18. Algerian Eucalyptus (*E. algeriensis*). A well adapted species suitable for background or hedge planting.



Figure 17. Coral Tree (*Erythrina herbacea* var. *arborea*). A most interesting native subject because of its peculiar habit of growth and unusual floral arrangement. The bright red seed also have ornamental value.

*Eucalyptus globulus*. Blue-Gum Eucalyptus. Magnificent specimen trees of this species, occasionally seen in the Valley, have tempted many persons to spend considerable sums in an attempt to grow these majestic trees, which appear to be rather exacting in their soil requirements. They are also somewhat tender to cold.

*Eucalyptus rostrata*. Red-Gum Eucalyptus, Creek Eucalyptus. This species appears to have a fairly wide range of adaptability and a larger percentage of the young trees become established than is the case with Blue-Gum and many other species.

*Eucalyptus tereticornis*. Gray-Gum Eucalyptus. A rapid growing species that is fully as well adapted as Red-Gum.

*Eucalyptus viminalis*. Manna-Gum Eucalyptus. A tall growing species having pendulous branches. Its leaves are narrower than the average Eucalyptus foliage.

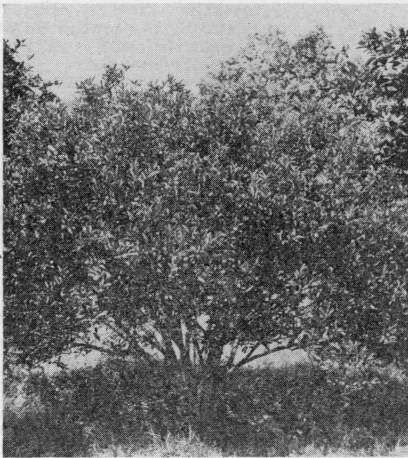
*Eugenia Jambos*. Malabar-Plum Rose Apple. A small evergreen, spreading tree having bright green, shining, lanceolate leaves, the new growth being tinged with red. The greenish flowers, consisting mostly of stamens, appear in the spring, followed by small, yellowish fruits which have a rose odor and flavor. Very tender to cold. (Myrtaceae.)

*Ficus benghalensis*. Banyan Tree. A large ornamental Ficus which produces shining, oval, dark green leaves, and numerous small crimson fruits. This tree is unusual in that it produces numerous aerial roots. (Moraceae.)

*Flacourtia indica*. Governors Plum. A small tree or tall spreading shrub which is occasionally used where a tall hedge is needed. It produces glossy, evergreen, ovate leaves, and the edible fruits resemble cherries or small, red plums. Well adapted, but somewhat tender to cold. (Flacourtiaceae.)

*Fortunella crassifolia*. Meiwa Kumquat. Small tree up to five feet high which produces small white flowers and olive-shaped fruits about three-fourths of an inch in diameter. (Rutaceae.)

*Fortunella japonica*. Marumi Kumquat. Very small, bushy tree (3'-4') which produces very small, white flowers, and small, round, orange colored fruits (Figure 19).



**Figure 19. Marumi Kumquat** (*Fortunella japonica*). A dwarf citrus tree that produces tiny citrus fruits in great abundance.

*Fortunella margarita*. Nagami Kumquat. The tallest of the Kumquat trees in the Experiment Station collection. It produces oblong fruits almost two inches long. The kumquats produce small, glossy, dark green, lanceolate leaves. They have considerable ornamental value.

*Fraxinus Berlandierana*. Mexican Ash, Rio Grande Ash. A native, rapid growing, deciduous shade tree (Figure 20). The bark of this species is not as white as that of the Arizona Ash. Rio Grande Ash leaves out earlier and holds its leaves later in the fall than does the Arizona Ash. (Oleaceae.)

*Fraxinus velutina*. Velvet Ash, Arizona Ash. A rapid growing deciduous shade tree having light green foliage.

Two species of ash are grown in the Lower Rio Grande Valley, one of which is a native to this region. They produce deep green, compound leaves, and light green, dioecious, apetalous flowers which appear in early spring about the time trees begin to leaf out.

*Ginkgo biloba*. Maidenhair Tree. A tree having light green, lobed foliage somewhat resembling the Maidenhair Fern. It grows very slowly, and is



not well adapted to conditions in this region. (Ginkgoaceae.)

*Grevillea robusta*. Silk Oak. A tall, symmetrical, evergreen tree having dark green, pinnate foliage which is silvery on the under side (Figure 21). The racemes of flowers are rusty-red and are followed by seed capsules. (Proteaceae.)

*Hibiscus tiliaceus* (*Paritium tiliaceum*.) Mahoe, Tree Hibiscus. A salt-resistant ornamental tree that produces large, leathery, rounded-cordate leaves and showy, yellow, hibiscus-like flowers. (Malvaceae.)

*Helietta parvifolia*. Barretta. A small native tree belonging to the citrus family. It produces small, dark green trifoliate leaves, peculiar shaped creamy white flowers



Figure 21. Australian Silk Oak (*Grevillea robusta*). A well adapted evergreen tree having very attractive, feathery foliage.

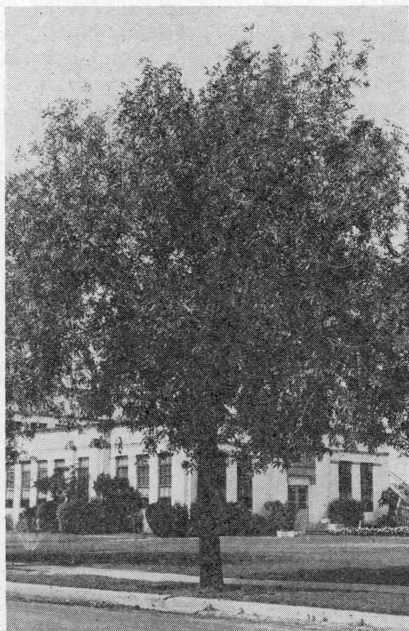


Figure 20. Rio Grande Ash (*Fraxinus Berlandierana*). A popular native tree used for avenue planting. Not as desirable as some of the evergreen shade trees.

followed by small orange colored, aromatic fruits. The flowers are similar in appearance to those of *Amyris madrensis*. (Rutaceae.)

*Ilex sp.* Native Holly. This native holly is an ornamental evergreen plant found growing in the old lake bed southwest of Mission. It has light-gray bark and dark green coriaceous leaves. In the fall it produces a profusion of small red berries. (Aquifoliaceae.)

*Jacaranda acutifolia* (*ovalifolia*). Jacaranda. A flowering tree which produces fern-like, evergreen foliage in this region. In the summer, this tree produces a profusion of powder blue, tubular flowers which are followed by long brown capsules. The



foliage is easily damaged by frost, but the tree leafs out again quite soon after being frozen. (Bignoniaceae.)

*Juniperus chinensis* var. *sylvestris*. Chinese Juniper, Sylvester Juniper. Similar to Horizontal Italian Cypress in general appearance, but trees are smaller and foliage is lighter in color. (Pinaceae.)

*Juniperus excelsa stricta*. Spiny Greek Juniper. A rather small, conical type having prickly, dark green foliage.

*Juniperus lucayana*. Southern Red Cedar, Gulf Coast Cedar. This low growing, evergreen tree produces needle-like foliage. It is recommended for use along the Gulf Coast because of its resistance to salt injury, and to high winds.

*Juniperus Sabina*. Savin Juniper. A very dwarf spreading type having bright green foliage.

*Juniperus virginiana*. Red Cedar. A symmetrical, tall growing cedar having very dark green foliage and horizontal branches (Figure 22).

*Juniperus virginia glauca*. Silver Juniper. This tall growing conifer has attractive blue-green foliage that has a silvery appearance at certain seasons. Very popular in the Valley.

Several species of junipers are being successfully grown in the Lower Rio Grande Valley. They appear to be well adapted to conditions in this region.

*Kigelia pinnata*. Sausage Tree. An evergreen, rapid growing tree that produces dark green, prickly, pinnate leaves. It is of value as an ornamental because of its showy, sausage-like seed capsules which are from twelve to twenty inches long, and are borne on the ends of long, cord-like stems. Plants are very tender to cold. (Bignoniaceae.)

*Koelreuteria formosana*. Bougainvillea Tree. A semi-evergreen tree which produces bright green, pinnate leaves, similar in appearance to the Umbrella Chinaberry tree foliage. The inconspicuous, small yellow flowers are borne over the top of the tree and are followed by



**Figure 22. Red Cedar (*Juniperus virginiana*). A desirable conifer for planting in South Texas.**

numerous, showy, rose-colored, papery capsules. This tree is well adapted and a rapid grower. (Sapindaceae.)

*Leucaena pulverulenta*. Tepehuaje. A rapid growing, thornless, native

evergreen tree which resembles a tall fern (Figure 23). It produces typical acacia flowers followed by flat, brown seed pods. It usually blooms after rains, as do its close relatives, the acacias. It reseeds so rapidly that it becomes a plant pest. Another drawback to the use of this tree is its susceptibility to attack by huisache girdlers. There are three related species in the Valley: *L. glauca* (White Popenac), *L. Greggii* (Greggs Popenac), and *L. retusa* (Lead Tree). If one is planning on using a Tepehuaje tree in his plantings, it is best to use the largest growing type which produces least seeds. (Leguminosae.)

*Ligustrum japonicum*. Japanese Privet, Tree Ligustrum. An evergreen tree ligustrum which produces glossy, dark green, ovate leaves, panicles of fragrant white flowers, and succulent black fruits. (Oleaceae.)

*Litchi chinensis*. Litchiee. An evergreen, round-topped tree which produces glossy bright green lanceolate leaflets which are reddish

when young, inconspicuous flowers, and very showy, bright red, edible fruits. Well adapted to Valley soils but tender to cold. (Sapindaceae.)

*Macadamia ternifolia*. Queensland Nut, Macadamia Nut. This tree produces shining, dark green, prickly, oblong leaves and round, edible nuts. It appears to be a slow growing tree. (Proteaceae.)

*Magnolia grandiflora*. Southern Magnolia. This large, glossy, leafed evergreen flowering tree grows very slowly unless given generous supplies of acid forming fertilizers, iron and water. (Magnoliaceae.)

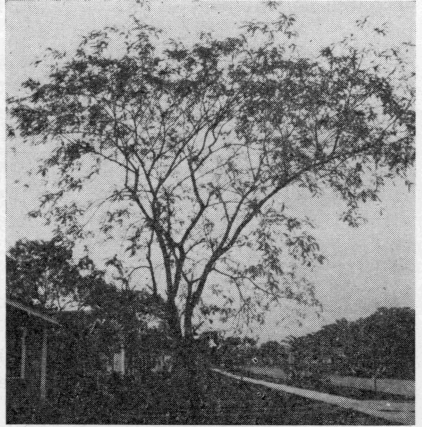
*Melaleuca armillaris*. Drooping Melaleuca. Very dark green foliage; weeping habit of growth; numerous creamy white flowers. (Myrtaceae.)

*Melaleuca elliptica*. Tree Bottlebrush. A pyramidal, upright tree having bright green foliage and small, white bottlebrush flowers.

*Melaleuca Leucadendra*. Cajeput Tree, Punk Tree. A slender, upright tree having light green, narrowly lanceolate leaves. Corky bark gives the tree its name.

Several species of *Melaleuca* are being grown at the Experiment Station. The leaves are usually stiff, linear and small; the flower "brushes" are small and white; the capsules cling to the branches, and do not become mature until the second year.

*Melia Azedarach* var. *umbraculiformis*. Umbrella Chinaberry Tree. A round headed deciduous tree that produces dark green pinnate foliage and clusters of lilac flowers followed by yellow berries. Extensively used because



**Figure 23. Tepehuaje (*Leucaena pulverulenta*). A rapid growing native tree having mimosa-like foliage. It is most useful where quick shade is desired.**

of its rapid growth and attractive appearance. Being deciduous, it makes considerable litter during the fall and winter seasons and the trees break easily in the wind. (Meliaceae.)

*Mimosa fragrans*. Pink Mimosa. This small tree is native to the Southern and central part of the state. It is partial to limestone soils. (Leguminosae.)

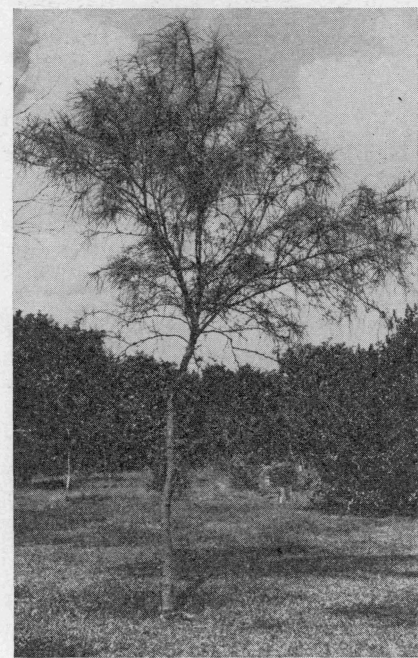
*Mimosa Lindheimeri*. Lindheimer's Mimosa. This small tree is native to the Lower Rio Grande Valley along the resacas in Cameron County.

There are two species of pink flowered mimosas native to Texas, both of which are valued for their fern-like foliage and fragrant, pink "powder puff" flowers which appear in the spring.

*Morus alba* var. *pendula*. Weeping Mulberry. Small round-headed tree with drooping branches. Very ornamental, except during the winter season. (Moraceae.)

*Morus nigra*. Black Mulberry. A very large spreading tree having very dark green ovate leaves, and large black fruit. The best variety for this region.

*Morus rubra*. Red Mulberry. A medium large tree with rough ovate leaves and red fruits produced in such an abundance as to become a nuisance.



**Figure 24.** *Retama* (*Parkinsonia aculeata*). A most attractive flowering tree having finely cut, plummy foliage.

Mulberry trees are grown in the Lower Rio Grande Valley for shade and for ornamental purposes. When planted in a poultry yard, the tender shoots, young leaves and berries supply succulent green food, while the spreading top furnishes shade during the hot summer months. All of the types mentioned are deciduous.

*Nicotiana glauca*. Sacred Mustard Tree, Tree Tobacco. A native, evergreen tree which produces large, bluish-green ovate leaves and clusters of small yellow tubular flowers followed by cup-shaped seed capsules. The Biblical Mustard Tree. (Solanaceae.)

*Olea europea*. Olive. A willowy, evergreen tree that produces narrow-oblong gray-green foliage. This is the olive of commerce, but it has no commercial value in this region, and makes a poor ornamental. (Oleaceae.)

*Osmanthus americanus*. American Olive. A hardy evergreen tree which produces glossy, dark green oblong leaves about three inches

long, and in late fall, fragrant white flowers. (Oleaceae.)

*Parkinsonia aculeata*. Retama, Jerusalem Thorn. A large growing native evergreen tree that has dark green bark, bright green, feathery foliage, and a profusion of yellow flowers having a touch of red at the base of the petals (Figure 24). If properly pruned, it makes a graceful tree. (Leguminosae.)

*Peltophorum*. This U. S. D. A. introduction has proven well adapted to conditions in this region. It is a rapid growing, evergreen tree closely related to the poincianas, producing bright green, pinnate foliage, and a profusion of golden yellow flowers (1½" in diameter) in many flowered racemes, often uniting to form large panicles. (Leguminosae.)

*Persea americana*. Avocado. Since it has been found that the West Indian type of avocado is adapted to soil conditions in this region, and the Mexican types are more cold resistant, an effort is being made to establish plantings of Cuban or West Indian seedlings and graft the hardier, more desirable types onto them (Figure 25). Linda is one of the most ornamental varieties of avocados, but varieties such as Lula, Gottfried and Fuerte are more desirable commercial sorts. (Lauraceae.)

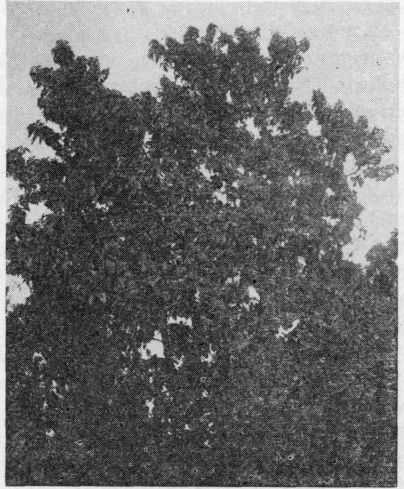


Figure 25. Avocado (*Persea americana*). This fruiting tree attains a height of thirty feet and has considerable ornamental value.

*Pinus canariensis*. Canary Island Pine. This tree produces long, slender branches and light green to blue-green foliage; hard wood; light-gray bark; yellowish brown cones two to three inches long. (Pinaceae.)

*Pinus echinata*. Shortleaf Pine. A tall growing tree of upright habit of growth and having yellow green foliage. This tree is sometimes called Yellow Pine or Spruce Pine. Used to a limited extent in the Valley because of its oddity.

*Pinus halepensis*. Aleppo Pine. A tall tree having short limbs with yellowish to brown branches; gray bark; light green, sparse foliage, the tufts of leaves being borne on the tips of the twigs; cones two to three inches long.

Several species of pines are being grown in this region, none of which are native. They appear to be well adapted and can be utilized in the landscaping scheme.

*Pistachia vera*. Pistach. A deciduous, slow growing tree that produces pinnate leaves, medium green in color; the young growth being tipped with red. This tree produces inconspicuous flowers, and small nuts. The pistach appears to be poorly adapted to our conditions. (Anacardiaceae.)



*Pithecolobium flexicaule*. Texas Ebony. A native, evergreen, leguminous tree which produces very dark green bi-pinnate leaves and heads of cream colored acacia-like flowers which are followed by large, thick, dark brown seed pods (Figure 26). (Leguminosae.)

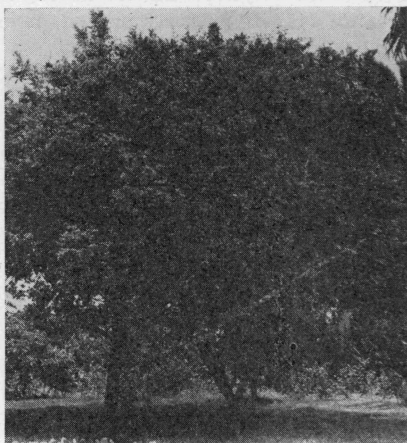
*Platanus occidentalis*. Sycamore. A deciduous tree, native to other parts of Texas, that produces palmately lobed, dull green leaves and heads of flowers containing both pistillate and staminate florets, which are followed by small, brown nutlets. This tree is not recommended because of its habit of shedding its leaves in the fall, and because it has not proven entirely adapted to conditions in this region. (Platanaceae.)

*Podocarpus macrophylla (longifolia)*. Japanese Yew, Podocarpus. A slender, pyramidal, evergreen tree which produces dark green, linear-lanceolate leaves in a dense foliage effect. This plant is often used as a tub or porch plant when small, but if given space, it will become a tall tree. (Taxaceae.)

*Populus lasiocarpa*. Chinese Cottonwood. This rapid growing, deciduous tree produces ovate leaves, inconspicuous greenish dioecious flowers and green fruits containing a cottony material surrounding the seeds. Not recommended because of the unsightly bare branches and litter of fallen leaves during the fall and winter months. (Salicaceae.)



**Figure 27. Mesquite** (*Prosopis chilensis*). A graceful native tree having acacia like foliage similar to California Pepper in general appearance.



**Figure 26. Texas Ebony** (*Pithecolobium flexicaule*). A native evergreen tree having dense dark green foliage and producing a profusion of cream colored acacia-like flowers after each rain.

*Prosopis chilensis*. Mesquite. This gnarled, native tree is useful as an ornamental. It is easily broken by high winds and is somewhat susceptible to insect attack and disease. It produces dark green, pinnate foliage. Similar to California Pepper in general appearance (Figure 27). (Leguminosae.)

*Prunus (Laurocerasus) caroliniana*. Cherry Laurel. An evergreen tree having glossy, dense, oblong foliage. This tree produces racemes of small white flowers in spring.



and small, oblong, black fruits late in the fall. Cherry Laurel is excellent for shearing and is used as a hedge plant. (Rosaceae.)

*Prunus cerasifera* var. *Pissardi*. Purple Leaf Plum. A small deciduous tree having showy, purplish-red foliage. This plant appears to be well adapted to conditions in this region.

*Ptelea Baldwinii*. Wafer-Ash. This native wafer-ash is found on the gravel-topped hills along the Rio Grande. The branches are smooth and upright, reaching a height of eight to ten feet. The narrow, aromatic, trifoliate leaves, also point upward. Greenish flower clusters are followed by typical wafer-like winged fruits. The wood is white and tough. (Rutaceae.)

*Pterocarya stenoptera*. Wing Nut. An introduction from the U. S. D. A. A rapid growing, deciduous tree that belongs to the Walnut family. It appears to be well adapted to conditions in the Lower Rio Grande Valley. In the spring it produces pinnate leaves and inconspicuous catkins of flowers, followed by long, drooping racemes of small winged nuts. Very attractive in appearance. (Juglandaceae.)

*Quercus myrsinaefolia*. Japanese Oak. A U. S. D. A. introduction that appears to be well adapted to this region. An evergreen tree having bright green, glossy, lanceolate leaves. (Fagaceae.)

*Quercus virginiana*. Live Oak. A sturdy, round headed, symmetrical, evergreen tree having small obovate, glossy green leaves (Figure 28).

There are no native oak trees in the Valley, but many types are being tried in an effort to find well adapted species of this enduring type of tree.

The Live Oak and Japanese Oak appear to be well adapted to this region.

Included in the station collection are specimens of *Q. virginiana* (Live Oak, Figure 28), *Q. myrsinaefolia* (Japanese Oak), *Q. lyrata* (Overcup Oak), *Q. minor* (Pin Oak), *Q. stellata* (Post Oak), *Q. phellos* (Willow Leaf Oak), and *Q. agrifolia* (Holly-Leaf Oak).

*Rhus viminalis*. Fragrant Sumac. An evergreen, leafy plant up to thirty feet high, that produces bright green, narrow leaves, numerous greenish flower clusters followed by sweetish fleshy fruits. This plant makes slow growth in the Lower Rio Grande Valley and is very susceptible to cotton root rot disease. (Anacardiaceae.)

*Salix babylonica*. Weeping Willow. This is a rather tall growing, slender willow with drooping branches and foliage. Makes rather slow growth and is subject to chlorosis. (Salicaceae.)

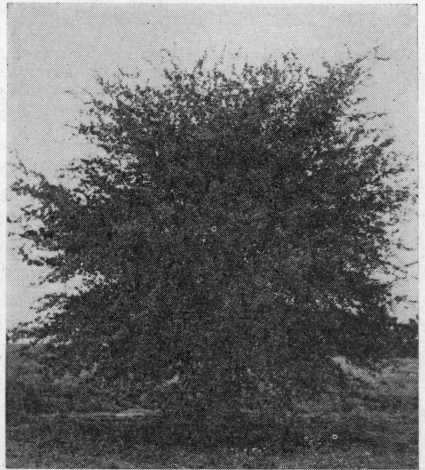


Figure 28. Live Oak (*Quercus virginiana*). A sturdy, evergreen shade tree that grows more rapidly than is often supposed.

*Salix discolor*. Pussy Willow. A small, deciduous tree which is grown for its branches of showy, soft, gray flower heads. The Pussy Willow is not adapted to conditions in this region.

*Salix interior*. Brittle Willow. A native tree distinguished from the commonly found *S. nigra*, or Black Willow, by its lighter colored branches and very brittle wood. This small willow is found in the vicinity of Brownsville and along the river.



**Figure 29. Black Willow (*Salix nigra*).** A rapid growing, native tree that is less desirable than some of the evergreen forms.

*Salix nigra*. Black Willow. A very large growing tree where abundant water is available. The commonly found willow to be seen along canal banks in this region (Figure 29).

*Samanea Saman*. Monkeypod Tree, Rain Tree. An evergreen tree which has light green pinnate foliage. The pink flowers are very similar to those of *Albizia Julibrissin*, being large, pink, "powder-puffs." The seed pods contain bright red beans. Rapid growing but very tender. (Leguminosae.)

*Sapium sebiferum*. Chinese Tallow-Tree. A tall growing, deciduous tree which produces light green, ovate leaves that turn red in the autumn and remain on the tree during the late fall months. This tree produces inconspicuous flowers, which are followed by oblong white seeds whose waxy

covering is used for making candles, soap and cloth dressing. The milky juice of the tree is said to be poisonous. (Euphorbiaceae.)

*Sapindus Drummondii*. Western Soapberry, Wild China-Berry Tree. This deciduous tree is native to many parts of Texas but is nowhere abundant. The trees have scaly, reddish brown bark; pinnate foliage somewhat like the Umbrella China-Berry; panicles of white flowers similar to those of the ligustrum, giving the name "Wild Ligustrum" to this tree. The yellow, grape-like clusters of berries turn almost black at maturity. These berries contain saponin, which can be used as a substitute for soap, and the pulp is valuable for use in the manufacture of floor varnish. (Sapindaceae.)

*Schinus Molle*. California Pepper Tree. A tall graceful tree with finely cut foliage, similar to our native Mesquite, that produces small white flowers in panicles, followed by small, rose-colored fruits. Not adapted to Valley conditions as determined by many trials. (Anacardiaceae.)

*Schinus terebinthifolius*. Brazilian Pepper Tree. A spreading evergreen tree having reddish brown bark, reddish stems, and dark green leaves having conspicuous veins. The panicles of small white flowers bloom on

the tips of the branches and are followed in the fall by clusters of small red berries.

Two species of pepper trees have been grown in the Lower Rio Grande Valley, but the Brazilian Pepper Tree appears to be the best adapted.

*Sophora secundiflora*. Mescal Bean, Coral Bean. A native evergreen tree which produces glossily green pinnate leaves, and in spring large clusters of showy purple flowers, followed by seed pods containing bright red seed having medicinal properties. Not recommended. (Leguminosae.)

*Tabebuia argentea*. Bignonia Tree. A rather large tree which produces oblong to lanceolate leaves and in spring a profusion of large, yellow, tubular flowers. A rose flowered species, *T. pallida* (U. S. D. A. S. P. I #131875), has proven to be fairly well adapted. (Bignoniaceae.)

*Tamarindus indica*. Tamarind. A large, round-topped tree which produces dark green, pinnate foliage. The pods of fruit have a hard, brittle shell, and contain extremely acid pulp that is used in making drinks and meat sauce. The plants are very tender to cold. (Leguminosae.)

*Tamarix articulata*. Athel. A very rapid growing, many branched, dense tree that produces blue-green feathery foliage and panicles of pink flowers. Useful in a sheared hedge or windbreak. (Tamarixaceae.)

*Tamarix gallica*. French Salt-Cedar. A small deciduous tree or shrub with plummy, needle-like, green foliage. In the spring it produces numerous pinkish flower racemes. This plant is well adapted, and is recommended for use along the Gulf Coast.

*Tamarix odessana*. Odessa Tamarisk, Plumy Tamarisk. A small tamarix which produces dark green exceptionally plummy foliage and racemes of pink flowers. One of the most attractive of the Tamarisks.

*Taxodium mucronatum*. Mexican Cypress. This is the native cypress of the Rio Grande Delta, but it has not been extensively used in landscape beautification. (Pinaceae.)

*Terminalia Catappa*. India Almond, Tropical Almond, Myrobolan Almond. A tall growing, pyramidal deciduous tree whose branches grow at right angles to the trunk. It produces large, ovate to obovate, leathery leaves which turn bright red during the autumn season. Plants grow rapidly but are tender to cold. (Combretiaceae.)

*Thespesia populnea*. Portia Tree, Yellow Flowered Tulip Tree. An evergreen tropical tree that produces light green ovate leaves and large, yellow hibiscus-like flowers followed by small capsules. (Malvaceae.)

*Thevetia*. Tiger Apple. A small, evergreen tree having a round, symmetrical top, and producing shining, bright green, narrow leaves. One variety, *T. nereifolia*, produces orange colored, tubular flowers; while the other, *T. nereifolia flava*, produces yellow flowers. Both bear an abundance of green "apples" which are quite ornamental but not edible. The plants somewhat resemble Oleander to which they are related. (Apocynaceae.)

*Thuja orientalis* var. *aurea nana*. Berckman's Golden Arbor-Vitae. One of the best dwarf pyramidal types having the golden yellow foliage. (Pinaceae.)

*Thuja orientalis* var. *bakeri*. Baker's Arbor-Vitae. A compact, well shaped pyramidal type having bright green foliage.

*Thuja orientalis* var. *beverlyensis*. Beverley's Golden Arbor-Vitae. A tall cone-shaped plant having a golden yellow cast to the new growth.

*Thuja orientalis* var. *bonita*. Bonita Arbor-Vitae. A good pyramidal type having bright, yellow-green foliage.

*Thuja orientalis* var. *cupressifolia*. Ramsey's Hybrid Arbor-Vitae. A compact pyramidal type, having bright green foliage.

*Thuja orientalis* var. *glauca*. Texas Blue Arbor-Vitae. This is a blue-green type of pyramidal form that may be used along with Rosedale or Bonita.

*Thuja orientalis* var. *rosedale*. Rosedale Arbor-Vitae. A good globe type of medium size having feathery blue-green foliage.

*Ulmus alata*. Winged Elm. A round-topped, native, deciduous tree having branches usually with two opposite, very broad wings. The leaves are ovate, double serrated, smooth above, pubescent beneath. The seeds are elliptic-ovate with narrow wings and two incurved horns at the apex. (Ulmaceae.)

*Ulmus crassifolia*. Cedar Elm. This native, deciduous tree has spreading limbs and slender branches. The dark green ovate leaves are serrated and rough above, pubescent underneath. The flowers are inconspicuous; fruits are oval-elliptic, notched,  $\frac{1}{2}$ -inch long.

*Zizyphus Jujuba*. Jujube. A deciduous, thorny tree which produces glossy, dark green, ovate leaves, inconspicuous flowers, and maroon colored fruits which can be utilized in making sweet pickle preserves. (Rhamnaceae.)

TABLE 2. TREES

Name	Mature Size		Cold Hardiness	Adaptability	Desirability	Notes
	Height (feet)	Spread (feet)				
<i>Acacia Baileyana</i> (Robin's Egg Blue Acacia)-----	6- 8	4- 6	8	1	0	Special soil requirements
<i>Acacia cultriformis</i> (Crowded Leaf Acacia)-----	6- 8	4- 6	9	9	9	Valuable ornamental foliage
<i>Acacia decurrens</i> (Green Wattle)-----	10-15	4- 6	9	4	1	Unadapted
<i>Acacia delanthus</i> (African Acacia)-----	10-15	4- 6	9	4	1	Unadapted
<i>Acacia Farnesiana</i> (Huisache)-----	18-30	15-20	9	9	9	Valuable native flowering tree
<i>Acacia longifolia</i> var. <i>floribunda</i> (Flowering Acacia)-----	10-15	4- 6	9	7	4	Unadapted
<i>Acacia Greggii</i> (Long fld. Catsclaw)-----	8-10	4- 5	9	9	0	Too thorny; undesirable
<i>Acacia Roemeriana</i> (Round fld. Catsclaw)-----	6- 8	4- 5	9	9	5	Useful in drouthy locations
<i>Acacia Wrightii</i> (Tree Catsclaw)-----	25-35	10-15	9	9	9	Valuable native tree
<i>Acer argutum</i> (Silver Maple)-----	20-25	10-15	9	0	0	Unadapted
<i>Acer saccharinum</i> (Soft Maple)-----	80-90	15-25	9	0	0	Unadapted
<i>Albizia Julibrissin</i> (Powder Puff Tree)-----	4- 8	2- 3	9	8	4	Slow growing; deciduous
<i>Albizia Lebbek</i> (Woman's Tongue Tree)-----	20-35	10-15	2	9	9	Cassia-like tree
<i>Aleurites Fordii</i> (Tung Oil Tree)-----	10-25	8-10	6	0	0	Unadapted
<i>Amyris madrensis</i> (Torchwood) <sup>1</sup> -----	6-15	2- 5	9	9	9	Desirable native tree
<i>Araucaria excelsa</i> (Norfolk Island Pine)-----	20-25	4- 8	6	8	9	Very showy specimen tree
<i>Araucaria araucana</i> (Monkeypuzzle Tree)-----	30-50	15-18	9	9	9	Interesting cone-bearing tree

\*Not grown on the Experiment Station.

Cold Hardiness: 9—Hardy; 5—fairly hardy; 1—tender.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.



TABLE 2. TREES—Continued

Name	Mature Size		Cold Hardiness	Adaptability	Desirability	Notes
	Height (feet)	Spread (feet)				
<i>Arbutus Unedo</i> (Strawberry Tree)-----	12-15	8-10	9	7	3	Very slow growing
<i>Averrhoa Bilimbi</i> (Sweet Carambola)-----	8-12	4-6	2	6	5	Interesting, but lacks vigor
<i>Averrhoa Carambola</i> (Pickle Tree)-----	8-12	4-6	2	6	5	Interesting, but lacks vigor
<i>Bauhinia variegata</i> var. <i>candida</i> (White flowered Orchid Tree)-----	15-30	10-15	5	9	9	Very showy white flowers
<i>Bauhinia Galpini</i> (Red flowered Orchid Tree)-----	8-10	3-6	3	9	1	Lacks vigor
<i>Bauhinia purpurea</i> (Purple flowered Orchid Tree)-----	15-30	5-10	5	9	9	Not a profuse bloomer
<i>Bauhinia tomentosa</i> (Yellow flowered Orchid Tree)-----	8-10	3-6	0	9	1	Lacks vigor
<i>Bauhinia triandra</i> (Pink flowered Orchid Tree)-----	15-30	10-15	5	9	9	Numerous pink flowers
<i>Bixa Orellana</i> (Annatto)-----	10-15	8	5	2	0	Short lived
<i>Bumelia lanuginosa</i> * (Chittamwood)-----	15	10	9	9	9	Attractive native tree
<i>Bumelia Schottii</i> (Como)-----	15-20	15-18	9	9	9	Very desirable native tree
<i>Calliandra hemaetocephala</i> (Calliandra)-----	10-20	8-10	7	9	6	Showy flowering tree
<i>Callistemon lanceolatus</i> (Weeping Bottlebrush)-----	6-10	2-3	9	9	9	Useful tall growing type
<i>Callistemon rigidus</i> (Rigid Bottlebrush)-----	6-10	3-4	9	9	9	Very desirable, dense type
<i>Caragana arborescens</i> (Siberian Pea-Tree)-----	15-20	8-10	9	0	0	Unadapted
<i>Carica Papaya</i> (Papaya)-----	10-25	3-6	3	9	9	Ornamental tropical fruit tree
<i>Carya Pecan</i> (Pecan)-----	20-40	15-20	9	6	9	Excellent deciduous shade tree
<i>Cassia Fistula</i> (Golden Shower)-----	10-20	6-8	4	6	4	Well adapted, but tender
<i>Cassia grandis</i> (Grand Shower)-----	8-15	6-8	4	6	4	Well adapted, but tender
<i>Cassia nodosa</i> (Pink Shower)-----	6-8	5-6	2	4	4	Well adapted; very tender

<i>Cassia laevigata</i> (Smooth Senna).....	10-20	3- 4	9	9	7	Hardy flowering plant
<i>Cassia splendida</i> (Showy Senna).....	6- 8	5- 6	7	9	9	Very attractive native plant
<i>Cassia tomentosa</i> (Wooly Senna).....	10-15	5- 6	9	9	9	Very attractive native plant
<i>Casuarina Cunninghamiana</i> (Cunningham Beefwood).....	25-50	10-15	7	9	9	Pyramidal, pine-like tree
<i>Cassuarina equisetifolia</i> (Horsetail Casuarina).....	25-50	10-15	5	4	3	Useful on saline soils
<i>Casuarina glauca</i> (Australian Pine).....	25-50	10-15	6	4	3	Less attractive than others
<i>Casuarina lepidophloia</i> (Hardy Australian Pine).....	25-50	10-15	7	9	9	Most desirable type
<i>Casuarina montana</i> (Australian Pine).....	25-50	10-15	6	4	3	Unattractive
<i>Catalpa bignonioides</i> (Catalpa).....	18-25	15	9	5	5	Difficult to grow
<i>Catalpa Bungei</i> (Manchurian Catalpa).....	18-20	15	9	1	2	Unadapted
<i>Catalpa speciosa</i> (Western Catalpa).....	18-25	15	9	2	2	Unadapted
<i>Cedrus Deodora</i> (Deodor Cedar).....	15-30	10-15	9	9	9	Very desirable conifer
<i>Ceiba pentandra</i> (Kapok).....	18-20	8-10	6	4	3	Interesting tropical plant
<i>Celtis laevigata</i> (Southern Hackberry).....	25-35	15-20	9	9	5	Strictly ordinary
<i>Ceratonia Siliqua</i> (Carob).....	15-20	12-15	9	9	7	Thrives in heavy soils
<i>Cercidium floridum</i> (Palo Verde).....	15-20	10	9	9	8	Graceful, flowering native
<i>Cercidium texanum</i> (Texas Palo Verde).....	10-15	10	9	9	2	Dwarf; very thorny
<i>Cercis canadensis</i> (Redbud).....	8-10	2- 5	9	9	6	Desirable flowering plant
<i>Chilopsis linearis</i> (Desert Willow).....	15-25	8-15	9	9	7	Flowering, willow-like native
<i>Chrysophyllum oliviforme</i> (Star Apple).....	15-20	8-10	4	5	5	Attractive foliage
<i>Cinnamomum Camphora</i> (Camphor Tree).....	15-20	12-15	9	9	9	Attractive light green foliage

\*Not grown on the Experiment Station.

Cold Hardiness: 9—Hardy; 5—fairly hardy; 1—tender.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.

TABLE 2. TREES—Continued

Name	Mature Size		Cold Hardiness	Adaptability	Desirability	Notes
	Height (feet)	Spread (feet)				
<i>Citrus mitis</i> (Calamondin).....	20-30	8-10	9	9	9	Ornamental fruit and foliage
<i>Cochlospermum vitifolium</i> (Buttercup Acacia).....	10-15	8-10	7	3	3	Occasionally successful
<i>Condalia obovata</i> (Brasil).....	15-20	12-15	9	9	9	Dense, bright green foliage
<i>Cordia Boisseri</i> (Anacahuita).....	10-15	8-10	9	9	9	Continuous profusion showy flowers
<i>Cordia Sebestena</i> (Geiger Tree).....	8-15	6-10	4	6	7	Showy flowering tree
<i>Couroupita guianensis</i> (Cannon Ball Tree).....	20-30	15-18	1	0	0	Unadapted
<i>Cornus florida</i> (White flowered Dogwood).....	10-15	5-6	9	1	1	Unadapted
<i>Cornus florida</i> var. <i>rubra</i> * (Pink flowered Dogwood).....	10-15	5-6	9	1	1	Unadapted
<i>Crescentia alata</i> (Small Fruited Calabash).....	15-20	8-10	1	6	2	Too tender for general use
<i>Crescentia Cujete</i> (Large Fruited Calabash).....	15-20	8-10	1	5	2	Too tender for general use
<i>Cupressus arizonica</i> (Arizona Cypress).....	15-20	15-20	9	9	6	Usually rather short lived
<i>Cupressus lusitanica</i> (Portuguese Cypress).....	12-15	10-12	9	9	7	Well adapted; compact
<i>Cupressus sempervirens</i> var. <i>horizontalis</i> * (Horizontal Italian Cypress).....	15-20	10-12	9	7	6	Limited usefulness
<i>Cupressus sempervirens</i> var. <i>stricta</i> (Royal Italian Cypress).....	20-30	2-6	9	7	6	Limited usefulness
<i>Cupressus tortulosa</i> (Bhutan Cypress).....	15-20	15	9	9	6	Limited usefulness
<i>Daubentonia Tripetii</i> (Red flowered Sesbania).....	20	2	9	9	7	Showy, deciduous flowering tree
<i>Delonix regia</i> (Royal Poinciana).....	15-35	15-25	2	9	8	Showy flowering tropical
<i>Diospyros Kaki</i> (Japanese Persimmon).....	15-20	10	9	9	5	Valuable for showy fruits
<i>Diospyros texanum</i> (Texas Persimmon; Chapote).....	8-10	4-5	9	9	9	Small native fruit tree
<i>Diospyros virginiana</i> (Wild Persimmon).....	15-20	8	9	9	4	Rapid growing; deciduous

<i>Dovyalis caffra</i> (Kei Apple)-----	15-20	8-12	7	9	7	Glossy-green, thorny tree
<i>Ehretia anacua</i> (Anacua)-----	15-20	8-10	9	9	9	Attractive, flowering native
<i>Eriobotrya japonica</i> (Loquat)-----	8-18	8-10	9	9	8	Ornamental leaves and fruit
<i>Erythrina Cristi-galli</i> (Brazilian Coral Tree)-----	15-18	8-10	9	9	8	Very slow growing
<i>Erythrina herbacea</i> var. <i>arborea</i> (Native Coral Tree)-----	8-10	4-6	8	9	8	Odd-flowering, native
<i>Esenbeckia kunyonii</i> (Esenbeckia)-----	10-15	5	9	9	8	Rare, citrus-like native
<i>Eucalyptus algeriensis</i> (Algerian Eucalyptus)-----	35-50	10-15	9	9	7	Tall; rapid growing
<i>Eucalyptus crucis</i> (Silver Eucalyptus)-----	35-50	10-15	9	0	2	Unadapted
<i>Eucalyptus ficifolia</i> (Scarlet Eucalyptus)-----	10-20	8-10	7	3	5	Difficult to grow
<i>Eucalyptus globulus</i> (Blue Gum)-----	50-60	15-20	5	5	5	Large; tender
<i>Eucalyptus rostrata</i> (Creek; Red Gum)-----	35-50	10-15	7	5	6	Limited usefulness
<i>Eucalyptus tereticornis</i> * (Gray Gum)-----	40-50	10-15	7	6	6	Few lower limbs
<i>Eucalyptus viminalis</i> (Manna Gum)-----	35-50	10-15	8	7	7	Useful roadside tree
<i>Eugenia Jambos</i> (Malabar Plum)-----	12-18	8-10	4	9	5	Attractive foliage; tender
<i>Ficus benghalensis</i> (Banyan Tree)-----	20-30	20-30	3	9	9	Tropical foliage plant
<i>Flacourtia indica</i> (Governors Plum)-----	15-20	10-15	5	9	8	Attractive fruiting tree
<i>Fortunella crassifolia</i> (Meiwa Kumquat)-----	4-5	4	9	9	8	Ornamental fruit and foliage
<i>Fortunella japonica</i> (Marumi Kumquat)-----	5-6	4	9	9	8	Ornamental fruit and foliage
<i>Fortunella margarita</i> (Nagami Kumquat)-----	6-10	4	9	9	8	Ornamental fruit and foliage
<i>Fraxinus Berlandierana</i> (Mexican; Rio Grande Ash)-----	20-25	18-20	9	8	5	Strictly ordinary
<i>Fraxinus velutina</i> (Velvet; Arizona Ash)-----	20-25	18-20	9	9	5	Deciduous shade tree

\*Not grown on the Experiment Station.

Cold Hardiness: 9—Hardy; 5—fairly hardy; 1—tender.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.

TABLE 2. TREES—Continued

Name	Mature Size		Cold Hardiness	Adaptability	Desirability	Notes
	Height (feet)	Spread (feet)				
<i>Ginkgo biloba</i> (Maidenhair Tree).....	40-50	20-30	9	2	0	Unadapted
<i>Gleditsia triacanthos</i> (Honey Locust).....	20-30	8-10	9	9	0	Too thorny to be desirable
<i>Grevillea robusta</i> (Silk Oak).....	20-30	8-10	9	9	9	Very showy tropical tree
<i>Heliconia parvifolia</i> (Barretta).....	5-6	2-3	9	9	7	Dwarf citrus-like native
<i>Hibiscus tiliaceus</i> (Mahoe).....	20-30	10-12	6	7	7	Showy flowering tropical tree
<i>Ilex ambigua</i> (Carolina Holly).....	3-5	2	9	0	0	Unadapted; oblong leaves
<i>Ilex aquifolium</i> (English Holly).....	10-20	3	9	0	0	Unadapted; spiny toothed leaves
<i>Ilex cassine</i> * (Dahoon Holly).....	10-20	4-6	9	3	0	Unadapted; leathery, oblong leaves
<i>Ilex cornuta</i> (Chinese Holly).....	10	3	9	3	0	Unadapted; large spiny leaves
<i>Ilex opaca</i> (American Holly).....	10-20	2-3	9	3	0	Unadapted; spiny, leathery leaves
<i>Ilex sp.</i> * (Native Holly).....	8-20	4-6	9	9	7	Native holly; coriaceous leaves
<i>Jacaranda acutifolia</i> (Jacaranda).....	20-35	15-20	6	8	8	Ornamental foliage and flowers
<i>Juniperus chinensis</i> var. <i>sylvestris</i> * (Chinese Juniper).....	18-25	6-8	9	9	7	Limited usefulness
<i>Juniperus excelsa stricta</i> (Spiny Greek Juniper).....	6-8	2	9	9	9	Make interesting specimen plants
<i>Juniperus lucayana</i> * (Southern Red Juniper).....	8-10	8	9	9	7	Limited usefulness
<i>Juniperus Sabina</i> * (Savin Juniper).....	6	6	9	9	7	Limited usefulness
<i>Juniperus virginiana</i> * (Red Cedar).....	25	6-10	9	9	7	Desirable specimen plant
<i>Juniperus virginia glauca</i> * (Silver Juniper).....	25	6-10	9	9	7	Desirable blue-green foliage
<i>Kigelia pinnata</i> (Sausage Tree).....	20-35	8-10	2	9	8	Showy cylindrical seed capsules
<i>Koelreuteria bipinnata</i> (Golden Rain Tree).....	25-40	18-20		4	2	Not especially desirable



<i>Koelreuteria formosana</i> (Bougainvillea Tree).....	18-20	8-10	9	9	7	Interesting ornamental tree
<i>Leucaena pulverulenta</i> (Tepehuaje).....	25-35	15-20	9	9	5	Fern-like foliage
<i>Ligustrum japonicum</i> (Japanese Privet).....	15-25	15	9	9	7	Glossy green; drouth resistant
<i>Liriodendron tulipifera</i> (Tulip Tree).....	20-35	8-15	9	0	0	Unadapted
<i>Litchi chinensis</i> (Litchee).....	18-30	15-20	5	9	7	Ornamental tropical fruit tree
<i>Macadamia ternifolia</i> (Queensland Nut).....	15-30	10-15	5	7	5	Odd, tropical tree
<i>Magnolia grandiflora</i> (Southern Magnolia).....	25-40	15-20	9	5	6	Occasionally successful
<i>Melaleuca armillaris*</i> (Drooping Melaleuca).....	15-25	4-6	6	9	8	Dark, dense foliage
<i>Melaleuca elliptica</i> (Tree Bottlebrush).....	20-35	3-6	9	9	8	Bright green foliage
<i>Melaleuca Leucadendra</i> (Cajeput Tree).....	25-35	3-6	4	6	2	Useful in swampy locations
<i>Melia Azedarach</i> var. <i>umbraculiformis</i> (Umbrella Chinaberry).....	18-30	15-20	9	9	2	Strictly ordinary
<i>Mimosa fragrans*</i> (Pink Mimosa).....	1-4	1-3	9	9	7	Small flowering native
<i>Mimosa Lindheimeri*</i> (Lindheimer's Mimosa).....	6	3-4	9	9	7	Small flowering native
<i>Morus alba</i> var. <i>pendula*</i> (Weeping Mulberry).....	6-8	6-8	9	7	6	Interesting specimen plant
<i>Morus nigra</i> (Black Mulberry).....	25-35	25-30	9	9	7	Fruiting shade tree
<i>Morus rubra*</i> (Red Mulberry).....	15-25	12-15	9	9	6	Abundance of fruit
<i>Nicotiana glauca</i> (Sacred Mustard).....	6-30	6-8	9	9	6	Interesting flowering native
<i>Olea europaea</i> (Olive Tree).....	10-15	4-6	9	3	3	Occasionally successful
<i>Osmanthus americanus*</i> (American Olive Tree).....	10-15	4-6	9	9	7	Ornamental flowering plant
<i>Parkinsonia aculeata</i> (Retama).....	15-25	10-15	8	9	9	Graceful flowering native
<i>Peltophorum</i> sp. (Peltophorum).....	15-35	8-10	7	9	9	Rapid growing flowering tree

\*Not grown on the Experiment Station.

Cold Hardiness: 9—Hardy; 5—fairly hardy; 1—tender.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.

TABLE 2. TREES—Continued

Name	Mature Size		Cold Hardiness	Adaptability	Desirability	Notes
	Height (feet)	Spread (feet)				
<i>Persea americana</i> (Avocado).....	16-40	10-20	3	7	8	Ornamental subtropical tree
<i>Pinus canariensis</i> (Canary Island Pine).....	50-60	10	9	5	0	Occasionally successful
<i>Pinus echinata*</i> (Shortleaf Pine).....	50-60	10	9	9	8	Occasionally successful
<i>Pinus griffithii</i> (Griffith's Pine).....	40-50	8-10	9	3	0	Occasionally successful
<i>Pinus halepensis*</i> (Aleppo Pine).....	40-50	10	9	5	7	Occasionally successful
<i>Pistachia vera</i> (Pistach Nut).....	15-25	6-8	9	3	0	Unadapted
<i>Pithecolobium flexicaule</i> (Texas Ebony).....	18-30	12-15	9	9	9	Dense, dark green, native
<i>Platanus occidentalis</i> (Sycamore Tree).....	25-40	10-15	9	7	3	Strictly ordinary
<i>Podocarpus macrophylla</i> (Podocarpus Yew).....	6-40	2-8	9	6	7	Attractive dense foliage
<i>Populus lasiocarpa</i> (Cottonwood).....	25-35	15-20	9	8	5	Strictly ordinary
<i>Populus nigra</i> var. <i>italica</i> (Lombardy Poplar).....	25-50	6-8	9	2	3	Unadapted
<i>Prosopis chilensis</i> (Mesquite).....	18-35	15-20	9	9	8	Usually short lived native
<i>Prunus caroliniana</i> (Cherry-Laurel).....	20-30	15-20	9	9	6	Limited usefulness
<i>Prunus cerasifera</i> var. <i>Pissardi</i> (Purple-Leaf Plum).....	10-20	6-10	9	8	7	Interesting specimen tree
<i>Ptelea Baldwinii</i> (Wafer-Ash).....	8-12	5	9	9	9	Attractive, citrus-like native
<i>Pterocarya stenoptera</i> (Wing Nut).....	18-25	8-10	9	9	6	Rapid growing; deciduous
<i>Quercus myrsinaefolia</i> (Japanese Oak).....	20-50	10-20	9	9	8	Glossy green; evergreen
<i>Quercus virginiana</i> (Live Oak).....	20-30	12-15	9	9	9	Glossy green; evergreen
<i>Rhus viminalis</i> (Fragrant Sumac).....	6-30	6-10	9	6	3	Subject to root disease
<i>Robinia Pseudo-Acacia*</i> (Black Locust).....	30-40	15-20	9	9	4	Rapid growing; flowering

<i>Salix babylonica</i> (Weeping Willow)-----	20-25	8-12	9	5	5	Occasionally successful
<i>Salix discolor</i> (Pussy Willow)-----	10	8	9	0	0	Unadapted
<i>Salix interior</i> * (Brittle Willow)-----	20-30	20-25	9	9	8	Native river willow
<i>Salix nigra</i> (Black Willow)-----	35-50	20-30	9	9	9	Large native willow
<i>Samanea Saman</i> (Monkeypod Tree)-----	30-40	30-40	2	9	5	Ornamental foliage; tender
<i>Sapindus Drummondii</i> (Western Soapberry)-----	15-25	6-10	9	9	6	Deciduous; strictly ordinary
<i>Sapium sebiferum</i> (Chinese Tallow Tree)-----	15-25	8-10	9	9	8	Leaves turn red in fall
<i>Schinus Molle</i> (California Pepper Tree)-----	18-25	10-15	7	3	0	Unadapted
<i>Schinus terebinthifolius</i> (Brazilian Pepper Tree)-----	15-18	10-15	7	9	9	Ornamental foliage and berries
<i>Semecarpus Anacardum</i> (Marking Nut)-----	20-25	10-15	8	0	0	Unadapted
<i>Sophora secundiflora</i> * (Mescal Bean)-----	12-18	4-6	9	9	8	Glossy foliage; flowering native
<i>Spathodea campanulata</i> (Santa Domingo Mahogany)-----	10-20	8-12	2	9	2	Showy flowers; tender
<i>Tabebuia argenta</i> (Bignonia Tree)-----	25-30	6-8	6	8	6	Tropical flowering tree
<i>Tamarindus indica</i> (Tamarind Tree)-----	25-35	20-25	3	8	5	Ornamental foliage; acid fruits
<i>Tamarix articulata</i> (Evergreen Athel)-----	25-40	10-15	8	9	9	Rapid growing; useful windbreak
<i>Tamarix gallica</i> (French Salt Cedar)-----	10-12	10	9	4	3	Strictly ordinary
<i>Tamarix odessana</i> (Plumy Tamarisk)-----	6-8	4-6	9	9	6	Attractive plumy foliage
<i>Taxodium mucronatum</i> * (Mexican Cypress)-----	20-40	10-15	9	9	3	Interesting native
<i>Terminalia catappa</i> (India Almond)-----	18-25	8-12	2	9	5	Ornamental tropical
<i>Thespesia populnea</i> (Portia Tree)-----	10-20	5-6	4	9	8	Showy flowering tropical
<i>Thevetia nereifolia</i> (Orange flowered Tiger Apple)-----	15-25	8-10	6	9	9	Ornamental foliage and flowers

\*Not grown on the Experiment Station.

Cold Hardiness: 9—Hardy; 5—fairly hardy; 1—tender.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.

TABLE 2. TREES—Continued

Name	Mature Size		Cold Hardiness	Adaptability	Desirability	Notes
	Height (feet)	Spread (feet)				
<i>Thevetia nereifolia flava</i> (Yellow flowered Tiger Apple)-----	15-25	8-10	6	9	9	Ornamental foliage and flowers
<i>Thuja orientalis</i> var. <i>aurea nana</i> (Breckman's Golden Arbor-Vitae)-----	6- 8	3	9	9	6	Limited usefulness
<i>Thuja orientalis</i> var. <i>bakeri</i> * (Baker's Arbor-Vitae)-----	10-20	3	9	9	6	Limited usefulness
<i>Thuja orientalis</i> var. <i>bonita</i> * (Bonita Arbor-Vitae)-----	5- 8	3	9	9	6	Limited usefulness
<i>Thuja orientalis</i> var. <i>beverlyensis</i> * (Beverley's Golden Arbor-Vitae)-----	10-18	6- 8	9	9	5	Limited usefulness
<i>Thuja orientalis</i> var. <i>cupressifolia</i> * (Ramsey's Hybrid Arbor-Vitae)-----	10-20	3- 5	9	9	6	Limited usefulness
<i>Thuja orientalis</i> var. <i>glauca</i> (Texas Blue Arbor-Vitae)-----	25-30	12-15	9	9	6	Limited usefulness
<i>Thuja orientalis</i> var. <i>rosedale</i> (Rosedale Arbor-Vitae)-----	8	5- 6	9	9	6	Limited usefulness
<i>Ulmus alata</i> (Winged Elm)-----	18-30	15	9	9	9	Native shade tree
<i>Ulmus crassifolia</i> * (Cedar Elm)-----	20-40	15	9	9	9	Native shade tree
<i>Ulmus pumila</i> (Asiatic; Chinese Elm)-----	20-30	15	9	0	0	Unadapted
<i>Zizyphus Jujuba</i> (Jujube)-----	10-18	6- 8	9	9	5	Ornamental fruiting tree

\*Not grown on the Experiment Station.  
 Cold Hardiness: 9—Hardy; 5—fairly hardy; 1—tender.  
 Adaptability: 9—Excellent; 5—fair; 1—poor.  
 Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.

TABLE 3. GROWTH RECORDS OF TREES

Scientific Name	Common Name	Age*	Height (feet)	Spread (feet)
<i>Acacia Farnesiana</i>	Huisache	3	14	12
<i>Acacia Greggii</i>	Long-Flowered Catsclaw	3	5	3
<i>Albizia Julibrissin</i>	Powder-Puff-Tree	6	4	4
<i>Albizia Lebbek</i>	Womans-Tongue-Tree	3†	10	12
<i>Averrhoa Bilimbi</i>	Sweet Carambola	3	3	1
<i>Bauhinia variegata</i> var. <i>candida</i>	White-Flowered Bauhinia	2	12	8
<i>Bumelia Schottii</i>	Como	3	5	2
<i>Carica Papaya</i>	Papaya	1	12	8
<i>Callistemon lanceolatus</i>	Weeping Bottlebrush	3	8½	0½
<i>Callistemon rigidus</i>	Rigid Bottlebrush	3	4½	5
<i>Casuarina lepidophloia</i>	Hardy Australian-Pine	10	24	18
<i>Celtis laevigata</i>	Southern Hackberry	3	14	12
<i>Ceratonia Siliqua</i>	Carob	4	6	3
<i>Cercis canadensis</i>	Redbud	3	8	2
<i>Chilopsis linearis</i>	Desert-Willow	3	14½	12
<i>Citrus mitis</i>	Calamondin	8	18	10
<i>Cinnamomum Camphora</i>	Camphor-Tree	3	2½	1¼
<i>Condalia obovata</i>	Brasil	3	5½	5¾
<i>Cordia Boisseri</i>	Wild-Olive	13	12	10
<i>Crescentia alata</i>	Calabash-Tree	3	6	1¾
<i>Delonix regia</i>	Royal Poinciana	3†	16	6
<i>Diospyros texanum</i>	Texas Persimmon	3	5½	2½
<i>Ehretia anacua</i>	Anacua	3	8	5
<i>Eriobotrya japonica</i>	Loquat	5	8¼	5
<i>Erythrina Cristi-gali</i>	Brazilian Coral-Tree	5	3	2
<i>Erythrina herbacea</i> var. <i>arborea</i>	Native Coral-Tree	2	8¼	8
<i>Eucalyptus algeriensis</i>	Algerian Eucalyptus	8	32	15
<i>Eucalyptus ficifolia</i>	Scarlet Eucalyptus	5	5	2
<i>Ficus benghalensis</i>	Banyan-Tree	3	8	4
<i>Fraxinus Berlandieriana</i>	Mexican (Rio Grande) Ash	3	12	10¼
<i>Grevillea robusta</i>	Silk-Oak	14	24	16
<i>Jacaranda acutifolia</i>	Jacaranda	8	20	12½
<i>Kigelia pinnata</i>	Sausage-Tree	3	10¼	6
<i>Koelreuteria formosana</i>	Bougainvillea-Tree	3	12¾	4
<i>Leucaena pulverulenta</i>	Tepehualje	3	25	20
<i>Litchi chinensis</i>	Litchee	3	4	3
<i>Magnolia grandiflora</i>	Southern Magnolia	5	2¼	1¾
<i>Parkinsonia aculeata</i>	Retama	3	16½	10½
<i>Peltophorum sp.</i>	Peltophorum	5	13	8
<i>Pithecolobium flexicaule</i>	Texas Ebony	3	9	7
<i>Prosopis chilensis</i>	Mesquite	4	11	10
<i>Pterocarya stenoptera</i>	Wing-Nut	3	7½	8
<i>Quercus virginiana</i>	Spanish Live Oak	4	9	6
<i>Salix nigra</i>	Black Willow	3	6¾	4
<i>Schinus terebinthifolius</i>	Brazilian Pepper-Tree	8	16	18
<i>Tamarix articulata</i>	Athel	2	16	12½
<i>Thevetia nereifolia</i>	Tiger-Apple	8	12	8½
<i>Ulmus alata</i>	Winged Elm	5	9	2½

\*Age of trees after setting seedlings approximately 6 months old.

†Size of plant six months after being frozen to the ground.



## SHRUBS

These medium sized plants are probably the most important group of ornamentals for use in building up the landscape picture. They are used to round out sharp corners and tie the taller forms in with the ground cover. It is highly desirable to use massed plantings of the less showy forms as background and (with trees) for skyline effect around the property lines with group plantings of the more attractive flowering types to give a splash of color.

Among these less showy shrubs for foundation planting we have: Pittosporums, Jasminums, Ligustrums, Pyracanthas, Viburnums, Photinias, Coto-neasters, Cinnamon Jasmine (*Artobotrys odoratissimus*), Chalcas, Guayacan (*Porlieria angustifolia*), Coyotillo (*Karwinskia Humboltiana*), Manzanita (*Malpighia glabra*), Zitherwood (*Citharexylum Berlandieri*), Colima (*Xanthoxylum Fagara*), *Elaeagnus pungens*, and Sea Grape (*Coccolobis uvifera*).

Of the very showy flowering shrubs which might be used, there is such a long list of excellent material to choose from that it is difficult to select a few. Of the better known species, one might use Bush Allamanda, Caesalpinia, Cassia, Duranta, Surinum Cherry, Yellow Sophora, Crape Jasmine, Hibiscus, Native Turk's Cap, Bush Morning Glory, Lantana, Crape Myrtle, Althea, Plumbago, Poinsettia, Esperenza, Cenizo, and Vitex.

Meritorious, but less known colorful shrubs include such subjects as: Dombeya, Daedalacanthus, Bottlebrush, Carissa, Clerodendrums, Cigarette Plant, Chinese Hat Plant, Hamelia, Bush Thunbergia, Ixora and Angels Trumpet.

For those who desire a sheared hedge it might be well to consider such plants as Texas Ebony, Carissa, Cenizo, Colima, Brasil, White Brush, Athel, Cherry Laurel, and the Ligustrums.

### Species

*Acacia amentacea*. Black Brush. A tall growing, evergreen shrub having very dark green pinnate foliage and straight spines about an inch long; numerous tassels of light yellow flowers which are followed by ornamental, purple seed pods. (Leguminosae.)

*Acacia angustissima*. Prairie Guajillo. A low growing plant rarely reaching a height of over three feet. In northern parts of Texas it behaves as an annual but in the southern part it is a perennial. It produces bright green, finely divided leaves and white acacia flowers. This is a valuable pasture plant in southwest Texas.

*Acacia Berlandieri*. Guajillo. This native acacia is the most famous honey plant in Texas. It is a tall growing shrub having a few thorns, numerous dark green, fern-like leaves; and beginning in the late fall, a few clusters of white acacia flowers which continue to bloom until late spring. The plants produce pods filled with large, round, glossy, brown beans.

*Acacia tortuosa*. Huisachillo. A low growing, native acacia, up to six feet in height, having foliage and flowers similar to that of the Huisache. The seed pods of the Huisachillo are somewhat like a soybean, whereas the Huisache seed pod is smooth and black. The bark of the Huisachillo is

greenish brown compared to the reddish brown bark of the Huisache. The Huisachillo is a honey plant, whereas the Huisache is only a pollen plant.

These native evergreen shrubs are resistant to drouth, and have ornamental ferny foliage.

*Allamanda neriifolia*. Yellow-Bush Allamanda. A semi-climbing type with clear yellow, tubular flowers that is well adapted and somewhat resistant to cold. (Apocynaceae.)

*Allamanda violacea*, Hort. Purple Allamanda. A small bush that produces dark green, lanceolate leaves and rose colored, tubular flowers. Not to be confused with the so-called Blue Allamanda (*Cryptostegia*) which produces lavender flowers.

These plants, which are shrub-like in form, produce glossy, dark green, lanceolate leaves, and typical allamanda flowers. They are quite tender to cold and will freeze to the ground at temperatures only slightly below freezing.

*Artobotrys odoratissimus*. Cinnamon Jasmine, False Ylang-Ylang, P. I. 37013. A semi-climbing, evergreen shrub having glossy, bright green leaves about six inches long; and spicy, fragrant greenish-yellow flowers and dense clusters of aromatic yellow fruits. Well adapted; rapid growing; somewhat tender to cold. (Annonaceae.)

*Asclepias tuberosa*. Butterfly Weed. A native evergreen bush, about three feet in height, having lanceolate, dark green, oleander-like leaves with milky sap, and clusters of orange and red flowers that are produced on the tips of the wand-like branches. The long pods are typical of the Milkweed Family. Sometimes called Mexican Oleander. (Asclepidaceae.)

*Atriplex acanthocarpa*. Salt Bush. A low growing, evergreen, native bush having dense, silver-gray ovate leaves. Useful as a soil binder along canals or ditch banks, or as a ground cover. (Chenopodiaceae.)

*Baccharis neglecta*. False Willow. A tall shrub that produces numerous, willow-like branches covered with very dark green, linear leaves. After warm rains, this plant produces a profusion of creamy white flower clusters which are followed by plumed seeds that cover the plant like a white cloud. This is one of the first plants to invade abandoned fields, and care should be taken to plant them only where the seedlings can be controlled. (Compositae.)

*Beloperone guttata*. Shrimp Plant. A small, tropical, evergreen shrub having rather brittle, spreading branches; medium green, ovate leaves; and showy spikes of brick-red floral bracts which terminate in small, inconspicuous, tubular, white flowers. This attractive plant appears to be well adapted to conditions in this region. (Acanthaceae.)

*Berberis*. Agrito, Barberry. These ornamental shrubs are native to other parts of Texas. They produce dark green, holly-like leaflets and showy berries. The *B. trifoliata* (Agrito) produces red berries, while *B. Swazeyii* (Five-Leaf Barberry) bears blue fruits. (Berberidaceae.)

*Breynia (Phyllanthus)*. These oval leafed, evergreen plants produce showy, variegated foliage. The plants are small, having graceful branches covered with soft, colorful oval leaves. Calico Bush (*B. nivosa* var. *roseo-pictus*) produces dark green leaves variegated in rose, cream and pink, the new growth

being pink. It can be used as a small hedge plant. Snow Bush (*B. nivos*a var. *albus*) produces green and white variegated leaves, the new growth being white. The Bronze-Bush (*B. nivos*a var. *autropurpureus*) provides a darker tone with bronze colored leaves. None of these types have been proven entirely satisfactory in the Lower Rio Grande Valley. (Euphorbiaceae.)

*Buddleia asiatica*. White Butterfly-Bush. This type differs from other Buddleias in that the plants have an upright habit of growth and produce lanceolate leaves and sweet scented flowers. It appears to be well adapted. (Loganiaceae.)

*Buddleia madagascariensis*. Yellow Butterfly-Bush. This rank growing, spreading shrub has gray green, lanceolate leaves and bright yellow spikes of flowers which are produced in great abundance during the early summer season.

*Buddleia* sp. Blue Butterfly-Bush. Of the blue flowered types only one unnamed variety has been found that appears to be adapted.

*Buxus microphylla* var. *japonica*. Japanese Box-Wood. This species is not generally planted in the Valley. However, it should be more popular as it does not require heavy shearing, and the plants are quite attractive in appearance. It produces small dark green, obovate leaves. (Buxaceae.)

*Buxus sempervirens*. English Box-Wood, Common Box-Wood. This is a tall growing species which must be sheared. It produces small, dark green, oblong leaves. It is commonly used as a hedge plant and appears to be well adapted.

*Buxus sempervirens* var. *suffruticosa*. Dwarf Box-Wood. This is a very dwarf type having very small, glossy oblong leaves. All Box-Wood are dense, evergreen, small-leaved plants and are valuable for borders and low hedges.

*Callicarpa americana*. French Mulberry. A deciduous bush that is native to East Texas. It produces bright green, verbena-like leaves, and numerous small pink flowers in the leaf axils during mid-summer. These are followed by showy, succulent, mulberry-colored fruits crowded in clusters along the branches. Appears to be well adapted. (Verbenaceae.)

*Calycanthus floridus*. Sweet-Scented-Shrub, Spice-Bush, Carolina All Spice. An upright growing shrub, about six feet tall, having large, glossy, dark green ovate to oval leaves. In late spring, it produces fragrant, reddish brown flowers. Does not appear to be very well adapted. (Calycanthaceae.)

*Camellia japonica*. Camellia. These evergreen shrubs have glossy, dark green, ovate to oblong leaves. The plants produce showy pink, white or red flowers in the single and double types. Camellias require an acid soil and thrive best in a well drained, sandy soil well supplied with humus. It is suggested that they be grown in a mixture of sandy loam and peat moss and under half shade. (Ternstroemiaceae.)

*Canna generalis*. Canna. Cannas are well adapted to conditions in the Lower Rio Grande Valley, and if given sufficient quantities of water, will bloom satisfactorily over long periods of time. They may be had in a variety of colors and color combinations. These ornamental plants are too common to be duly appreciated. (Cannaceae.)

*Centaurea bicolor*. Sacred Flower. Flowers mostly yellow, not fringed. (Polemoniaceae.)

*Cantua buxifolia*. Magic Flower. Flowers pinkish red with yellow striped tube and fringed crimson lobes.

Shrubs up to ten feet high having the young growth covered with velvety hairs. These plants produce small, crowded, oblong leaves and heavy terminal clusters of medium sized, trumpet shaped flowers which cause the twigs to droop.

*Carissa Arduina* var. *nana*. Dwarf Carissa. Plants attain a height of about two feet; have small flowers and fruits. Well adapted. (Apocynaceae.)

*Carissa grandiflora*. Natal Plum. A large growing type having numerous double spines, flowers about two inches in diameter and fruits about two inches long which are useful in jelly making. A rapid growing, well adapted shrub.

*Carissa spinarum*. Spiny Dwarf Carissa. A very dwarf type having very small leaves, flowers and fruits.

These spiny, evergreen plants produce glossy, dark green, ovate leaves, white flowers and bright red fruits.

*Castela texana*. Amargosa. A spiny native shrub that produces gray branches, small, dark green lanceolate leaves and small, four petal, red flowers which are followed by a profusion of glossy red fruits. Useful only in a location where a very thorny plant is required. (Simarubaceae.)

*Celtis pallida*. Granjeno. A large growing, native shrub that is closely related to the hackberry tree. It produces numerous, upright branches that bear a few thorns; small, rough, dark green ovate leaves and numerous small flowers which are followed by orange-red fruits. These fruits are used in making "Algerado" jelly. (Ulmaceae.)

*Cephalanthus occidentalis*. Button-Bush. A tall native shrub, usually found along canal banks, that produces light green, linear leaves and small, fragrant, white flowers in tight, circular heads. Not used as an ornamental but useful as a screen in swampy locations. (Rubiaceae.)

*Ceratostigma Willmottianum*. Dark Blue Plumbago. A type having deep green, oblong leaves, and deep blue flowers. The plants are small and less vigorous than the common types. (Plumbaginaceae.)

*Cestrum aurantiacum*. Orange Jasmine. A slender shrub having long, ovate dark green leaves and open clusters of orange-yellow, tubular flowers. Received from the U. S. D. A. (Solanaceae.)

*Cestrum diurnum*. Day Blooming Jasmine. An upright growing plant up to ten feet high that produces numerous willowy branches, bright green, lanceolate leaves, and clusters of small fragrant, tubular, white flowers which are followed by succulent, purple berries. Well adapted.

*Cestrum nocturnum*. Night Blooming Jasmine. An evergreen bush up to five feet in height that produces dark green, oblong leaves and a profusion of greenish flowers which open only at night and are intensely fragrant. The flowers are followed by oblong white berries. Well adapted.

*Chaenomeles (Cydonia) japonica*. Flowering Quince, Japanese Quince. A deciduous plant having oval to round leaves, orange-red flowers about an inch and a half in diameter and round, yellow fruits with a red blush. These plants have not fruited in this region. (Rosaceae.)

*Chrysobalanus Icaco*. Coco Plum. A large, ornamental shrub having glossy,

dark green ovate leaves. It produces small white flowers in erect racemes, which are followed by dry, sweetish, plum-shaped fruits that are sometimes used in preserving. This plant will thrive along the seacoast. (Rosaceae.)

*Citharexylum*. Zitherwood. There are two species of *Citharexylum* native to the Lower Rio Grande Valley. They are very much alike in appearance, producing medium green, ovate leaves, terminal spikes of small, white flowers and bunched, orange-red berries. They differ in that the Fruiting *Citharexylum*, *C. Berlandieri* (Zitherwood), produces fewer spikes of flowers and a great profusion of berries; the Flowering *Citharexylum* (*C. brachyanthum*) produces a profusion of flower spikes and very few berries. Both types require some pruning to keep the desirable inverted bowl type of plant. (Verbenaceae.)

*Clerodendrum speciosissimum (fallax)*. Red Clerodendrum. A shrub, up to four feet in height, having four angled stems, large, coarse, ovate leaves and numerous upright, bright red flowers in terminal cymes. The flowers are surrounded by short, toothed sepals having recurved lobes, and are followed by dark purplish berries. (Verbenaceae.)

*Clerodendrum foetidum*. Rose Glory Bower, Wild Hydrangea. A shrub, up to five feet in height, having strong scented, large, coarse, dark green, ovate leaves. The numerous dusty-red flowers are produced in terminal corymbs. Plants multiply by sending up numerous shoots from the root tips, as does the Cologne Bush.

*Clerodendrum fragrans*. Cologne Bush. A rapid growing evergreen bush three to four feet tall that produces coarse, dark green, ovate leaves, and fragrant, white camellia-like flowers. The foliage, when crushed, is quite malodorous.

*Clerodendrum Siphonanthus (Siphonanthus indica)*. Turks Turban. A tall, slender growing shrub up to ten feet high, that produces dark green, oblong leaves and slender cymes of tubular, white flowers which are followed by showy, glossy, deep purple fruits surrounded by thick, waxy, deep red, toothed sepals, the lobes of which are recurved. The fruiting branches remain attractive for a considerable length of time after being cut.

*Coccolobis uvifera*. Sea Grape. A rank growing, tropical, evergreen shrub that produces large, glossy, prominently veined, deep green, ovate leaves and racemes of fragrant white flowers which are followed by clusters of dark, reddish-purple fruits that make excellent jelly. This plant will thrive on saline soils but is tender to frost. (Polygonaceae.)

*Coldenia*. Several species of *Coldenia* are native in this region. These perennial plants are all evergreen. The plants are usually about 18 inches high and produce small, gray leaves and very small, white flowers in the axils of the leaves. Especially useful in soil erosion control. (Boraginaceae.)

*Colubrina texensis*. Hog Plum. A native, thornless, drouth resistant shrub that attains a height of five feet. The light green ovate leaves are produced along numerous gray, tortuous branches. In the early spring, it produces a profusion of peculiar, greenish-yellow flowers which are followed by small, oblong, seed capsules. This plant is of use chiefly in drouthy locations. (Rhamnaceae.)

*Coprosma Baueri*. Coprosma. This evergreen spreading shrub seldom



reaches a height of more than a few feet. The glossy, varnished appearance of the oval to oblong leaves and graceful habit of growth makes this an excellent foundation plant. (Rubiaceae.)

*Cotoneaster horizontalis*. Rock Cotoneaster, Horizontal Cotoneaster. A dwarf type having very small, dark green, oval leaves and a profusion of dark red berries. Its spreading habit of growth makes it useful as a ground cover. (Rosaceae.)

*Cotoneaster pannosa*. Silverleaf Cotoneaster. An evergreen shrub up to ten feet in height that produces willowy, arching branches; small, oval, dull green leaves which are silvery underneath; numerous clusters of small, white flowers which are followed by small, red fruits. Subject to fire blight and requires frequent pruning to remove dead wood.

*Cotoneaster pannosa* var. *nana*. Dwarf Cotoneaster. A dwarf, slender bush having dull green, oval leaves. Fairly well adapted.

*Cotoneaster Parneyi*. Fruiting Cotoneaster. An upright plant having dark green, small, oval leaves and a profusion of berries; semi-deciduous.

*Cotoneaster prostrata*. Prostrate Cotoneaster. A large, dense, spreading shrub having glossy, bright green, oblong leaves, few clusters of flowers, and very few, orange-red, flattened berries. The plants are quite tortuous.

*Coursetia axillaris*. Baby Bonnets. A native, evergreen, thornless bush that produces numerous small leaflets and throughout the early summer is covered with small, pink, pea-shaped flowers. (Leguminosae.)

*Cuphea hyssopifolia*. Narrow-Leaf Cuphea, Elfin Herb. Very dwarf plants up to nine inches high which produce very small, dark green, linear leaves and small, five petaled, lavender flowers throughout the year. (Lythraceae.)

*Cuphea lanceolata*. Firefly Cuphea. A small, upright plant that behaves as an annual in this region. It produces dark red stems about two feet high, dull green lanceolate leaves edged with red, and five petaled, flaming red flowers, having deep blue veining and white throats.

*Cuphea micropetala* and *miniata*. Cigarette Plant. *C. micropetala* is a native, evergreen, plant, usually about five feet in height, that produces medium green, smooth, ovate leaves and numerous, orange-red, tubular flowers, followed by small, red fruits. The seedlings which appear under the old bushes are easily transplanted. All three Cupheas are well adapted. *C. miniata* is a more floriferous type having velvety foliage and showy orange colored tubular flowers.

*Datura arborea*. Tree Angels-Trumpet. A tree-like form that produces large, pure white flowers (Figure 31). Very desirable. (Solanaceae.)

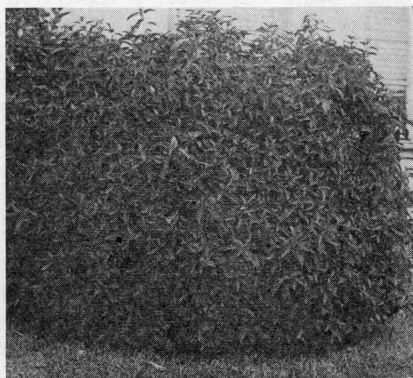
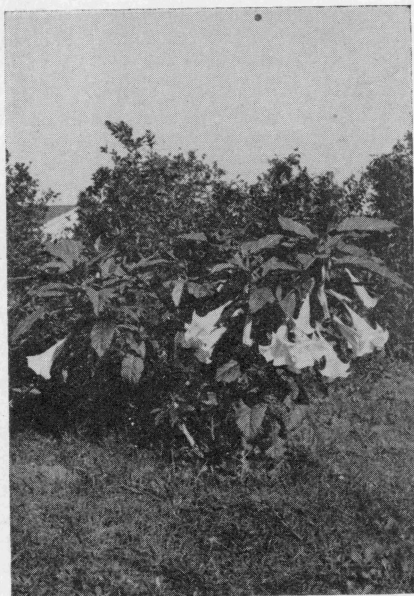


Figure 30. Cigarette Plant (*Cuphea miniata*). A shapely native plant that is more desirable than many temperate zone exotics.



**Figure 31.** Tree Angels - Trumpet (*Datura arborea*). A showy, flowering shrub that always attracts the attention because of its profusion of bloom.

*Dombeya* (Assonia) *punctata*. Rose Bouquet. This species has an upright, open habit of growth; upright terminal heads of deep pink, large florets. Plants are well adapted to Valley conditions.

*Dombeya* (Assonia) *Wallichii*. Pink Ball. A compact shrub having drooping heads of delicate pink flowers. Well adapted.

Rank growing, tropical shrubs which produces large coarse, cordate leaves and terminal heads of hydrangea-like flowers in colors ranging from white to pink.

*Duranta repens* (*plumieri*). Lilac-Flowered Golden Dewdrop. A rapid growing type having dense foliage and lilac colored flowers. Very desirable. (Verbenaceae.)

*Duranta repens* var. *alba*. White-Flowered Golden Dewdrop. A slow growing, sparse foliated type that is not well adapted as the lilac-flowered variety.

Large, evergreen shrubs that produces graceful, drooping branches, a few thorns, bright green ovate leaves and numerous small flowers throughout the year which are followed by numerous, small, golden "balls." These plants are resistant to disease and insect attack.

*Elaeagnus pungens*. Elaeagnus, Russian Holly. A large growing, evergreen shrub having small, dull green, holly-like leaves that are silvery underneath. The very fragrant, small, waxy, white flowers appear periodically

*Datura chlorantha*. Yellow Angels-Trumpet. A type having dark green foliage and yellow flowers, that appears to be well adapted.

*Datura Metel*. The Jimson-Weed of Texas. It is a valuable ornamental in some parts of the country, but must be considered inferior to *D. arborea* in the Valley.

*Datura sanguinea*. Rose Angels-Trumpet. A species having rose colored flowers that does not appear to be adapted to our conditions.

*Datura suaveolens*. White Angels-Trumpet. A double flowered type that produces white flowers tinged with purple. The plants appear to be well adapted.

Large spreading plants that produces coarse, dull green, lanceolate to ovate leaves, and large trumpet-shaped flowers which open early in the evening and close during the day.

*Dombeya* (Assonia) *hybrida*. Blanche. A large shrub having white flower heads of typical Assonia type. (Sterculiaceae.)

throughout the year, and are followed by a few oblong, orange-red fruits. This plant is well adapted and makes rapid growth. (Elaeagnaceae.)

*Ephedra antisiphilitica*. Joint-Fir, Poptillo. This peculiar native plant produces numerous green branches having no leaves. After blooming early in the summer, the plant produces numerous red fruits in June and July. (Ephedraceae.)

*Eranthemum (Daedalacanthus) nervosum*. Daedalacanthus. An evergreen shrub up to five feet in height that produces dark green, deeply veined ovate leaves and spikes of small, deep blue flowers which appear during the winter and spring season. (Acanthaceae.)

*Ervatamia (Tabernaemontana) coronaria*. Pinwheel Jasmine. Similar in appearance to the commonly planted Crape Jasmine, except that the flowers are single and smaller. Not to be confused with the Pinwheel Jasmine Vine. (Apocynaceae.)

*Ervatamia (Tabernaemontana) coronaris* var. *flore-pleno*. Crape Jasmine, Clavelle de India, Indian Carnation. A tender, evergreen shrub bearing glossy, bright green, ovate-lanceolate leaves with milky juice. The bushes are somewhat similar in appearance to those of the Cape Jasmine. The very double, white flowers are about three inches across, and the petals have wavy margins. Well adapted.

*Eugenia paniculata* var. *australis (myrtifolia)*. Surinum Cherry. A large, tree-like shrub having oval, glossy green leaves two to three inches long. Useful principally as a hedge plant. (Myrtaceae.)

*Eugenia uniflora*. Surinum Cherry. These compact plants have small, deep green, ovate leaves and bright red, ribbed fruits.

Large evergreen shrubs that produce glossy, dark green leaves; small circular, white flowers; and edible, red fruits about the size of cherries.

*Euonymus europaeus*. European Burning Bush, Bush Bittersweet. An erect shrub having dark green oblong leaves. In the spring, this plant produces clusters of small, yellow flowers, which are followed in the fall by rose colored berries that split open, disclosing the orange colored seed. Leaves of this plant turn red in the fall in other regions, but have failed to change color or shed in the Lower Rio Grande Valley. (Celastraceae.)

*Euonymus japonicus*. Evergreen Burning-Bush, Japanese Euonymus. An upright, evergreen plant that produces dark green, obovate leaves. These plants appear to be short lived and are subject to chlorosis.

*Euphorbia heterophylla*. Mexican Poinsettia, Hypocrite Poinsettia. A small native plant having hollow, pithy stems and milky sap. The leaves, oblong-lanceolate, have notched margins and are splotched with red and yellow. The inconspicuous, greenish flower heads are borne in terminal clusters at the tips of the branches and are followed by small round seeds. This can be made into a useful foliage plant by roguing out the undesirable and poorly colored specimens. (Euphorbiaceae.)

*Euphorbia pulcherrima*. Poinsettia. These plants are upright in habit of growth and produce large, ovate, dark green leaves. During the fall and winter seasons, the terminal leaves surrounding the flower clusters develop a bright scarlet-red color. Certain strains produce terminals having densely clustered scarlet leaves. The pink Poinsettia is a type having pale pink to

greenish-pink terminal leaves. Less showy than the red variety. The White Poinsettia is a type which produces greenish-white terminal leaves. Less desirable than the red variety.

A group of plants having hollow stems and milky sap. These showy ornamentals produce terminal leaves that take on a bright coloration in the fall and have the appearance of large flowers. The true flowers are small, greenish-yellow heads surrounded by floral leaves.

*Eysenhardtia texana*. Rock-Brush. A native thornless shrub or small tree having gray bark on its branches and numerous aromatic pinnate leaves. The small, white aromatic flowers are borne in great abundance. (Leguminosae.)

*Fallugia paradoxa*. Apache Plume. An evergreen shrub, native to the Winter Garden area, that is quite similar to the wild rose in its general appearance. The plants have a spreading habit of growth and produce small divided leaves, numerous white, rose-like flowers and seeds having feathery plume-like appendages. (Rosaceae.)

*Feijoa Sellowiana*. Feijoa. A large, symmetrical, evergreen shrub which produces gray green, oval leaves, and a profusion of rosy-white flowers having conspicuous red stamen (Figure 32). The red birds and orioles relish the petals of the flowers, and remain in the vicinity of the bushes as long as they are blooming. The bloom is followed by oval, green fruits about the size of a plum, which do not mature in this region. Hardy to cold and very desirable. (Myrtaceae.)



Figure 32. *Feijoa* (*F. sellowiana*). A well adapted, evergreen, fruiting bush from the tropics having silvery green and attractive pinkish blossoms.

*Forestiera angustifolia*. Elbow Bush. An evergreen native bush up to four and one half feet high that produces many short, right angled branches and dense, dark green, linear leaves about  $\frac{3}{4}$ -inch long. In early spring the staminate bushes produce a profusion of small flowers which have no petals but are composed of numerous yellow stamen. The flowers are followed in mid-summer by a profusion of dark blue, oblong drupes. (Oleaceae.)

*Fuchsia hybrida*. Fuchsia. The commonly grown hybrid fuchsias demand shade and moisture. The leaf color ranges from light green to dark reddish green; while the range of colors in the flowers included white, violet, pink, red and blue. Hybrid fuchsias do not thrive out-of-doors in this region, and the Valley Experiment Station is including *F. arborescens*, a species from Mexico, in their trial plantings with the hope that it will prove adapted to outdoor culture. (Onagraceae.)

*Gardenia grandiflora* (*florida*). Cape Jasmine. Gardenia. A large bush



having glossy, dark green leaves and fragrant, double, white flowers of medium to large size. These plants require an acid soil, and should have periodic applications of iron sulfate worked into the soil to prevent chlorosis. (Rubiaceae.)

*Genista hispanica*. Spanish Broom. A multiple branched shrub having very dark green, linear leaves and short racemes of bright yellow, pea-shaped flowers. This plant appears to be well adapted to conditions in the lower Rio Grande Valley. (Leguminosae.)

*Gyminda latifolia*. Wild Box-Wood, Cross thorn. This native bush will reach a height of about three feet. It produces coriaceous, cuneate leaves, and small white flowers, which grow directly out of the sides of the stems. The green, globelike fruit ( $\frac{1}{2}$ -inch in diameter) adhere to the stem like galls. The plant bears occasional quite large thorns on either side of the stem. (Celastraceae.)

*Hamelia erecta (patens)*. Scarlet-Bush. An evergreen shrub having bright green ovate leaves veined with red. The young twigs and foliage are also red. This plant produces cymes of scarlet-orange, tubular flowers. Plants are tender to cold but will sprout from the root if frozen back. (Rubiaceae.)

*Hibiscus calycinus*. Yellow-Flower Hibiscus. A single, yellow flowered variety that appears to be well adapted. (Malvaceae.)

*Hibiscus cannabius*. Double Yellow Hibiscus. A double, yellow flowered variety that is very showy. It appears to be less hardy than other species.

*Hibiscus cardiophyllus*. Silver-Leaf Hibiscus. This small native shrub produces attractive red flowers and will thrive under conditions that are unfavorable for other species.

*Hibiscus heterophyllus*. Australian Hibiscus. Plants of this variety have dark green, red veined leaves and produce single, white flowers having maroon colored markings.

*Hibiscus mutabilis*. Cotton Rose, Confederate Rose. A large shrub or small tree having large, dull green foliage. It produces terminal flower clusters which open in the morning, white in color, turn pink by noon and red by night fall. Plants can be obtained in single or double flowered varieties. This is a rapid growing, well adapted plant.

*Hibiscus Rosa-sinensis*. Chinese Hibiscus. This group includes both single and double flowered types of the common hibiscus in a wide variety of colors.

*Hibiscus schizopetalus*. Fringed Hibiscus. This is the fuchsia-flowered type of hibiscus and the deeply cut, lacy, fringed petals are recurved about rather prominent pistils. It is well adapted and should be useful in hybridizing work.

*Hibiscus syriacus*. Althea, Rose-of-Sharon. A large, deciduous shrub which produces hibiscus-like leaves and medium size, hibiscus-like flowers in both single and double forms. The color types range from pure white to deep red, and include a number of multicolored varieties.

These showy subtropicals are most useful because of their attractive appearance and everblooming habit. The shrubs resemble cotton plants in appearance, and there is a wide range of colors to choose from. All types, except some of the hybrid yellows, appear to be well adapted.



*Holmskioldia sanguinea*. Chinese-Hat Plant, Christmas Plant. A rapid growing, evergreen shrub up to ten feet in height that produces dull green, ovate leaves. The plants have graceful, drooping branches and, in fall and winter, are covered with a profusion of small, red, tubular flowers having circular, brick-red calyxes. Well adapted to Valley conditions. (Verbenaceae.)

*Hydrangea macrophylla (opuloides)*. Hydrangea. This plant has not proven well adapted under average soil conditions found in the Lower Rio Grande Valley. However, if the soil is built up with peat moss, leaf mold and manure, and if the plants are given sufficient shade and moisture, they can be satisfactorily grown. The color of the blossoms can be intensified to deep blue by adding aluminum sulfate to the soil, or can be changed to pink by adding iron sulfate. (Saxifragaceae.)

*Ilex vomitoria*. Yaupon. The plants have small, dark green, elliptical leaves and dark red berries. Not entirely satisfactory in the Lower Rio Grande Valley. (Aquifoliaceae.)

*Ipomoea crassicaulis*. Texas Bush Morning-Glory. A native, evergreen bush up to fifteen feet high, that produces large, ovate, dull green leaves and a profusion of lavender to pink morning-glory flowers which are followed by woolly seed capsules. Well adapted, rapid growing. (Convolvulaceae.)

*Ixora fulgens*. Ixora, Indian Flame-Bush. A tropical, evergreen shrub that produces glossy green, oblong leaves, and panicles of showy, orange-red flowers. This plant appears to be well adapted to conditions in this region. (Rubiaceae.)

*Jacobinia (Justicia) carnea*. Pink Jacobinia. A shrub one to three feet tall having lanceolate to ovate leaves and large spikes of pink flowers. (Acanthaceae.)

*Jacobinia (Justicia) velutina*. Rose Jacobinia. This is a dwarf plant up to one foot high producing medium green, lanceolate leaves and showy, rose colored flowers. For best results, plants should be replaced every year.

*Jasminum floridum*. Florida Jasmine. This plant was formerly called Humile Jasmine. A graceful, evergreen shrub having angled, reflexed branches; very dark green, small, three to five-foliolate leaves; and very small, golden yellow, star-like flowers that are borne in open clusters (Figure 33). Well adapted and very desirable. (Oleaceae.)

*Jasminum grandiflorum*. Spanish Jasmine. An evergreen shrub that produces dark green, five to seven-foliolate leaves and fragrant, pedicelled, white flowers about three-fourths of an inch in diameter, which are borne in open clusters. Well adapted and quite desirable.

*Jasminum humile*. Italian Jasmine. An evergreen climbing shrub



Figure 33. Florida Jasmine (*Jasminum floridum*). This graceful plant has fine, glossy green foliage and small yellow flowers. Easily grown under Valley conditions.

up to fifteen feet in height that requires support. It produces angled, green branches, 3 to 7-foliolate leaves, the leaflets being medium green (1½ to 2 inches long); bright yellow, fragrant flowers in open clusters. Well adapted but not as desirable as *Jasminum floridum*.

*Jasminum primulinum*. Primrose Jasmine. A rapid growing, hardy evergreen shrub that produces graceful, arching branches, four angled stems, medium green, three-foliolate leaves, and bright yellow, solitary flowers about two inches in diameter (Figure 34). Well adapted.

*Jasminum Sambac*. Arabian Jasmine. An evergreen bush having thick, glossy, dark green, oblong leaves about one and one half inches long and a profusion of very double, fragrant, white flowers about an inch and a half in diameter. Well adapted and easily propagated by cuttings.

*Jasminum Sambac* var. Maid of Orleans Jasmine. A trailing type of bush that produces thin, medium green, ovate leaves about two inches long, and semi-double, fragrant white flowers three-fourths of an inch in diameter. Well adapted but less hardy to cold than Grand Duke Jasmine.

Jasmine bushes and vines are popular landscape subjects and appear to be well adapted to conditions in this region, except Cape Jasmine (*Gardenia*) which becomes chlorotic unless treated regularly with iron sulfate (copperas). Many species of plants belonging to several different botanical families are commonly called jasmine. Only the plants indicated as *Jasminum* are true jasmines.

*Jatropha Curcas*. Physic Nut. A large shrub that produces beautiful, deeply lobed leaves which are glossy red when they first appear; small yellow flowers, and small yellow fruits which contain poisonous seed. (Euphorbiaceae.)

*Jatropha spathulata*. Leather-Weed. This native plant reaches a height of about two feet, and produces numerous, dark green, spatulate leaves and small white to pink flowers in the axils of the leaves. The reddish brown branches can be bent in any direction, and tied into knots without stopping the growth of the plant. The mucilaginous substance has led people to believe that the plant contains latex; however, according to Mr. H. B. Parks of the Texas Experiment Station, analysis has proven that it does not. The Mexicans call the plant "Sangre de Grado," meaning the blood of the dragon, and use the root as a dentifrice, believing it will kill pyorrhea. (Euphorbiaceae.)



Figure 34. Primrose Jasmine (*Jasminum primulinum*). Similar to the Florida jasmine in general appearance, but the leaves are larger, dull green in color and the flowers are larger and less abundant.

*Juniperus chinensis* var. *Pfitzeriana*. Pfitzer's Juniper. Somewhat similar to the Horizontal Juniper, but having dark green foliage (Figure 35). Makes an excellent foundation plant, responds to shearing. (Pinaceae.)



**Figure 35. Pfitzer's Juniper** (*Juniperus chinensis* var. *Pfitzeriana*). **This semi-prostrate, dark green conifer is useful for color contrast with *Juniperus horizontalis* var. *Douglasii*.**

*Juniperus horizontalis* var. *Douglasii*. Waukegan Juniper, Horizontal Juniper. A large spreading conifer with blue-green foliage. Seldom attains a height of more than five feet, but may spread out as much as eight or ten feet.

*Karwinskia Humboldtiana*. Coyotillo. A low growing, native evergreen shrub with smooth bark, and beautifully veined, deep green ovate leaves. During the summer the plants produce numerous green flowers which are followed by shiny

brown berries. This plant always presents a fresh, thrifty appearance and grows under a wide range of conditions. (Rhamnaceae.)

*Kerria japonica*. Globe-Flower, Corchorus. An attractive, low growing, semi-evergreen shrub that produces bright green stems and ovate leaves and small, flat, yellow flowers about an inch and a half in diameter. There is also a White Kerria (*Rhodotypos kerriodes*) which produces dark green foliage, that is of value chiefly because it can stand neglect and abuse. The Globe-Flower is similar to our native shrub, *Mentzelia oligosperma*, in appearance, but is not as well adapted to conditions in this region. (Rosaceae.)

*Koerberlinia spinosa*. Crown-of-Thorns, All-Thorn, Junco. A leafless, native shrub that is composed of a mass of slender branches covered with sharp green thorns. In the spring, it produces small, white flowers along the branches. These flowers are followed by small black berries. (Koeberliniaceae.)

*Lagerstroemia indica*. Crape Myrtle. A well adapted shrub that will thrive under adverse conditions. The lilac-flowered and watermelon-pink varieties appear to produce the heaviest bloom, but the white and light pink-flowered varieties are also well adapted. (Lythraceae.)

*Lagerstroemia speciosa*. Queen Crape Myrtle. A tree-like shrub that produces large, elliptic leaves and large panicles of pink to purple colored flowers that average two inches in diameter.

Deciduous shrubs or trees that produce spike-like panicles of crinkled (crape-like) flowers in a wide range of colors.

*Lantana camara*. Lantana. This plant produces showy, flat, circular verbenalike flower clusters in color combinations of orange and red, pink and yellow, or pure yellow, lavender or white. The native variety, *L. camara* var. *horrida*, produces orange and red flowers in profusion followed by numerous purplish berries. (Verbenaceae.)

*Lantana involucrata*. White Lantana. A native plant having willow-like branches bearing small clusters of white flowers.

*Lantana macropoda*. Long Stem Lantana. A slender native bush which produces clusters of lilac and white flowers.

*Lantana Sellowiana*. Weeping Lantana. A prostrate plant having drooping branches and deep lavender, flat flower clusters.

Aromatic, semi-evergreen bushes, three species of which are native to the Lower Rio Grande Valley. These plants produce verbena-like leaves and ornamental flower clusters during the greater part of the year.

*Larrea tridentata*. Cresote Bush. This native evergreen shrub resembles the Roman Myrtle. It produces small, hoof-shaped leaves and small five petaled, yellow flowers. The foliage produces a cresote odor when crushed. This plant makes an excellent hedge plant. (Zygophyllaceae.)

*Lawsonia inermis*. Reseda, Mignonette Tree. A rapid growing evergreen shrub from Mexico that reaches a height of about six feet. It produces small lanceolate leaves. The small yellowish flowers, which are produced in large, spike-like panicles, have a pleasing fragrance and contain volatile oil which is used in perfume. The young leaves and twigs are used in making dye. *L. rubra* is similar to *L. inermis* except that it produces fragrant red flower panicles. (Lythraceae.)

*Leonotis Leonurus*. Lion's Tail. A shrub up to about four feet high that produces aromatic, bright green ovate leaves and spikes of peculiar, orange colored, woolly, tufted flowers. Well adapted. (Labiatae.)

*Leucophyllum frutescens*. Cenizo, Barometer Bush. A popular, native, evergreen shrub having small, silvery-gray oval leaves (Figure 36). After warm rains, the plants are covered with masses of lavender colored, snapdragon-like flowers for several days. Some plants produce white flowers. This plant is valuable for use in group plantings to give pleasing color effects and makes an excellent hedge plant. Due to the fact that it is drouth resistant, it can be used in locations that are not suited to other subjects. (Scrophulariaceae.)

*Ligustrum amurense*. Amur River Privet. A rapid growing, evergreen to semi-evergreen privet which makes an excellent plant for sheared hedges. It is also useful as a screen for unsightly spots. It produces small, dark green, oval

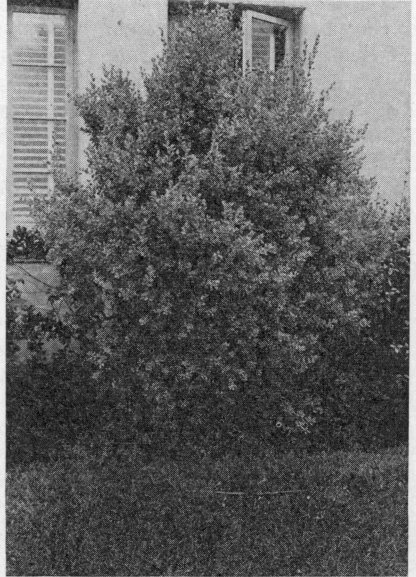


Figure 36. Cenizo (*Leucophyllum frutescens*). A native, evergreen shrub having silvery green foliage and producing a profusion of lavender colored snapdragon-like blossoms after rains. This plant is often called Barometer Bush.



leaves. Spikes of dainty white flowers appear in mid-summer. (Oleaceae.)

*Ligustrum lucidum* var. *compactum*. Glossy Privet. Wax-Leaf Ligustrum. A tall, compact, evergreen shrub that produces glossy, thick, evergreen ovate leaves and terminal panicles of fragrant white flowers in midsummer, which are followed by clusters of purplish fruits. Well adapted; hardy to cold; resistant to insect pests; very desirable.

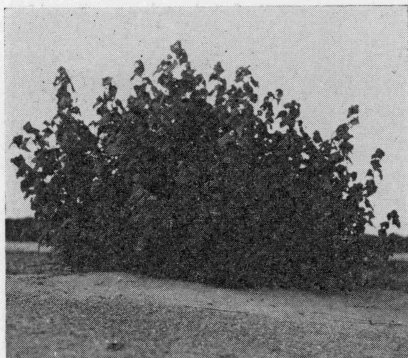
*Lippia Berlandieri*. Red-Brush. A small-growing native bush which produces aromatic, verbena-like leaves, and small spikes of rose colored flowers during the spring and summer. (Verbenaceae.)

*Lippia ligustrina*. White-Brush, Bee-Brush. An evergreen plant up to seven feet high having small, medium green, narrow, aromatic leaves; brittle, whitish, willowy branches and mignonette-scented spikes of small white flowers.

*Lycium* sp. Lycium. Several species of Lycium are found growing in the Lower Rio Grande Valley. These large evergreen shrubs produce long slender branches that are densely covered with small narrow leaves. The flowers are similar in appearance to tomato blossoms, and the fruits are reddish. (Solanaceae.)

*Malpighia corigera*. Holly Malpighia, Micro-Holly. An evergreen shrub having small, bright green, holly-like leaves. The plants produce small, crinkled, pinkish flowers and small, bright red fruits. Sometimes called Dwarf Holly. (Malpighiaceae.)

*Malpighia glabra*. Barbados Cherry. Both the cultivated form and the Wild Barbados Cherry make desirable ornamental shrubs. The cultivated form is a large shrub having shining green ovate leaves, small, pink, crape myrtle-like flowers, and glossy, red, edible fruits. Manzanita, or Wild Barbados Cherry (Wild Crape Myrtle), is an evergreen, native shrub that resembles the cultivated Barbados Cherry in leaf, flower and fruit characteristics except that each of these is smaller than that produced by the cultivated plant. The small, glossy, dark green leaves; small, crinkled, rose-pink flowers; and glossy, red fruits make this plant a desirable ornamental. Manzanita bushes should be pruned annually to keep them symmetrical and compact in appearance. Well adapted and very desirable.



**Figure 37. Native Turk's Cap (*Malvaviscus Drummondii*). An easily grown, native plant that should be extensively used throughout South Texas.**

*Malvaviscus Drummondii*. Wild Turks Cap. A native bush up to thirty inches high having small, red, tubular flowers which are followed by showy, scarlet-red fruits about one-half inch in diameter (Figure 37). Well adapted and very desirable. (Malvaceae.)

*Malvaviscus grandiflorus*. Turk's Cap. A large, rapid growing, trop-



cial plant up to fifteen feet high that produces red flowers about three inches long. Easily established and easily grown.

Leafy, evergreen shrubs that produce dark green, notched ovate leaves. During the fall and winter, these plants are covered with a profusion of bright red, partly closed, bag-shaped flowers.

*Maytenus phyllanthoides*. Leather-Leaf. This plant thrives in the alkaline soils along the coast. It produces dark green, thick, hard, ovate leaves and very small, pinkish white flowers which are borne in the axils of the leaves. (Celastraceae.)

*Michelia (Magnolia) fuscata*. Banana Shrub. A large evergreen shrub belonging to the magnolia family that produces large, glossy, dark green foliage somewhat smaller than that of the magnolia. The small flowers (one inch in diameter) are brownish yellow, edged with red and have a banana-like fragrance. (Magnoliaceae.)

*Mortonia Greggii*. Mortonia. A slow growing, native shrub having numerous lateral branches about an inch long which are covered with crowded bright green linear leaves that hide the main stem. In the spring, these plants produce numerous, small, white flowers at the tips of six-inch pedicels. (Celastraceae.)

*Murraea (Chalcas) paniculata*. Orange Jasmine. An evergreen shrub belonging to the citrus family. This plant produces dark green, compound leaves and small, bell-shaped, fragrant, white flowers resembling orange blossoms, which appear several times during the year, and are followed by small red berries. This shrub will attain a height of ten feet. It can be sheared to advantage and makes an excellent hedge plant in protected locations. These plants are about as tender to cold as lime trees. (Rutaceae.)

*Myrica cerifera*. Wax Myrtle, Swamp Myrtle. A small bush, usually three to four feet in height, that is native to the swampy lands along the eastern Gulf Coast and East Texas. It produces small, wand-like branches and yellowish-green ovate leaves. The whole plant is aromatic, the leaves and seed pods being covered with a white wax during the fall season. The bay-berry candles of literature were made from this wax, according to Mr. H. B. Parks of the Texas Experiment Station. (Myrtaceae.)

*Myrtus communis* var. *compacta*. Dwarf Myrtle. Dwarf Roman Myrtle produces very small, bright green, linear leaves and small, white, circular flowers. Well adapted and highly desirable for shearing. (Myrtaceae.)

*Myrtus communis* var. *microphylla*. Narrow-Leaf Myrtle. This Roman Myrtle is similar to the commonly planted Sweet Roman Myrtle, except that the leaves are narrower. A desirable intermediate type.

*Myrtus communis* var. *romana*. True Roman Myrtle, Sweet Roman Myrtle. A tall growing, upright myrtle that produces, shiny, deep green, narrow leaves and small, circular, white flowers which are followed by clusters of purplish fruits. Desirable for use with other types of myrtle.

Evergreen plants having small, glossy, dark green, ovate-lanceolate leaves. Myrtle bushes are frequently used as sheared subjects.

*Nandina domestica*. Nandina. An upright growing, evergreen shrub that produces small, dark, glossy green, ovate-lanceolate leaves which have a reddish-bronze color while they are immature. Panicles of white flowers are

produced in the spring, and are followed in the fall and winter by showy red berries. Some pruning is required to attain compactness of plants. (Berberidaceae.)

*Nerium oleander*. Oleander. Oleander shrubs are well adapted to conditions in this region. They grow readily from cuttings, make rapid growth, and produce a profusion of bloom if pruned regularly. They are too easily grown to be duly appreciated. There are many colors to choose from in both the double and single flowered forms. The double rose flowered and double white flowered varieties appear to be the most popular. (Apocynaceae.)

*Pachystachys (Jacobinia) coccinea*. Scarlet Jacobinia, Cardinal's Guard, New Zealand Honeysuckle. An evergreen shrub reaching a height of about five feet that produces glossy, bright green, lanceolate leaves. The plant is topped by slender, spike-like, panicles of small, waxy, dark red, tubular flowers. Well adapted. Not to be confused with the true Red Justicia (*J. secunda*). (Acanthaceae.)

*Photinia serrulata*. Low Photinia. A large, evergreen shrub that produces dark green serrated ovate leaves. The white flowers are produced in panicles and are followed by small, bright red berries which persist into the winter season. Well adapted, and quite desirable. (Rosaceae.)

*Phytolacca americana*. Pokeberry. A small, well adapted shrub that is native to many parts of Texas. It produces dark green, ovate leaves and spikes of small white flowers which are followed by bunches of ornamental purple berries. The berries are said to be poisonous. (Phytolaccaeae.)

*Pisonia aculeata*. Pisonia, Wild Bougainvillea. A compact, thorny, evergreen, native shrub that produces dark green, ovate leaves somewhat similar to the Bougainvillea foliage, and small, inconspicuous, greenish flowers. This shrub requires regular pruning when used as a hedge or foundation plant. Well adapted, but somewhat tender to cold. (Nyctaginaceae.)

*Pithecolobium brevifolium*. Gulf Coast Guajillo. A tall growing, native, evergreen shrub having numerous, finely cut, dark green leaves. In the spring,

and again after the summer rains, it produces a profusion of small, cream-colored flower clusters followed by straight bean pods. The plant is covered with numerous spines about one-fourth inch long. (Leguminosae.)

*Pittosporum daphniphylloides*. Daphne-Leaf Pittosporum. A U. S. D. A. introduction (P. I. 99195) smaller in size than *P. Tobira* that appears to be well adapted. It produces oblong leaves. (Pittosporaceae.)

*Pittosporum phillyraeoides*. Narrow-leaf Pittosporum. A dwarf type having bright green, linear leaves and a spreading habit of growth. Well adapted and quite desirable.



**Figure 38.** Japanese Pittosporum (*Pittosporum Tobira*). A sturdy dense, evergreen shrub having glossy, dark green foliage.

*Pittosporum Tobira*. Japanese Pittosporum. A large, sturdy shrub having very dense, dark green, obovate leaves and creamy white, fragrant flowers (Figure 38). Well adapted and very desirable.

*Pittosporum Tobira* var. *variegata*. Variegated Pittosporum, Variegated Japanese Pittosporum. A variety having glossy, obovate leaves similar to Japanese Pittosporum, except that they are variegated with white. Not as vigorous as the Japanese variety.

A group of plants that are valued chiefly for their dense, dark green foliage and their ability to thrive in exposed, windy locations.

*Plumbago capensis*. Blue Plumbago. A variety having light green, oval leaves and sky blue flowers. Rapid growing, vigorous plants; well adapted to this region. (Plumbaginaceae.)

*Plumbago indica*. Pink Plumbago, Red Plumbago. A variety having large, dark green, ovate leaves and deep rose-colored flowers. Trailing in habit of growth and less vigorous than the common white or blue varieties.

*Plumbago scandens*. White Plumbago. Native along the Rio Grande and Cameron County resacas. It is similar in appearance to Blue Plumbago, except that the flowers are white and the plant is more inclined to climb. Well adapted.

*Plumeria alba*. White-Flowered Frangipani, Suchel, Zuchel. Flowers white with yellow centers. (Apocynaceae.)

*Plumeria rubra*. Pink-Flowered Frangipani. Flowers rose colored. Less showy than the white flowered type.

*Plumeria tricolor*. Tricolor Frangipani. Flowers white with rose markings and yellow centers.

Deciduous, tropical shrubs having dull green, thick, succulent branches filled with milky sap. They produce large, dark green, oblong, Ficus-like leaves, and open clusters of fragrant, tubular flowers.

*Poinciana (Caesalpinia) Gilliesi*. Bird-of-Paradise-Bush. A native of West Texas that produces gray-green, mimosa-like foliage and heavy clusters of pea-shaped, yellow flowers having conspicuous red stamens. (Leguminosae).

*Poinciana (Caesalpinia) pulcherrima*. Flower-Fence, Dwarf Poinciana. This is probably the most commonly grown species. The plants are deciduous, slightly thorny, upright shrubs that produce pinnate foliage and flattened, flaming red flowers which are edged with yellow. There is a native variety that produces bright yellow flowers, *P. Mexicana*. (Figure 39.)

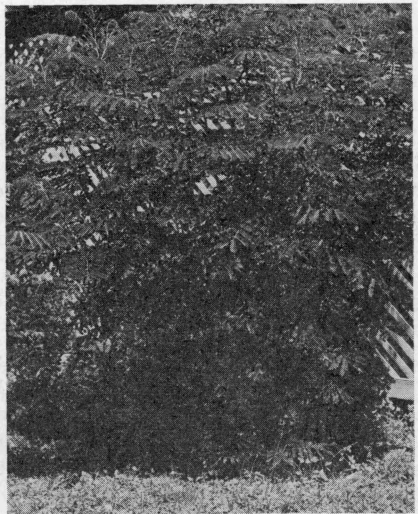


Figure 39. Barbados Flower Fence (*Poinciana pulcherrima*). This showy flowering shrub is very popular in the near tropics of Texas.

*Polyscias*. Aralia. Upright, tender, evergreen shrubs that produce light green to grayish green, orbicular foliage, usually with creamy-white splotches and white, serrated margins. *P. Guilfoylei* is recommended where a tall type is desired, while *P. Balfouriana* is an excellent shade-loving, patio or tub subject. (Araliaceae.)

*Porlieria angustifolia*. Guayacan, Soapbush. A large, native, evergreen shrub having dark grayish-green, finely cut, dense foliage. In the spring it produces small, purple flowers followed by heart shaped, red seed capsules. (Zygophyllaceae.)

*Prosopis cinerascens*. Screw-Bean. This small relative of the mesquite is found in the grass flats along the coast. It seldom reaches a height of more than twelve inches and produces Mesquite-like foliage and numerous coiled bean pods. (Leguminosae.)

*Punica granatum*. Fruiting Pomegranate. Plants have bright green, linear leaves, red flowers, and large, purplish-red, edible fruits. (Punicaceae.)

*Punica granatum* var. *Legrellei*. Flowering Pomegranate. A type having bright green, linear leaves and large pink, very double flowers but no fruits. Used as a sheared hedge.

*Punica granatum* var. *nana*. Dwarf Pomegranate. The plants of this variety are quite small, but produce rather large, showy, red flowers and medium sized fruits. Used chiefly as an oddity.

*Pyracantha crenato-serrata*. Spreading Firethorn. This species has bright green oval leaves and orange-red berries which are produced on bushy plants heavily armed with thorns. (Rosaceae.)

*Pyracantha crenulata*. Upright Firethorn. A spreading tree-like shrub having dull green oval leaves and dark red berries. Plants are covered with attractive white flower clusters during March.

*Randia mitis*. Palo de Pasto, Crossthorn. A native thorny shrub that produces its lateral, thorn tipped branches at right angles to the main stem. Under cultivation, it produces numerous, bright green obovate leaves and attractive white flowers having recurved petals. The short stemmed flowers are borne flat against the branches. (Rubiaceae.)

*Reinwardtia indica (trigyna)*. Gold Eagle Plant. This showy, evergreen shrub produces dull green, elliptic leaves and an abundance of large golden-yellow flax blossoms. It appears to be well adapted to conditions in this region. (Linaceae.)

*Rhododendron (Azalea) indicum*. Azala. These plants are very demanding in their soil requirements, and will not thrive in an alkaline soil. However, azaleas can be grown in this region if planted in a built-up soil of compost or peat moss mixed with leaf mold. Since the plants are surface feeders, Florida growers find it necessary to "lift" the plants every year so that the roots will not feed too deep. The Kurume type of azaleas have been brought into bloom in this region by adjusting the soil to meet their requirements. (Ericaceae.)

*Rosa*. Rose. Rose bushes are usually short lived in the Lower Rio Grande Valley. Varieties that appear to be longer lived and thriftier than the aver-



age are: Radiance, Hadley, Gruss an Teplitz, and K. A. Victoria. Those rating second in vigor are: Francis Scott Key, Talisman, Luxembourg, Lady Hillington, Golden Dawn, and Marchel Niel. (Rosaceae.)

*Salvia ballotaeiflora*. Shrubby Blue Sage. A native evergreen shrub about three feet high that produces small, ovate leaves and small, sky blue, solitary flowers. Not as showy as the other species but useful in drouthy locations. (Labiatae.)

*Salvia coccinea*. Texas Red Sage. A small, native plant having dark green, ovate perennial foliage and terminal spikes of deep red flowers. Produces an abundance of viable seed.

*Salvia farinacea*. Mealy Blue Sage. A native plant up to two feet tall having the ovate foliage and light blue flowers covered with a mealy-like pubescence. Very attractive and well adapted.

*Salvia leucantha*. Mexican Purple Sage. Plants of this species are similar in size to the Mealy Blue Sage. The long-ovate leaves are gray-green in color and very hairy. The velvety purple flowers are borne in spikes and have conspicuous white sepals.

*Salvia Pitcheri*. Great Azure Sage. These plants, which are native to the Corpus Christi area, average about two feet in height and produce dark green, ovate leaves. The very dark blue flowers are borne in terminal spikes. Well adapted and very desirable.

*Salvia splendens*. Scarlet Sage. Plants of this salvia have red flowers and bright green, ovate leaves. Not as desirable as some of our native types.

Several species of salvia are being grown in the Lower Rio Grande Valley, three of which are native plants, and another being native to the Corpus Christi area.

*Sambucus Rehderana*. Mexican Elder. An elder similar to the American Elder in that it is a rather large shrub having bright green, divided leaves; however, the flat, greenish-white flower clusters are considerably larger. Both species produce small, black berries. (Caprifoliaceae.)

*Schaefferia cuneifolia*. Desert Yaupon. A low growing, native, evergreen shrub having numerous small branches. It produces small, light green cuneate leaves; and in the fall the plant is covered with numerous, small, red berries, which are crowded along the branches. (Celastraceae.)

*Severinia buxifolia*. Severinia. An evergreen shrub belonging to the citrus family that produces small, oblong, dark green leaves and purplish-black berries that add to its attractiveness. This plant is useful as a sheared hedge plant. (Rutaceae.)

*Sophora tomentosa*. Yellow Sophora. An evergreen shrub that has become established along the Gulf Coast region of the Lower Rio Grande Valley as an escape from Mexico. The plant has numerous upright, greenish yellow branches, silvery-gray, pinnate, velvety foliage, and produces a continuous bloom of yellow pea-shaped flowers in long, terminal spikes. By keeping the numerous seed pods clipped off, the plant can be kept in bloom throughout the year. (Leguminosae.)

*Stenolobium (Tecoma) stans* var. *latifolia*. Esperenza. Yellow Elder. A type having bright green foliage that shows a tendency to become chlorotic.





**Figure 40. Esperenza** (*Stenolobium stans* var. *latifolia*). A native flowering shrub that produces an abundance of attractive yellow flowers throughout the greater part of the year.

withe-like, deciduous plant about twenty inches high, bearing small, dark green, oval leaves and clusters of small white flowers, followed by small red berries.

*Symphoricarpos orbiculatus* var. *parviflorus*. Indian Currant. This is similar in appearance to the above but attains a height of four feet and produces light pink flowers which are followed by clusters of bright pink berries.

*Tecomeria (Tecoma) capensis*. Cape Honeysuckle, Dwarf Red Bignonia. A vigorous growing evergreen, semi-climbing shrub that produces dark green, serrated leaflets, and brilliant red, medium sized, tubular flowers. This plant is well adapted to conditions in the Lower Rio Grande Valley, and its continuous blooming habit makes it a very valuable ornamental. (Bignoniaceae.)

Plants produce a superabundance of seed pods (Figure 40). (Bignoniaceae.)

*Stenolobium (Tecoma) stans* var. *Smithii*. Esperenza, Yellow Elder. Plants similar to *S. stans* var. *Williamsonii*, but thrive in poorly drained soil.

*Stenolobium (Tecoma) stans* var. *Williamsonii*. Esperenza, Yellow Elder. A variety having dark green, feathery foliage; produces few seed pods. A native of Mexico.

Tall, evergreen, tender shrubs that produce bright green, pinnate leaves and a profusion of clear yellow, tubular flowers. These three varieties of this plant are growing in the Lower Rio Grande Valley.

*Symphoricarpos albus (racemosus)*. Snowberry, Wax-Berry. A small shrub up to five feet in height that produces small, oval leaves and numerous, loose racemes of pinkish white flowers during the summer, which are followed by clusters of white berries in the fall. This plant appears to be adapted to conditions in the Lower Rio Grande Valley, but produces relatively few berries. (Caprifoliaceae.)

*Symphoricarpos orbiculatus*. Coral-Berry. This is native to portions of Texas north and east of the Lower Rio Grande Valley. It is a

*Tetrapanax papyrifera*. Rice Paper Plant. A tropical, evergreen plant that produces large, rough, palmate leaves, borne in clusters at the top of upright trunks. During the fall and winter seasons, it produces woolly spikes of blossom buds that are quite attractive. (Araliaceae.)

*Thunbergia erecta*. Thunbergia. A low growing, tender, evergreen bush that produces small, glossy, dark green, ovate leaves and numerous, solitary, tubular purple flowers having yellow centers. Appears to be well adapted in semi-shaded locations. (Acanthaceae.)

*Thryallis glauca*. Thryallis. Yellow Plumbago. An evergreen bush that produces medium green, elliptic leaves and a profusion of yellow flowers which are borne in terminal spikes. This bush blooms almost continuously. (Malpighiaceae.)

*Ungnadia speciosa*. Mexican Buckeye. An upright, deciduous shrub which produces dark, wand-like branches and pinnate leaves. In the spring, it produces clusters of pink flowers which are followed by three lobed pods containing glossy, black "buckeyes" that remain on the plant, in the split pods, during the winter. Native to the Winter Garden area of Texas. (Sapindaceae.)

*Viburnum japonicum*. Japanese Viburnum. An attractive, evergreen shrub producing medium sized, dark green, rough, ovate leaves tinged with reddish brown along the edges. Small, fragrant, white flowers appear periodically throughout the year. Valuable chiefly as a foundation or foliage plant. Well adapted. (Caprifoliaceae.)

*Vitex Agnus-castus*. Mexican Lavender, Chaste Tree. Large shrub up to twenty feet in height producing deep green 3 to 5-foliolate leaves that are lighter underneath, and having an aromatic odor. Throughout the summer it is covered with numerous small spikes of purple, lavender-scented flowers. The Mexicans use the leaves and flowers as clothes-moth repellants. (Verbenaceae.)

*Vitex Negundo* var. *incisa*. Japanese Lavender, Cut-Leaf Chaste Tree. Large shrub having finely cut, light green leaves and no odor. Throughout the summer it produces clusters of light blue flowers which do not open until midmorning.

*Xanthoxylum Fagara*. Colima. A multiple branched, thorny, native shrub having small, dark green, pinnate leaves. During the winter the plant produces numerous, small, greenish-yellow flowers having an orange odor; these are followed by small, yellow-red capsules which also have a citrus odor. The name, "Una de Gato," is applied to this plant because of the numerous recurved thorns on the old wood. (Rutaceae.)

*Xylosma flexuosa*. Flacourtia, Xylosma, P. I. 113,564. An evergreen, spiny shrub that will attain a height of fifteen feet if it is not kept pruned. The plants produce small, wavy margined, ovate leaves, and numerous greenish flowers followed by a profusion of red berries. This U. S. D. A. introduction appears to be well adapted. The native species, *X. celastrum*, is similar in appearance to the cultivated species, and is recommended for use in the Lower Rio Grande Valley where it is available.

TABLE 4. SHRUBS

Name	Mature Size		Cold Hardi-ness	Adapta-bility	Desira-bility	Notes
	Height (feet)	Spread (feet)				
<i>Abelia grandiflora</i> (Abelia)-----	3-4	2-3	9	2	2	Unadapted
<i>Acacia amentacea</i> (Black Brush)-----	5-6	2	9	9	9	Attractive flowering native
<i>Acacia angustissima</i> (Prairie Guajillo)-----	3	3	9	9	5	Dwarf; drouth resistant
<i>Acacia Berlandieri</i> (Guajillo)-----	8-10	6-8	9	9	5	Drouth resistant, flowering native
<i>Acacia tortuosa*</i> (Huisachillo)-----	3-4	2-3	9	9	5	Small flowering native
<i>Allamanda nerifolia</i> (Yellow Bush Alamanda)-----	4	2	3	9	8	Glossy leaves; yellow flowers
<i>Allamanda violacea*</i> (Purple Allamanda)-----	4-6	2	3	8	5	Glossy leaves; rosy flowers
<i>Ardisia crispa</i> (Spiceberry)-----	2-4	2-3	6	2	2	Unadapted
<i>Artobotrys odoratissimus</i> (Cinnamon Jasmine)-----	6-10	4-5	9	9	6	Interesting climbing shrub
<i>Asclepias tuberosa</i> (Butterfly Weed)-----	1-2	1-2	6	9	4	Showy flower clusters
<i>Atriplex canthocarpa*</i> (Salt Bush)-----	2-4	2-4	9	9	3	Native, gray ground-cover
<i>Baccharis neglecta</i> (False Willow)-----	5-10	2-3	9	9	0	Willow-like native
<i>Beloperone guttata</i> (Shrimp Plant)-----	2-4	2-3	8	9	9	Interesting flowering shrub
<i>Berberis Swazeyii*</i> (Five Leaf Barberry)-----	2-4	2-4	9	6	4	Ornamental berries
<i>Berberis trifoliata*</i> (Agrito)-----	2-4	2-4	9	6	4	Ornamental berries
<i>Breynia nivosa</i> var. <i>roseo-pictus</i> (Calico Bush)-----	4-8	3	9	2	2	Showy colored foliage
<i>Buddleia asiatica</i> (White Butterfly Bush)-----	6-8	1-2	9	9	6	Upright growing
<i>Buddleia Davidi</i> (Purple Butterfly Bush)-----	6-8	2-3	9	0	5	Unadapted
<i>Buddleia Davidi</i> var. <i>superba*</i> (Rose Butterfly Bush)-----	6-8	2-3	9	0	0	Unadapted
<i>Buddleia globosa</i> (Orange Buterfly Bush)-----	6-8	2-3	9	0	0	Unadapted

<i>Buddleia madagascariensis</i> (Yellow Butterfly Bush)-----	8-20	5-6	9	9	7	Gray leaves; yellow flowers
<i>Buddleia</i> sp. (Blue Butterfly Bush)-----	6-8	2-3	9	5	5	Short lived
<i>Buxus microphylla</i> var. <i>japonica</i> * (Japanese Box)-----	5-6	4	9	9	9	Limited usefulness
<i>Buxus sempervirens</i> * (English Box)-----	10-15	10	9	9	9	Limited usefulness
<i>Buxus sempervirens</i> var. <i>suffruticosa</i> (Dwarf Box)-----	1-2	$\frac{2}{3}$	9	9	9	Limited usefulness
<i>Callicarpa americana</i> (French Mulberry)-----	3-4	2-3	6	9	9	Showy berries
<i>Calycanthus floridus</i> (Sweet Scented Shrub)-----	4-5	4-5	9	3	3	Lacks vigor
<i>Camellia japonica</i> (Camellia)-----	2-5	2-4	9	4	4	Occasionally successful
<i>Canna generalis</i> (Canna)-----	2-15	2-3	4	9	5	Strictly ordinary
<i>Cantua bicolor</i> * (Sacred Flower)-----	4-6	2-3	2	6	5	Flowering plants
<i>Cantua buxifolia</i> * (Magic Flower)-----	4-6	2-3	2	6	5	Flowering plants
<i>Carissa Arduina</i> var. <i>nana</i> (Dwarf Carissa)-----	2-4	1-2	5	8	3	Limited usefulness
<i>Carissa grandiflora</i> (Natal Plum)-----	3-10	3-4	5	9	9	Showy flowers and fruit
<i>Carissa spinarum</i> (Spiny Dwarf Carissa)-----	1-1 $\frac{1}{2}$	$\frac{1}{2}$ - $\frac{2}{3}$	3	5	2	Very dwarf
<i>Caryopteris incana</i> (Blue Beard)-----	2-4	1-1 $\frac{1}{2}$	9	3	0	Unadapted
<i>Castela texana</i> * (Amargosa)-----	2	1 $\frac{1}{2}$	9	9	2	Exceedingly thorny
<i>Celastrus scandens</i> (American Bittersweet)-----	6-10	6	9	0	0	Unadapted
<i>Celtis pallida</i> (Granjeno)-----	8-15	4-6	9	9	7	Attractive native; orange berries
<i>Cephalanthus occidentalis</i> (Button Bush)-----	5-10	2-4	9	9	5	Willow-like native
<i>Cerastostigma Willmottianum</i> (Dark Blue Plumbago)-----	2-4	2-3	4	6	6	Lacks vigor
<i>Cestrum aurantiacum</i> (Orange Jasmine)-----	3-5	3-4	6	9	7	Showy orange colored flowers

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Cold Hardiness: 9—Hardy; 5—fairly hardy; 1—tender.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.

TABLE 4. SHRUBS—Continued

Name	Mature Size		Cold Hardiness	Adaptability	Desirability	Notes
	Height (feet)	Spread (feet)				
<i>Cestrum diurnum</i> (Day Blooming Jasmine).....	5-10	2-3	6	9	6	Strong scented flowering shrubs
<i>Cestrum nocturnum</i> (Night Blooming Jasmine).....	3-5	2-3	6	9	6	Very strong scented
<i>Chaenomeles japonica</i> (Flowering Quince).....	4-6	3-5	9	5	6	Limited usefulness
<i>Chrysobalanus Icaco</i> (Coco Plum).....	10-30	4-10	1	3	3	Very tender
<i>Citharexylum Berlandieri</i> (Fruiting Zitherwood).....	5-15	4-5	8	8	9	Native; profusion of berries
<i>Citharexylum brachyanthum</i> (Flowering Zitherwood).....	5-15	4-5	8	8	5	Useful native hedge plant
<i>Clerodendrum foetidum</i> (Rosy Glory Bower).....	3-4	1-2	7	9	5	Vigorous flowering bush
<i>Clerodendrum fragrans</i> (Cologne Bush).....	3-5	3	7	9	8	Vigorous; showy flower clusters
<i>Clerodendrum Siphonanthus</i> (Turk's Turban).....	6-7	4-6	8	9	7	Interesting seed clusters
<i>Clerodendrum speciosissimum</i> (Red Clerodendron Bush).....	2-3	2-3	7	7	7	Showy red flowers
<i>Coccolobis uvifera</i> (Sea Grape).....	10-20	8-15	1	9	5	Useful for saline soils
<i>Colubrina texensis</i> (Hog Plum).....	2-5	2-5	9	9	3	Drouth resistant native
<i>Coprosma Baueri</i> (Coprosma).....	2-4	2-4	8	9	9	Showy bronzy foliage
<i>Cotoneaster horizontalis</i> (Rock Cotoneaster).....	2-3	2-4	9	0	2	Unadapted
<i>Cotoneaster pannosa</i> (Silver Cotoneaster).....	8-10	3-4	9	7	7	Gray foliage; showy berries
<i>Cotoneaster pannosa</i> var. <i>nana</i> (Dwarf Cotoneaster).....	1-1½	1	9	9	8	Attractive foliage
<i>Cotoneaster Parneyi</i> (Fruiting Cotoneaster).....	6-8	3-4	9	4	4	Profusion of berries
<i>Cotoneaster prostrata</i> (Prostrate Cotoneaster).....	8-12	8-10	9	9	7	Tortuous spreading shrub
<i>Coursetia axillaris</i> * (Baby Bonnets).....	2-3	2-3	7	9	5	Small pink and white flowers
<i>Cuphea hyssopifolia</i> (Elfín Herb).....	¾-1	½	8	8	8	Very dwarf; lavender flowers



<i>Cuphea lanceolata</i> (Firefly)-----	1-3	1-2	7	7	7	Showy red flowers
<i>Cuphea miniata</i> (Cigarette Plant)-----	3-5	3-4	9	9	9	Very showy flowering shrub
<i>Datura arborea</i> (White Angel Trumpet)-----	3-6	3-6	3	9	7	Profusion of showy flowers
<i>Deutzia scabra</i> (Deutzia)-----	3	3	9	0	0	Unadapted
<i>Diervilla hybrida</i> (Weigelia)-----	4-6	3-4	9	0	0	Unadapted
<i>Dombeya punctata</i> (Dombeya; Rose Bouquet)-----	5-10	2-3	3	9	9	Large, erect, flower clusters
<i>Duranta repens</i> (Lilac Flowered Golden Dew Drop)-----	8-18	3-6	9	9	9	Lilac flowers; golden berries
<i>Elaeagnus pungens</i> (Elaeagnus)-----	6-10	6-8	9	9	9	Attractive foliage
<i>Ephedra antisiphilitica</i> * (Joint Fir)-----	4	2	9	9	7	Interesting native
<i>Eranthemum nervosum</i> (Daedalacanthus)-----	2-4	2	3	8	9	Showy bright blue flowers
<i>Ervatamia coronaria</i> * (Pinwheel Jasmine)-----	3-5	3-4	6	9	9	Showy white flowers
<i>Ervatamia coronaria</i> var. <i>flore-pleno</i> (Crape Jasmine)-----	4-6	2-3	6	9	9	Showy white flowers
<i>Escallonia rosea</i> (Escallonia)-----	3-5	3-5	9	0	0	Unadapted
<i>Eugenia uniflora</i> (Surinum Cherry)-----	5-10	4	9	9	9	Glossy leaves; showy fruits
<i>Euonymus japonicus</i> (Japanese Burning Bush)-----	4-6	2	9	4	5	Limited usefulness
<i>Euphorbia heterophylla</i> (Mexican Poinsettia)-----	3-4	1-2	2	9	5	Weedy native
<i>Euphorbia pulcherrima</i> (Poinsettia)-----	6-10	2-6	2	9	9	Showy floral clusters
<i>Euonymus europaeus</i> (European Burning Bush)-----	6-8	4	9	3	2	Fails to produce berries
<i>Eysenhardtia texana</i> * (Rock Brush)-----	8-10	4-6	9	9	7	Flowering native
<i>Fallugia paradoxa</i> * (Apache Plume)-----	3-4	3-4	9	9	5	Resembles wild rose
<i>Fatshedera Lizei</i> (Fatshedera)-----	3-4	2	9	2	2	Unadapted

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Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.

TABLE 4. SHRUBS—Continued

Name	Mature Size		Cold Hardiness	Adaptability	Desirability	Notes
	Height (feet)	Spread (feet)				
<i>Feijoa Sellowiana</i> (Feijoa)-----	5-8	4-5	9	9	9	Gray foliage; rosy flowers
<i>Forestiera angustifolia</i> (Elbow Bush)-----	4	3	9	9	5	Dark green native bush
<i>Forsythia intermedia</i> var. <i>densiflora</i> (Goldenbells)-----	6-8	4-5	9	2	0	Unadapted
<i>Fuchsia hybrida</i> (Fuchsia)-----	1-3	1	5	2	2	Unadapted for out-of-doors
<i>Gardenia grandiflora</i> (Cape Jasmine)-----	4-6	3-4	9	5	5	Occasionally successful
<i>Genista hispanica</i> (Spanish Broom)-----	1-2	1	4	9	6	Dark green; yellow flowers
<i>Gyminda latifolia</i> * (Wild Boxwood)-----	3	1½	9	9	5	Drouth resistant native
<i>Hamelia erecta</i> (Scarlet Bush)-----	3-10	3-5	7	8	9	Reddish leaves; red flowers
<i>Hebe Andersonii</i> (Speedwell; Veronica)-----	4-10	4-5	9	0	0	Unadapted
<i>Hibiscus calycinus</i> (Yellow Flowered Hibiscus)-----	2-3	1-2	5	7	9	Very showy single yellow flowers
<i>Hibiscus cannabius</i> (Yellow Flowered Hibiscus)-----	2-3	1-2	5	3	9	Very showy double flowers
<i>Hibiscus cardiophyllus</i> (Silver Leaf Hibiscus)-----	1-2	½-¾	9	9	7	Dwarf; bright red flowers
<i>Hibiscus heterophyllus</i> (Australian Hibiscus)-----	2-4	1-2	5	7	7	Large white flowers
<i>Hibiscus mutabilis</i> (Cotton Rose)-----	6-8	3-4	4	9	7	Showy flowers
<i>Hibiscus Rosa-sinensis</i> (Chinese Hibiscus)-----	10-20	5-6	5	9	9	Profusion of showy flowers
<i>Hibiscus schizopetalus</i> (Fringed Hibiscus)-----	2-4	1-3	5	8	8	Deeply cut, fringed flowers
<i>Hibiscus syriacus</i> (Althea)-----	8-15	2	9	9	6	Ordinary flowering shrub
<i>Holmskioldia sanguinea</i> (Chinese Hat Plant)-----	6-20	4-6	6	9	9	Very attractive flowering shrub
<i>Hydrangea macrophylla</i> (Hydrangea)-----	2-3	2-3	2	5	5	Occasionally successful
<i>Ilex vomatoria</i> (Yaupon)-----	4-10	3-5	9	5	5	Dwarf; showy berries

<i>Ipomoea crassicaulis</i> (Texas Bush Morning Glory)-----	6-10	4-5	6	9	9	Profusion of showy flowers
<i>Ixora fulgens</i> (Indian Flame Bush)-----	3-6	3-5	6	9	9	Showy red flowers
<i>Jasminum floridum</i> (Florida Jasmine)-----	3-6	3-4	9	9	9	Glossy; small yellow flowers
<i>Jasminum grandiflorum*</i> (Spanish Jasmine)-----	2-3	2-3	9	9	7	Small white flowers
<i>Jasminum humile</i> (Italian Jasmine)-----	5-7	3-4	9	7	6	Few flowers
<i>Jasminum primulinum</i> (Primrose Jasmine)-----	3-5	3-5	9	9	7	Inferior to <i>J. floridum</i>
<i>Jasminum Sambac</i> (Arabian Jasmine)-----	3-5	3-4	8	8	8	Fragrant, double white flowers
<i>Jasminum Sambac</i> (Maid of Orleans Jasmine)-----	1-2	1-2	5	9	7	Trailing type; semi-double flowers
<i>Jatropha Curcas</i> (Physic Nut)-----	6-10	4-5	5	9	9	Showy foliage, flowers and fruit
<i>Jatropha spathulata*</i> (Leather Weed)-----	2	2	9	9	5	Thick, glossy leaves
<i>Juniperus chinensis Pfitzeriana*</i> (Pfitzer's Juniper)-----	6-8	6-8	9	9	9	Excellent dwarf type
<i>Juniperus horizontalis</i> var. <i>Douglasii</i> (Waukegan Horizontal; Creeping Juniper)-----	6-8	8-12	9	9	9	Semi-dwarf, spreading type
<i>Karwinskia Humboltiana</i> (Coyotillo)-----	3-4	2	9	9	5	Attractive native bush
<i>Kerria japonica</i> (Globe Flower)-----	3-6	3-4	9	3	3	Lacks vigor
<i>Koeberlinia spinosa*</i> (All Thorn)-----	6-10	4-5	9	9	2	Extremely thorny
<i>Kolkwitzia amabilis</i> (Beauty Bush)-----	3-6	3-4	9	2	0	Unadapted
<i>Lagerstroemia indica</i> (Common Crape Myrtle)-----	6-8	3-5	9	9	8	Attractive flowers in season
<i>Lagerstroemia speciosa*</i> (Queen Crape Myrtle)-----	8-20	5-7	9	8	8	Very large flower clusters
<i>Lantana camara</i> (Lantana)-----	4-6	4-5	9	9	9	Showy flowers
<i>Lantana camara</i> var. <i>horrida</i> (Wild Lantana)-----	4-6	4-5	9	9	9	Showy flowered ground-cover
<i>Lantana involucrata</i> (Wild Lantana)-----	2	1-2	9	9	9	Small white flowers

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 Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.

TABLE 4. SHRUBS—Continued

Name	Mature Size		Cold Hardi-ness	Adapta-bility	Desira-bility	Notes
	Height (feet)	Spread (feet)				
<i>Lantana macropoda</i> (Long Stem Lantana).....	3- 4	1- 2	9	9	9	Lavender and white flowers
<i>Lantana Sellowiana</i> (Weeping Lantana).....	2- 3	2- 3	9	9	9	Profusion of lavender flowers
<i>Larrea tridentata</i> (Creosote Bush).....	3	2½	9	9	8	Myrtle-like foliage
<i>Lawsonia inermis</i> (Henna; Reseda).....	4- 6	4- 5	9	9	7	Interesting flowering shrub
<i>Leonotis Leonurus</i> (Lion's Tail).....	3- 5	4- 5	9	7	4	Weak-growing plants
<i>Leucaphyllum frutescens</i> (Cenizo).....	3-10	3- 5	9	9	9	Silvery foliage; lavender flowers
<i>Ligustrum amurense</i> (Amur River Privet).....	15-20	4- 6	9	9	5	Useful hedge plant
<i>Ligustrum lucidum</i> var. <i>compactum</i> (Glossy Privet).....	15-20	4- 5	9	9	7	Glossy compact foliage
<i>Lippia Berlandieri</i> (Red Brush).....	2- 4	2	9	9	9	Attractive rosy flowers
<i>Lippia ligustrina</i> (White Brush; Bee Brush).....	2- 4	2	9	9	9	Fine foliage; white flowers
<i>Lycium</i> sp. (Lycium).....	10-15	3- 5	9	9	7	Dense foliage; red berries
<i>Malpighia corigera</i> (Holly Malpighia).....	4- 6	3- 4	1	6	5	Very attractive but tender
<i>Malpighia glabra</i> (Barbados Cherry).....	5- 6	4- 5	9	8	8	Glossy foliage; bright fruits
<i>Malpighia glabra</i> (Wild Barbados Cherry).....	6-10	4- 5	9	9	9	Native Barbados Cherry
<i>Malvaviscus Drummondii</i> (Wild Turk's Cap).....	2- 3	2	7	9	9	Semi-dwarf; showy flowers
<i>Malvaviscus grandiflorus</i> (Turk's Cap).....	5- 8	4- 5	7	9	9	Vigorous; profusion of flowers
<i>Maytenus phyllanthoides</i> * (Leather Leaf).....	3	2	9	9	6	Thick leafed native
<i>Michelia fuscata</i> * (Banana Shrub).....	10-15	6- 8	3	7	7	Ornamental foliage
<i>Mortonia Greggii</i> * (Mortonia).....	3	2	9	9	7	Dwarf native; fine leaves
<i>Murraea paniculata</i> (Chalcas).....	3- 6	3- 4	1	7	3	Very tender

<i>Myrica cerifera</i> * (Wax Myrtle).....	4-5	2-3	9	9	5	Strictly ordinary; requires moisture
<i>Myrtus communis</i> var. <i>compacta</i> * (Dwarf Myrtle).....	2-3	2-3	9	9	7	Limited usefulness
<i>Myrtus communis</i> var. <i>microphylla</i> * (Narrow Leaf Myrtle).....	4-6	2-3	9	9	7	Limited usefulness
<i>Myrtus communis</i> var. <i>romana</i> (True Myrtle).....	5-10	2-3	9	9	7	Limited usefulness
<i>Nandina domestica</i> (Nandina).....	3-6	2-2½	9	9	9	Attractive foliage; showy berries
<i>Nerium oleander</i> (Oleander).....	10-15	3-5	9	9	7	Strictly ordinary
<i>Pachystachys coccinea</i> (Scarlet Jacobina).....	3-4	1-2	4	9	9	Ornamental foliage and flowers
<i>Pachystachys velutina</i> * (Rose Justicia).....	2	1-3	6	7	5	Dusty-rose colored flowers
<i>Philadelphus coronarius</i> (Mock Orange).....	6-10	3-4	9	2	0	Unadapted
<i>Photinia serrulata</i> (Low Photinia).....	10-15	3	9	9	9	Attractive foliage
<i>Phytolacca americana</i> (Pokeberry).....	5-6	2-3	3	9	5	Weedy plant; showy berries
<i>Pisonia aculeata</i> (Wild Bougainvillea).....	6-10	3-5	4	9	6	Glossy foliage; very thorny
<i>Pithecolobium brevifolium</i> * (Gulf Coast Guajillo).....	10	6	9	9	7	Droith resistant, flowering native
<i>Pittosporum daphniphyloides</i> (Daphne Leaf Pittosporum).....	10-15	6-8	9	9	7	Inferior to <i>P. Tobira</i>
<i>Pittosporum phillyraeoides</i> (Narrow Leaf Pittosporum).....	3-4	3-4	9	9	7	Narrow, dull green leaves
<i>Pittosporum Tobira</i> (Japanese Pittosporum).....	10-20	10-20	9	9	9	Dense, glossy leafed shrub
<i>Pittosporum Tobira</i> var. <i>variegata</i> (Variegated Pittosporum).....	6-7	3-4	9	9	9	Limited usefulness
<i>Plumbago capensis</i> (Blue Plumbago).....	5-10	5-6	6	9	9	Sky-blue flowers; vigorous
<i>Plumbago indica</i> (Pink; Red Plumbago).....	5-10	1-2	6	5	5	Lacks vigor
<i>Plumbago scandens</i> (White Plumbago).....	5-15	3-6	6	9	9	Light green; white flowers
<i>Plumaria alba</i> (White flowered Frangipani).....	10-15	2-5	3	9	9	Showy flowering tropical plant

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TABLE 4. SHRUBS—Continued

Name	Mature Size		Cold Hardiness	Adaptability	Desirability	Notes
	Height (feet)	Spread (feet)				
<i>Poinciana Gilliesii</i> (Bird of Paradise Bush)-----	3-4	2-3	9	9	6	Yellow flowered native
<i>Poinciana pulcherrima</i> (Flower Fence)-----	8-10	2-4	9	9	9	Showy red-yellow flowers
<i>Polyscias Balfouriana</i> (Dwarf Aralia)-----	2-3	1	4	7	5	Glossy foliage plant; variegated
<i>Polyscias Guilfoylei*</i> (Tall Aralia)-----	4-6	1	4	8	8	Variegated glossy foliage
<i>Portieria angustifolia</i> (Guayacan)-----	10-15	4-6	9	9	7	Narrow leafed tortuous native
<i>Prosopis cinerascens*</i> (Screw Bean)-----	1	1/2-3/4	9	9	7	Very dwarf Mesquite
<i>Punica granatum</i> (Fruiting Pomegranate)-----	6-8	3-4	9	7	5	Strictly ordinary
<i>Punica granatum</i> var. <i>Legrellei</i> (Flowering Pomegranate)-----	3-5	1-2	9	9	7	Showy double flowers
<i>Punica granatum</i> var. <i>nana</i> (Dwarf Pomegranate)-----	1/2-3/8	1/8-1/2	9	9	9	Attractive dwarf plant
<i>Pyracantha crenato-serrata</i> (Spreading Firethorn)-----	5-15	4-5	9	9	8	Dense; bright berries
<i>Pyracantha crenulata</i> (Upright Firethorn)-----	10-15	4-5	9	9	9	Upright; profusion of berries
<i>Randia mitis</i> (Palo de Pasto)-----	5-10	3-6	9	9	7	Thorny native shrub
<i>Reinwardtia indica</i> (Gold Eagle)-----	2-3	2-3	8	9	9	Showy flowering bush
<i>Rhododendron indica</i> (Azalea)-----	2-4	2-3	7	1	3	Occasionally successful
<i>Robinia hispida</i> (Rose Acacia)-----	3-4	3	9	0	0	Unadapted
<i>Rosa</i> sp. (Rose)-----	3-5	2	9	7	7	Showy flowers; unattractive plants
<i>Salvia ballotaeflora</i> (Shrubby Blue Sage)-----	3-4	2-3	9	9	9	Small sky-blue flowers
<i>Salvia coccinea</i> (Texas Red Sage)-----	3/8-2	1/8-3/8	9	9	7	Weedy; bright red flowers
<i>Salvia farinacea</i> (Mealy Blue Sage)-----	2-3	1/8-3/8	9	9	7	Grayish; dusty-blue flowers
<i>Salvia leucantha</i> (Mexican Purple Sage)-----	3/8-2	1/8-3/8	9	9	9	Deep blue velvety flowers

<i>Salvia Pitcheri</i> (Great Azure Sage).....	2-3	1/3-2/3	9	9	7	Deep blue flowers
<i>Salvia splendens</i> (Scarlet Sage).....	2-2	1/3-2/3	9	9	7	Strictly ordinary
<i>Sambucus Rehderana</i> (Mexican Elder).....	8	4-6	5	9	5	Weedy; large flower clusters
<i>Schaefferia cuneifolia</i> (Desert Yaupon).....	2-3	2-3	9	9	9	Dwarf berry plant
<i>Severinia buxifolia</i> (Severinia).....	4-6	3-4	5	9	7	Limited usefulness
<i>Sophora tomentosa</i> (Yellow Sophora).....	5-8	4-5	9	9	7	Gray foliage; yellow flowers
<i>Spiraea Billiardia</i> (Pink Spiraea or Bridal-Wreath).....	4-5	3-4	9	3	0	Unadapted
<i>Spiraea Bumalda</i> var. <i>Froebeli</i> (Red Spiraea).....	4-5	3-4	9	3	0	Unadapted
<i>Spiraea Vanhouttei</i> (White Spiraea or Bridal-Wreath).....	4-5	3-4	9	3	3	Occasionally successful
<i>Stenolobium (Tecoma) stans</i> var. <i>latifolia</i> (Esperenza).....	6-18	3-4	6	9	9	Showy yellow flowers
<i>Symphoricarpos albus</i> (Snowberry).....	4-5	4-5	9	6	6	Interesting berry plant
<i>Symphoricarpos orbiculatus</i> (Coralberry).....	2-3	1-2	9	9	6	Many small red berries
<i>Symphoricarpos orbiculatus</i> var. <i>parviflorus</i> * (Indian Currant).....	4	2-3	9	9	6	Many small red berries
<i>Syringa vulgaris</i> (Common Lilac).....	10-20	4-5	9	0	0	Unadapted
<i>Tetrapanax papyriferum</i> (Rice Paper Plant).....	6-10	2-3	7	9	9	Showy foliage plant
<i>Tecomera capensis</i> (Cape Honeysuckle).....	4-8	4-5	6	9	9	Showy scarlet flowers
<i>Thea sinensis</i> (Tea Plant).....	4-6	4	---	0	0	Unadapted
<i>Thryallis glauca</i> .....	3-5	3-4	8	9	9	Continuous profusion of flowers
<i>Thunbergia erecta</i> (Thunbergia Bush).....	3-4	3-4	4	7	8	Showy dark blue flowers
<i>Tibouchina glandulosa</i> (Princess Flower).....	4-6	3-4	5	0	0	Unadapted
<i>Ungnadia speciosa</i> (Mexican Buckeye).....	5-10	3-5	9	9	7	Deciduous; showy buckeyes

\*Not grown on the Experiment Station.

Cold Hardiness: 9—Hardy; 5—fairly hardy; 1—tender.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.

TABLE 4. SHRUBS—Continued

Name	Mature Size		Cold Hardi-ness	Adapta-bility	Desira-bility	Notes
	Height (feet)	Spread (feet)				
<i>Vitex-Agnus-castus</i> * (Chaste Tree)-----	6-20	4- 5	9	9	9	Scented foliage; deep blue flowers
<i>Vitex-Negundo</i> var. <i>incisa</i> (Cut Leaf Chaste Tree)-----	10-15	4- 5	9	9	9	Fine foliage; light blue flowers
<i>Viburnum japonicum</i> (Japanese Viburnum)-----	5- 6	2- 3	9	9	7	Dark green foliage
<i>Xanthoxylum Fagara</i> (Colima)-----	6- 8	5	9	9	5	Very thorny native
<i>Xylosma flexuosa</i> (Fiacourtia)-----	5-20	5- 6	9	9	9	Thorny; showy berries

\*Not grown on the Experiment Station.

Cold Hardiness: 9—Hardy; 5—fairly hardy; 1—tender.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Desirability: 9—Desirable; 5—fairly desirable; 1—undesirable.

## VINES

This useful group of ornamental plants should be more extensively used in the Valley. Some of the showier tropicals, such as Bougainvilleas, Flame Vine, Orange Glow, Rangoon Creeper, Paradise Vine and the Thunbergia species are worthy of individual trellises and may be used to hide unsightly buildings, fences and ugly blots on the landscape. Less showy types such as Caracol, Air Potato and Passion Flower may be used on trellises to shade windows and porches, English Ivy, Yerba del Buey and Climbing Fig make excellent ground cover on areas where it is difficult to maintain attractive sod covers. They also make useful covers for brick work or masonry.

## Species

*Abrus precatorius*. Rosary Pea. A dainty vine having finely cut, mimosa-like foliage. It produces small purplish, pea-shaped flowers which are followed by flat seed pods containing bright red beans, each bearing a conspicuous "eye." (Leguminosae.)

*Allamanda cathartica* var. *Hendersoni*. Vine Allamanda. This plant produces glossy lanceolate leaves and clear yellow trumpet-shaped flowers. (Apocynaceae.)

*Allamanda Williamsii*.\* William's Allamanda. This bicolored variety produces yellow trumpet-shaped flowers which are splotched with brownish purple. Allamandas are evergreen vines or semi-climbing shrubs with glossy lanceolate leaves.

*Anredera vesceria*. Texas Madeira. A rapid growing twining native vine that produces small tubercles in the axils of the leaves by which the plant can be propagated. The leaves are ovate (1-3 inches long), subcordate and short petioled. It produces long, slender racemes of fragrant white flowers. Blooms in late summer. (Baseliaceae.)

*Antigonon leptopus*. Pink Queen's Wreath, Corona Vine, Mexican Love Vine. A variety having coral pink flowers, which are borne in great profusion. Very popular. (Polygonaceae.)

*Antigonon leptopus* var. *albus*. White Queen's Wreath. This vine produces blossoms that are white in color and not quite so abundant as the pink variety.

Evergreen, rapid growing vines having tuberous roots. They produce rather large bright green, heart-shaped leaves and showy racemes of small flowers throughout the summer and fall seasons that attract bees and butterflies.

*Aristolochia brasiliensis* var. *macrophylla*.\* Fighting Cock. A perennial tropical vine that produces large, rounded-ovate leaves and very large yellow and brown peculiarly shaped flowers which have an unpleasant carrion-like odor. A most interesting fly catching, carnivorous plant. (Aristolochiaceae.)

*Aristolochia grandiflora*. Pelican-Flower. A Dutchman's Pipe Vine that produces cordate leaves and large, peculiarly shaped flowers of brown and yellow, veined with purple; and ornamental "parasol" seed capsules. Well adapted.

\*Not grown on the Experiment Station.

*Aristolochia longiflora*. Swan Flower. A member of the Dutchman's Pipe Vine group that produces deep, tuberous roots, and relatively few lanceolate, grass-like leaves which are green above and reddish brown underneath. The large swan-shaped flowers are brown and yellow with dark veining and spotting. Native to Southwest Texas.

*Aristolochia tomentosa*.\* Woolly Pipe-Vine. A native Texas vine that has become a commercial variety having woolly, heart shaped leaves and small brownish yellow "pipes" followed by conspicuous seed capsules.

There are several species of Dutchman's Pipe adapted to conditions in the Lower Rio Grande Valley, several of the small flowered varieties being native to Texas.

*Asparagus asparagoides (medeoloides)*. Smilax. A tuberous rooted vine usually having a few thorns. The florist's Smilax is a tall, branching vine having clusters of tuberous roots. It produces small, stiff, dark green, glossy leaves and greenish-white flowers followed by small, purplish-black berries. It is not to be confused with *Smilax officinalis*, an economic plant, one form of which yields sarsaparilla. Two species of *smilax*, *S. laurifolia* (Laurel leaf), and *S. pseudochina* (Chinese) are native to Texas. (Liliaceae.)

*Asparagus falcatus*.\* Sickle leafed Asparagus Vine. A large climbing plant having dark green, linear leaves and masses of fragrant white flowers at intervals. The flowers are followed by brown berries.

*Asparagus plumosus*. Asparagus Lace Fern. An evergreen fern-vine that is well adapted to conditions in this region. Periodically the fern leaves are edged with tiny, fragrant white flowers which are followed by succulent blue-black berries. Extensively grown by commercial florists.

*Bignonia violacea*. Purple Bignonia. A vigorous vine having glossy dark green, lanceolate, bifoliate, evergreen leaves and large purple trumpet-shaped flowers. Hardy to cold and very desirable. (Bignoniaceae.)

*Bougainvillea glabra* var. *Sanderiana*. Purple Bougainvillea. The common variety having glossy ovate leaves and purple floral bracts and dense bushy vines (Figure 41). Responds well to pruning. *B. glabra* var. *Cypheri* is more bush-like, and produces much larger floral bracts. (Nyctaginaceae.)

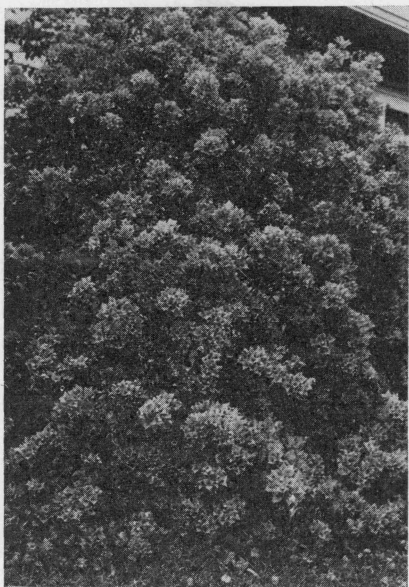


Figure 41. Purple Bougainvillea (*Bougainvillea glabra* var. *Sanderiana*). A very showy thorny, evergreen vine that gives vivid coloring to the landscape.

\*Not grown on the Experiment Station.



*Bougainvillea spectabilis*. Crimson Lake Bougainvillea. A variety having red floral bracts and velvet leaves.

*Bougainvillea spectabilis* var. *lateritia*.\* Brick-Red Bougainvillea. A variety having deep brick-dust (rust) colored floral bracts.

*Bougainvillea spectabilis* var. *rosa speciosa*. Rose Bougainvillea. A variety having deep pink to rose colored floral bracts. Well adapted and very attractive.

*Bougainvillea spectabilis* var. *praetorius*. Tangerine Bougainvillea. A variety having tangerine colored floral bracts. Well adapted and very desirable. Both species have sharp thorns.

*Boussingaltea baselloides*. Gulf Madeira Vine. A native vine that is similar to the cultivated species, except that it has shorter and more crowded spikes of small, fragrant, white flowers. It produces dark green, lanceolate leaves. This species blooms later in the season than the cultivated type. (Baseliaceae.)

*Calonyction aculeatum* (*Ipomoea Bona-Nox*). White Flowered Moon-Vine. A rapid growing perennial vine that produces large, dark green ovate leaves, large trumpet-shaped, fragrant white flowers that open at night, and seed capsules containing several small, dark seed. Well adapted. Dies down in winter. (Convolvulaceae.)

*Calonyction aculeatum*. Blue Flowered Moon-Vine. This vine produces thin, ovate-leaves and large, sky-blue flowers. Not as well adapted as the White flowered type.

*Campsis* (*Tecoma*, *Bignonia*) *chinensis* (*grandiflora*). Chinese Trumpet-Creeper. A deciduous vine having a woody stem that climbs by means of disc-like attachments. It produces dull green, pinnate leaves, and long racemes of large light orange colored trumpet shaped flowers which are followed by a few long seed pods. A very desirable species. Propagated by grafting. (Bignoniaceae.)

*Campsis* (*Tecoma*, *Bignonia*) *radicans*. Trumpet-Creeper. A woody, deciduous bignonia vine that is native to the Rio Grande Valley. It climbs by means of disc-like attachments, and is adapted for use on brick or masonry walls. This vine produces dull green, pinnate foliage, and during the summer, a profusion of small, orange-red trumpet-shaped flowers on the tips of the branches. The flowers are followed by long pods filled with winged seed.

*Cardiospermum Corindum*. Balloon Vine. A hardy native vine which produces three-foliolate leaves, numerous small white flowers in the fall, followed by balloon-like capsules (1 inch in diameter) which contain a few black seeds bearing a heart-shaped white spot. This is the perennial species that is recommended for use as an ornamental. (Sapindaceae.)

*Cissus arborea*.\* Pepper Vine. A rapid growing native vine, having a rosy tint on the new growth, that produces pinnate leaves, inconspicuous yellow flowers and clusters of red berries. Will make excellent growth in almost any location. (Vitaceae.)

*Cissus incisa*. Cow Itch, Yerba del Buey. A native evergreen vine that belongs to the grape family. It produces thick, wavy edged, ivy-like leaves,

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\*Not grown on the Experiment Station.

inconspicuous greenish flowers and a profusion of succulent bluish-black berries. Excellent wall cover as a substitute for ivy. Rapid growing; gives off an unpleasant odor when crushed. (Vitaceae.)

*Clematis Armandi*. Armand's Clematis. A variety having deep green, heavy veined ovate leaves, and white flowers. Appears to be well adapted. (Ranunculaceae.)

*Clematis crispa*.\* Curly (Blue) Clematis. A variety having pinnate leaves; solitary purple to whitish flowers (1 inch long) with crisp recurved sepals and hairy fruits.

*Clematis Drummondii*. Texas Virgin's-Bower, Old Man's Beard. A native vine having perennial roots; small bright green, notched leaflets; numerous small, cream colored flowers; and plumed, silky white seed.

*Clematis paniculata*. Japanese Clematis. A vigorous growing variety having dark green, pinnate leaves (1"-4" long); numerous fragrant white flowers and plumose fruits.

*Clematis Simsii (Pitcheri)*.\* Red Clematis. A native to the river bottoms of South Texas having small, bright green, notched leaves; numerous small flowers having reddish sepals; red stems; and masses of plumose fruits.

*Clematis texensis (coccinea)*.\* Scarlet Clematis. A variety having pinnate leaves and scarlet flowers which are produced during the summer. Native to East Texas.

*Clerodendrum speciosum*. Red Clerodendrum. A variety producing ovate leaves and racemes of rosy-red flowers which fade to rosy-rust, and remain on the vine for some time. Very desirable. (Verbenaceae.)

*Clerodendrum Thomasonae (Balfouri)*. Thompson's Glory Bower, Bag Flower. This perennial clerodendrum has dark green stems, medium sized, dark green ovate leaves and showy racemes of bright red flowers enclosed in a pure white, bag-like calyx. Both are evergreen.

*Clitoria ternata*. Snail Vine, Texas Butterfly Pea, Mexican Pea. A small vine (5 to 6 feet high) having a perennial root. It produces dark green, pinnate leaves and large, deep blue, pea-shaped flowers which are followed by tan seed pods. Well adapted and very attractive. (Leguminosae.)

*Clytostoma callistegioides (Bignonia speciosa)* Painted Trumpet. An evergreen, climbing bignonia having lustrous, oblong, bi-foliolate leaves (2"-3" long) and tubular, lavender-streaked flowers with spreading lobes. Well adapted and quite desirable. (Bignoniaceae.)

*Cocculus*. Both species of *Cocculus* that are native to Texas have perennial roots, and produce the typical, twisted seeds within the fruits. *C. Carolinus* (Coralvine) produces wire-like, dark green stems, ovate leaves, small clusters of yellowish flowers in summer, and numerous bright red berries that remain on the vine for considerable periods of time *C. diversifolius* (Snail-Seed) differs from the former in that it produces smaller, deeply lobed leaves and a few large, green, succulent fruits. (Menispermaceae.)

*Combretum grandiflorum*. Combretum. P. I. 72993. An evergreen vine that produces medium to dark green, ovate leaves and showy panicles of orange-red flowers. Well adapted and very attractive. (Combretaceae.)

*Convolvulus japonicus*. Asiatic Double Morning-Glory, California Rose.

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\*Not grown on the Experiment Station.

A spreading, vine-like plant having perennial roots. It produces dull green long-ovate leaves, and double pink morning-glory flowers. (Convolvulaceae.)

*Cryptostegia grandiflora*. Malay Rubber Vine. An evergreen vine that produces glossy, deep green, lanceolate leaves and tubular lavender flowers with deeper markings. This vine contains latex. Sometimes called Purple Allamanda or Blue Allamanda. (Asclepiadaceae.)

*Cryptostegia madagascariensis*. Madagascar Rubber Vine. An evergreen vine having bluish-green, lanceolate leaves. During the summer it produces clustered, purplish-white, funnel-shaped flowers. Sometimes called Blue Allamanda. This vine contains latex. Well adapted and quite ornamental.

*Cucurbita foetidissima*.\* Wild Gourd. A native vine that arises from a perennial root. It produces long, creeping stems, large, dull green leaves, small, yellow cucurbit flowers and numerous, strong scented, pale yellow gourds. Drouth resistant. (Cucurbitaceae.)

*Cydistia aequinoctialis*. Purple Bignonia, Equinox Flower. An evergreen vine having bright green, lanceolate, bi-foliolate leaves that have the odor of garlic. The tubular flowers are lavender with white throats. Well adapted to the Valley. (Bignoniaceae.)

*Derris scandens*. Derris. An introduction from the U. S. D. A. A rapid growing graceful vine that produces glossy, dark green, pinnate leaves and a profusion of pale pink flowers in open clusters which are followed by small tan seed pods. Well adapted. (Leguminosae.)

*Dioscorea Batatas*. Cinnamon Vine, Chinese Yam. A small tuberous rooted annual vine having a perennial root. It produces dark green, wedge-shaped leaves and very small clusters of cinnamon scented white flowers which are followed by small, oblong, tan tubers. Dies down in winter. Well adapted. (Dioscoreaceae.)

*Dioscorea bulbifera*. Air Potato. A vigorous growing, dark green, annual vine that produces large, glossy, heart-shaped leaves that are beautifully veined. The greenish flower tassels are inconspicuous and are followed by potato-like fruits that cling to the vine for a considerable period of time. Well adapted.

*Distictis lactiflora (cinera)*.\* Twice-Dotted Vine. A tall growing bignonia vine that produces grayish green, lanceolate leaflets, and numerous purplish, tubular flowers (2-3½ inches long). Well adapted. (Bignoniaceae.)

*Doxantha (Bignonia) unguis-cati*. Yellow Bignonia, Catsclaw Vine. A native, evergreen vine that climbs by means of disc-like attachments of the stems. It has small, dark green, bi-foliolate leaves and tubular yellow flowers. (Bignoniaceae.)

*Ficus pumila (repens)*. Climbing Fig. An evergreen, creeping vine well adapted for use on brick or stucco walls. The vines have small, glossy, dark green, ovate leaves, and grow more rapidly than English Ivy. Well adapted, and quite popular. (Moraceae.)

*Gelsemium sempervirens*. Carolina Yellow Jasmine. A slow growing evergreen vine that produces small, dark green, glossy, lanceolate leaves (1-3 inches long). During the spring, it bears small clusters of fragrant, bright

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\*Not grown on the Experiment Station.

yellow flowers. Native to East Texas, and well adapted to Valley conditions. Not widely used. (Loganiaceae.)

*Hedera Helix*. English Ivy. A very slow growing, evergreen ivy that produces dark green, veined, triangular leaves, inconspicuous flowers and a few globular, black fruits. Variegated English Ivy (*H. Helix* var. *marginata*) is similar to the former variety, except that the leaves are irregularly mottled with ivory white. (Araliaceae.)

*Ibervillea Lindheimeri*. Wild Balsam Apple. This heavy underground native tuber produces delicate, trailing, bright green stems, bright green, deeply cut and notched leaves; small, yellow, cucurbit flowers and small (1-inch long) fruits having the appearance of tiny green watermelons, until they turn bright red in late summer. (Cucurbitaceae.)

*Ipomoea cairica*. Mexican Lavender Morning-Glory. Probably an escape from Mexico. This vigorous growing vine produces bright green, digitate, evergreen foliage, large lavender morning-glory flowers and few to no seed pods. Roots by layering, and may become a weed pest. (Convolvulaceae.)

*Ipomoea hirsutula*. Mexican Sky Blue Morning-Glory. A native annual vine having large, perennial tubers. The small, spreading plants produce three-lobed leaves, small, sky blue morning-glories and no seed.

*Ipomoea Leari*. Blue Dawn Flower. A native, perennial vine that propagates only by layering. It produces heart-shaped dark green, lobed leaves; large, bright blue morning-glories and no seed. Well adapted. Probably an escape from Mexico.

*Ipomoea Pes-Caprae*. Lavender Goatfoot (Beach) Morning-Glory. This is a species of Beach Morning-Glory that is found growing along the Gulf Coast. It produces large, bright green, thick, ovate leaves; heavy prostrate stems and branches; and large morning-glory flowers. No seed have been observed; the plant seeming to propagate from perennial roots. This species produces medium to large size lavender flowers.

*Ipomoea purpurea*. Common (Japanese) Morning-Glory. This species represents the commonly grown, commercial morning-glory vines. The plant is an annual that produces dark green, lobed, ovate leaves; vari-colored flowers, and small, top-shaped seed capsules. Well adapted and least objectionable of the morning-glory vines.

*Ipomoea setosa* var. *Pavoni*. Brazilian Purple Morning-Glory. A species that was probably introduced from Mexico. This vine has perennial roots; produces large, dark green, deeply lobed leaves; large, deep purple flowers borne on bristly stems; and very prickly seed capsules. Well adapted.

*Ipomoea stolonifera*. Yellow Beach Morning-Glory. This species of Beach morning-glory produces thick, bright green, ovate leaves, heavy prostrate stems and large, yellowish flowers.

*Ipomoea trichocarpa*. Small Pink Morning-Glory. A native annual vine that comes from a perennial root. It produces small, medium green, three lobed leaves, and medium to small, rose colored flowers having darker colored centers. May become a weed pest.

*Ipomoea tricolor*. Tricolor (Heavenly Blue) Morning-Glory. A perennial vine having medium green, slightly lobed leaves and large, sky blue flowers. Produces seed. Produces few flowers in this region and is not well adapted.



*Ipomoea trifida* var. *Torreyana*. Common Bluish Morning-Glory. A small native vine having perennial roots. It produces small, ovate, medium green leaves; bluish white flowers having recurved edges and purple centers; and numerous seed capsules. May become a weed pest.

Morning-Glory and Moon Vines are well adapted to conditions in the lower Rio Grande Valley, and several species of ornamental value are native to this region. Others are noxious weed pests.

*Jasminum dichotomum*.\* Gold Coast Jasmine. A dark green, leathery-leaved jasmine that produces ovate leaves and few flowered cymes of small white flowers (Figure 42). Well adapted and rather popular. (Oleaceae.)

*Jasminum gracillimum*. Slender (Pin Wheel) Jasmine. A dense evergreen, climbing vine that produces dark green, glossy ovate leaves (2 inches long), and slightly fragrant, "pin wheel," white flowers, which are borne gracefully along the arched branches. Well adapted and quite desirable.

*Jasminum pubescens*.\* Pubescens Jasmine. A dense, evergreen, climbing vine having pubescent, dark green, ovate leaves and a profusion of small clusters of white flowers (1 inch in diameter).

*Lonicera japonica* var. *Halliana*. Trumpet (Coral) Honeysuckle. This slow growing vine produces leaves somewhat larger than those of the Japanese variety, and the showy, coral red and yellow tubular flowers are somewhat larger. Weak growing. (Caprifoliaceae.)

*Lonicera sempervirens*. Japanese Honeysuckle. A dense, evergreen vine having dark green, oblong leaves that produces clusters of very fragrant yellow and white flowers. Rapid growing and well adapted.

*Lycium carolinianum* var. *quadrifidum*. Gulf Coast Matrimony Vine. A semi-climbing, vine-like, native shrub having dark green, divided leaves and clusters of small deep purple or white flowers followed by clusters of bright red fruits ( $\frac{1}{4}$ -inch in diameter). Well adapted and quite generally used. (Solanaceae.)

*Maurandia antirrhiniflora*. Vine Snapdragon. An annual native vine having a perennial root. This dainty little vine produces small, bright green, triangular leaves and deep blue, snapdragon flowers having white centers which are followed by small tan seed capsules. Well adapted. (Scrophulariaceae.)

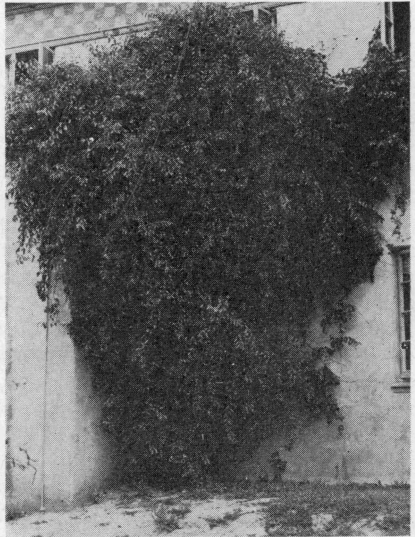


Figure 42. Gold Coast Jasmine (*Jasminum dichotomum*). A most attractive vine having glossy foliage and a profusion of waxy white flowers that are not objectionably fragrant.



*Momordica Balsimina*. Balsam Apple. A rapid growing, annual vine that produces delicate stems, cut and lobed bright green, thin leaves; cream colored, cucurbit flowers which are followed by large, bright red, tuberculate fruits containing seeds surrounded by a thick red jelly. (Cucurbitaceae.)

*Operculina dissecta*.\* Alamo Vine. A tall growing vine having a perennial root. This vine is native to the area around San Antonio, Texas. The leaves are five to seven-lobed, and have wavy edges. The morning-glory flowers are creamy white with dark red centers; seed capsules are large and contain several black seeds. This vine covers most of the walls of the historic Alamo. (Convolvulaceae.)

*Pandorea (Tecoma) Ricasoliana*. Pandora Vine. An evergreen bignonia vine that produces medium green leaves having seven leaflets, and panicles of light pink tubular flowers which are streaked with red. (Bignoniaceae.)

*Parthenocissus (Ampelopsis) quinquefolia*. Virginia Creeper, Woodbine. This species is found growing in East Texas; and *P. heptaphylla* is found in Southwest Texas. The plant resembles a grape vine, but the leaves turn reddish during the fall season. The greenish, inconspicuous flowers are followed by bluish-black fruits. (Vitaceae.)

*Parthenocissus tricuspidata*. Boston Ivy. This ivy is a member of the grape family. It produces shining, bright green, cordate leaves, inconspicuous greenish flowers, and globular, bluish-black fruits. This vine is deciduous, the leaves turning reddish tan before falling.

*Passiflora edulis*. Purple Granadilla. A tall, woody climber having large white flowers with purple markings at the base of the crown; oval melon shaped fruit (2-3 inches long) having a hard, purple-colored rind and sweet scented pulp. This species has large, bright green deeply cut leaves. (Passifloraceae.)

*Passiflora foetida* var. *gossypifolia*. White Passion Flower. A native vine having dull green, three-lobed leaves; greenish, fringed flowers and pale green, puffy seed capsules.

*Passiflora incarnata*. Maypop. A perennial vine that produces white flowers (1½ inches in diameter), having prominent, purplish stamens, and yellow ovoid fruits about two inches long. Well adapted.

*Passiflora lutea*. Yellow Passion Flower. A native variety having dull green, three-lobed leaves; small, greenish colored, fringed flowers (½-inch in diameter); and dark blue fruits the size of marbles. Blooms in late summer and fall.

*Pereskia aculeata*. Blade Apple, Lemon Vine, Barbados Gooseberry, White Bougainvillea. A vine belonging to the Cactus family that produces dark green, glossy foliage somewhat similar to the Bougainvillea vine. This vigorous growing, thorny plant produces bright green, ovate leaves and small greenish white flowers, which are followed by small, succulent, yellow fruits. Should be pruned regularly. (Cactaceae.)

*Petrea volubilis*. Purple Wreath. An evergreen, woody vine that produces rough, thick, ovate to oblong leaves and long racemes of deep blue flowers. Well adapted but difficult to propagate. (Verbenaceae.)

*Phaseolus Caracalla*. Caracol, Snailflower. An evergreen vine having dark

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\*Not grown on the Experiment Station.

green, tri-foliolate leaves. The large, light blue, pea-shaped flowers have a conspicuous, shining white keel twisted into the center of the flower (Figure 43). (Leguminosae.)

*Polygonum Auberti*. Silver Lace Vine. A perennial vine that behaves as an annual above ground. It produces thick, broadly ovate, deep green foliage. In late summer and fall, the vine is covered with a mass of greenish-white, flower clusters. The entire plant, even the large tuberous roots, have a disagreeable odor. Well adapted and quite attractive in appearance. (Polygonaceae.)

*Porana paniculata*. Snow Creeper. A perennial climbing vine that produces dull green, ovate leaves. In the fall, this vine produces a profusion of very small white flowers in dense clusters. Sometimes called White Corallita. Slow growing. (Convolvulaceae.)

*Pueraria Thunbergiana (hirsuta)*. Kudzu. A vigorous growing leguminous vine having perennial roots. It produces hairy stems, large, deep green ovate leaves and small spikes of purple, pea-shaped flowers. This vine is propagated by layering. It makes an excellent vine for pasture fences, as it is also a good forage crop. (Leguminosae.)

*Pyrostegia (Bignonia) venusta*. Flame Vine. An evergreen vine that produces glossy, bright green usually bi-foliolate leaves: In late winter and early spring, the plants produce numerous orange colored tubular flowers which are borne in crowded panicles. This is one of the showiest of the tropical vines, adapted for use in the Lower Rio Grande Valley, and should be extensively used. (Bignoniaceae.)

*Quamoclit coccinea* var. *hederifolia*. Star (Small Red) Morning-Glory. Possibly an escape from Mexico. This native annual vine produces small, three-lobed leaves, small, showy, bright red flowers and tan seed pods. Well adapted. (Convolvulaceae.)



Figure 43. Caracol or Snailvine (*Phaseolus Caracalla*). A very attractive, dense vine having large, blue, distorted pea-shaped flowers.

*Quamoclit pennata*. Cypress Vine. A rapid growing, dainty annual vine that produces dark green, finely cut foliage and numerous small, deep red tubular flowers. Easily grown from seed.

*Quisqualis indica*. Rangoon Creeper. An evergreen, tropical vine having bright green lanceolate leaves and fragrant, white flower spikes that turn red in the late afternoon. Well adapted and quite desirable. (Combretaceae.)

*Rhynchosia phaseoloides (precatorea)*. Rosary Bean. A rapid growing hardy vine that produces dark green, tri-foliolate, bean-like leaves, small yellow flowers and seed pods containing bright red beans, each marked with a conspicuous spot. (Leguminosae.)

*Sechium edule*. Chayote. A climbing, hairy, perennial cucurbit that produces large, dark green, three-lobed leaves and small yellowish flowers which are followed by large, ribbed, light green, pear-shaped fruits. The fruits may be eaten raw as cucumbers or cooked like summer squash. (Cucurbitaceae.)

*Senecio confusus (kermesinus)*. Orange Glow, Dahlia Vine, Mucklei, Hidalgo. An evergreen, rapid growing vine that has been introduced from Mexico. It produces dark green, glossy ovate leaves with wavy margins and clusters of orange and red composite flowers in great profusion. This vine has occasionally been called Mexican Flame Vine. Well adapted and very desirable. (Compositae.)

*Serjania incisa*. *Serjania*. A perennial vine that resembles *Clematis Drummondii* but produces darker green pinnate foliage and remains green throughout the year. In the fall, it produces spikes of white flowers followed by peculiar, highly colored, wafer-like seed. (Sapindaceae.)

*Solandra guttata*. Chalice Vine, Copa de Oro. A vigorous tropical vine or climbing shrub that has been introduced from Mexico. It produces glossy oblong leaves (2 to 6 inches long) and large, fragrant, light yellow, tubular flowers which are marked with purple. Well adapted and very desirable. (Solanaceae.)

*Solanum jasminoides*. Jasmine Nightshade. A vine having pinnate leaves composed of small ovate leaflets, and producing numerous clusters of small, star-shaped white flowers, followed by black fruits. (Solanaceae.)

*Solanum Wendlandii*. Costa Rican Nightshade, Paradise Vine. A tender, perennial, evergreen vine having bright green divided leaves and spiny stems and branches. It produces large clusters of light blue, solanum flowers that remain on the vine for several weeks. This vine is well adapted, makes rapid growth and is easily propagated from cuttings.

*Tetrastigma Harmandii*. *Tetrastigma*. This vigorous growing vine is a member of the grape family. It is recommended for use along the coast because of its resistance to salt injury. The deeply cut leaves are bright green; its fruit are said to be similar to those of the Scuppernong variety. Appears to be well adapted. (Vitaceae.)

*Thunbergia alata*. Black-Eyed-Susan-Clock-Vine. An evergreen vine having slightly rough, medium sized, medium green, ovate leaves and a continuous bloom of yellowish flowers (1-inch in diameter) having black centers. Occasionally, a vine will produce white flowers. Well adapted, and grows readily from seed. (Acanthaceae.)

*Thunbergia fragrans*. Fragrant Clock-vine. An evergreen, tropical vine that produces medium sized, dark green, notched, ovate leaves and medium to small white flowers.

*Thunbergia grandiflora*. Blue Bengal Clock-Vine. An evergreen, tropical vine that produces medium sized, dark green, notched, ovate leaves and large, pale blue flowers. Well adapted and very popular.

*Thunbergia grandiflora alba*. White Bengal Clock-Vine. A very tender, evergreen vine having woody stems; large, dark green, notched leaves and long racemes of large, white flowers. Well adapted and very showy.

*Tournefortia volubilis*. This attractive native vine produces dark green lanceolate foliage and numerous cymes of white flowers which are followed by small milk-white seed having black geometric marking. (Boraginaceae.)

*Trachelospermum (Rhynchospermum) jasminoides*. Confederate (Star) Jasmine. This dense, evergreen, climbing vine produces dark green, glossy ovate leaves (1-inch long), and in the spring, a mass of clustered fragrant white flowers. Very popular. (Apocynaceae.)

*Wisteria floribunda*. Japanese Wisteria. Similar to the Chinese Wisteria in appearance but having brighter green foliage, and longer racemes of blossoms which are violet to purple in color. There is a white flowered variety. The Japanese Wisteria sheds its leaves earlier than the Chinese and blooms several weeks later in the spring. Slow growing. (Leguminosae.)

*Wisteria (Millettia) japonica*. Japanese Millettia, Evergreen Wisteria. An evergreen wisteria that produces dark green, glossy lanceolate leaflets and a profusion of deep purplish violet to wine colored, pea-shaped flowers in upright spikes. This vine produces a profusion of flowers throughout the spring and summer, followed by seed pods. This plant is the most desirable for use in the Valley.

*Wisteria sinensis*. Chinese Wisteria. A deciduous plant having pinnate foliage; numerous bluish-purple, pea-shaped flowers borne in heavy, short drooping racemes. Blooms before leafing out in the spring. Slow growing.

## FOLIAGE PLANTS

There are a number of ornamental plants which are useful because of the showy coloration, shape, texture or arrangement of their foliage. These plants range in size from the small Alternanthera to the majestic Traveller's Tree. They should be used in the landscape scheme to add dashes of color or for emphasis in border and background plantings, and to lend individuality to the grounds where specimen plants are used. Acalyphas, Crotons, Caladiums, Coleus, Amaranthus species, Flowering Ricinus, Plume Grass, Giant Bamboo, and Dusty Miller are a few of the more commonly used subjects in this group.

### Species

*Acalypha hederacea*. Cardinal's Guard. A native plant, somewhat similar to *A. radicans* but having deeply lobed, dull green leaves and less conspicuous feathery red flower spikes. (Euphorbiaceae.)

*Acalypha hispida*. Chenille Plant. A plant having bright green, ovate leaves and fiery red, drooping, chenille-like flower spikes.



*Acalypha radians*. Cardinal's Guard. A hairy native plant, 3 to 10 inches high, which produces an abundance of small, rounded, saw-toothed, dull green leaves. The pistillate and staminate flowers are produced on separate plants, the pistillate flowers appearing as bright red spikes of bloom.

*Acalypha Wilkesiana* var. *marginata*. Copper-Leaf Acalypha. A plant having large, ovate, saw-toothed, copper colored leaves that are margined in white, cream or pink color.

*Acalypha Wilkesiana* var. *mosiaca*. Fire-Dragon Acalypha. This variety produces large, twisted leaves in various shades of green, yellow and red, the predominating color being dark red.

*Acalypha Wilkesiana* var. *mycophylla*. Flat Red-Leaf Acalypha. A very large plant having large, flat, green to copper colored, ovate leaves that are spotted with red, yellow and green.

*Acalypha Wilkesiana* var. *tricolor*. Mandarin's Gown Acalypha. The large, flat, deep red leaves of this plant are spotted with brighter red colors.

Tender shrubs having large, usually showy, highly colored leaves. There are two species of acalypha native to the Lower Rio Grande Valley which produce the typical red flower spikes but do not have showy foliage. Well adapted and very popular.

*Aeonium arboreum* var. *atropurpureum*. Aeonium. An upright plant, two to three feet high, which produces greenish red stems and rosettes of shining, dark red spatulate leaves. This plant usually becomes dormant during the summer. Well adapted. (Crassulaceae.)

*Aglaonema modestum*. Chinese Evergreen, Aglaonema. A low growing plant having erect stems and upright basal shoots. The dark green, ornamental oblong foliage of this plant makes it an excellent pot subject or border plant for use in protected locations. (Araceae.)

*Alpinia speciosa* (*nutans*). Alpinia, Shell-Flower. An evergreen, upright plant having stems several feet high, and producing large, shining, lanceolate leaves horizontal to the stem. The crushed leaves give off a spicy odor. The flowers are called "Seashells" because of the unusual, porcelain-like appearance. (Zingiberaceae.)

*Alsophila australis*. Australian Tree-Fern. Very tender, tropical plants which produce palm-like, slender trunks up to several feet high and crowns of large, bright green fronds. These plants make slow growth and must be protected from the cold. (Cyatheaceae.)

*Alternanthera* (*Telanthera*) *versicolor*. Alternanthera. A low growing perennial bush, twelve to fifteen inches high, which produces numerous, small, variegated leaves in shades of green, red and yellow with bronze and purple markings. This makes an excellent edging plant and is easily propagated from cuttings. (Amaranthaceae.)

*Amaranthus hybridus* var. *hypochondriacus*. Prince's Feather. An annual foliage plant having dark red lanceolate leaves topped with dark red flowering spikes. This plant tends to become a weed but can be successfully used by selecting plants having the desirable deep red leaf-color. Well adapted and quite popular. (Amaranthaceae.)

*Amaranthus* sp. Combustion Amaranthus. A low growing plant up to twelve or fifteen inches high having fiery red, ovate leaves which terminate



in a rosette of flaming, orange-red leaves at the top of the plant. It produces dark red, chenille-like flower spikes and numerous, small, black seed. Very showy and well adapted.

*Andropogon glomeratus*.\* Bushy Beard, Broom-Sedge. A native, bunch grass that thrives best in wet locations. It reaches a height of four or five feet, and produces a profusion of feathery "plumes" that remain attractive throughout the winter. (Gramineae.)

*Andropogon provincialis*.\* Big Blue-Stem Grass, Georgia Cane Grass. A native grass that is sometimes compared to the Pampas Grass, having ornamental silvery "plumes." This roadside plant presents a pleasing appearance throughout most of the year.

*Andropogon scoparius*.\* Little Blue-Stem Grass. A low growing, native bunch grass that produces numerous ornamental, red seed panicles.

*Andropogon virginicus*.\* Broom-Sedge. A tall, native sedge that requires an abundance of moisture. It produces ornamental, enlarged seed clusters.

*Artemisia Stelleriana*. Dusty Miller. Of the several species of Dusty Miller, *A. Stelleriana* is the most commonly grown. This species is usually about fifteen inches high and produces soft, silvery gray pinnate foliage having an aromatic odor. These plants are well adapted and spread rapidly. They are most useful as border or low hedge subjects. (Compositae.)

*Arundinaria gigantea*.\* American Bamboo, Southern Cane. A plant that reaches a height of seven to ten feet. It produces large, dark green culms. Useful as a windbreak, or to prevent soil erosion along canals or ditch banks. (Gramineae.)

*Arundo Donax*.\* Giant Reed Grass. A native grass having large, dark green, somewhat weedy culms that will grow only in wet soil. Useful for hiding unsightly border areas. (Gramineae.)

*Aspidistra lurida (elatior)*. Aspidistra. This plant has stiff, broad, dark green, basal leaves about twelve inches long. It produces a few, purplish brown, lily-like flowers about an inch in diameter at the base of the plant. (Liliaceae.)

*Caladium bicolor*. Fancy-Leaf Caladium. The leaves of this plant are usually much smaller than those of the commonly grown Elephants-Ear and have numerous variations in coloration and marking. The plants are very tender to cold, but appear to be well adapted. (Araceae.)

*Calotropis esculenta*. Giant Milkweed. A U. S. D. A. introduction (P. I. 103,518) up to ten feet in height that produces showy, deeply veined, thick, bluish-green, ovate leaves. During the summer, it produces numerous lavender flowers in clusters. Well adapted and quite promising. (Asclepiadaceae.)

*Centaurea gymnocarpa*. Velvet Centaurea, Dusty Miller. A low growing, silver-gray foliage plant that produces deeply cut, velvety foliage. (Compositae.)

*Codiaeum variegatum*. Croton. These tall growing, tender plants are valuable chiefly for their brightly colored and diversely shaped leaves. Well adapted and very desirable. The species of Croton native to the Lower Rio

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\*Not grown on the Experiment Station.

Grande Valley are unrelated and they lack the bright coloration of the horticultural types. (Euphorbiaceae.)

*Coleus Blumei* var. *Verschaeffeltii*. Coleus. These tender plants have succulent stems and variously shaped and colored leaves. The flower spikes are dark blue to white in color. The plants develop their brightest coloration when they are planted in a well lighted location, but protected from the hot summer sun. The mealy bugs which frequently attack coleus can be controlled by dusting with rotenone dust. (Labiatae.)

*Colocasia antiquorum*. Elephants-Ear. A bulbous plant having large, dark green arrow-shaped leaves, and an occasional, creamy-white, calla-like flower. (Araceae.)

*Colocasia esculenta*. Dasheen. A tuberous plant, closely resembling the common caladium or Elephants-Ear, that produces edible starchy tubers somewhat like an Irish potato. This plant thrives best in a moist location. Well adapted.

*Cortaderia Selloana* (*argentea*). Pampas Grass. This grass forms a very large clump of narrow, saw-toothed leaves. In late summer it produces numerous, large, feathery "plumes" that can be used for interior decoration. Well adapted and very popular. (Gramineae.)

*Cymbopogon citratus*. Lemon Grass. A light green, bunch grass having rather narrow, linear leaves which contain an essential oil having the odor of lemons. Well adapted. (Gramineae.)

*Cyperus alternifolius*. Umbrella Grass. This plant sends up bright green, rounded culms, two feet in height, topped with rosette or narrow leaves, from the center of which small, greenish flowers and greenish brown seed "burs" are produced. Well adapted. (Cyperaceae.)

*Cyperus elegans* (*trachynotus*). Star Sedge. This native grass produces rather open heads of flowers and seed clusters, the seed clusters being star-shaped. The leaves of this plant are only one-sixteenth of an inch wide.

*Cyperus speciosus*.\* Michoix Sedge. A native plant producing dark green, somewhat weedy culms. This plant, which grows along the Arroya Colorado and other fresh water streams, produces ornamental seed stalks having globular heads of flowers and seeds, the heads being four to five inches in diameter. The leaves of this plant are about one-eighth of an inch wide.

*Dieffenbachia Seguine*. Dieffenbachia. These tropicals have showy, brightly marked foliage. *D. Seguine* produces large, bright green ovate leaves striped and ribbed with white, and is often called Zebra Plant. Well adapted. (Araceae.)

*Dracaena*. Dracaena. Upright plants that produce showy foliage, often borne on the tips of branches or on long stalks. There are numerous color combinations, usually in green, white, red and purple. These tropical foliage plants require protection from frost, wind and sun. (Liliaceae.)

*Ficus elastica*. India Rubber-Plant. A large, tropical plant having thick stems, corky bark, and large leathery, oblong, glossy leaves. The stems and leaves are filled with viscous milky sap. Tender to cold, but very popular. (Moraceae.)

*Ficus lyrta* (*pandurata*)\*. Fiddle-leaf Rubber-Plant. This plant is similar

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\*Not grown on the Experiment Station.

to the India Rubber Plant except that it has fiddle-shaped leaves. Very attractive and quite popular.

*Gynura aurantiaca*. Velvet Plant. One of the few purple colored foliage plants. The rather large, young leaves are ovate, deep purple in color, and are covered with velvet-like hairs. This plant reaches a height of about eighteen inches, and produces small heads of yellow, composite flowers during the fall season. It is well adapted to conditions in this region and is quite popular. (Compositae.)

*Hydrocotyle bonariensis*. Marsh Pennywort, Nickles and Dimes. A dwarf plant that seldom reaches a height of more than five inches, which produces dark green, thick, round, nasturtium-like leaves about an inch in diameter, each leaf developing from a rooted stem. In the spring the plant produces umbels of inconspicuous yellow flowers. This plant is used chiefly as a potted subject or as a ground cover in moist, shady locations. (Umbelliferae.)

*Hydrocotyle umbellata*. Water Umbrella-Plant, Nickles and Dimes. A very small, water loving native plant that produces very small, thick, kidney shaped leaves on stems which are individually rooted.

*Iresine (Achyranthes) Herbstii*. Red Painted-Leaf. This variety has wine-red leaves with light rose-colored veining and red stems. (Amaranthaceae.)

*Iresine (Achyranthes) Lindenii*. Variegated Painted-Leaf. A variety that produces bright green leaves having deep red veining, and splotched with red.

Tender, succulent border plants, usually up to twenty-four inches in height, that produce angled stems and deeply veined, roundish leaves.

*Kochia scorparia*. Belvedere (Summer) Cypress, Burning-Bush. A quick growing annual bush, two to three feet high, having bright green, needle-like leaves. In the fall, the plant is covered with numerous, red flower buds, giving it the name "Burning-Bush." The plant is quite symmetrical, being pyramidal in its habit of growth. Well adapted. (Chenopodiaceae.)

*Maranta*. Foliage plants that produces odd shaped, deep green leaves, usually splotched with showy, cream colored markings. One species, *M. arundinacea* (Arrowroot) is a source of arrowroot. (Marantaceae.)

*Miscanthus sinensis (Eulalia japonica)*. Eulalia Grass. This is one of the most popular of the ornamental grasses. It produces long, narrow, rough, serrated leaves two to three feet long. There is a variegated form, *variegatus*; a banded form, *zebrinus*; and a narrow leaf form, *gracillimus*. These varieties are very ornamental, but are less hardy than the common *M. sinensis*. (Gramineae.)

*Monstera deliciosa*. Ceriman. A large leafed, tropical foliage plant having dark green, deeply cut and lobed leaves (Figure 44). It occasionally produces spathed flowers which are followed by edible, dull green fruits about the size and shape of a banana and "pitted" like a pineapple. The plant has fruited in this region only where it has been allowed to trail along the ground. This plant thrives best in a shaded location and in loose soil well mixed with wood chips and sawdust. (Araceae.)

*Monstera dubia*. Shingle-Plant, Penanola. A tropical plant that produces heavy jointed stems which root at the nodes. The young leaves are 4 to 5 inches long; waxy; entire; and deeply lobed when mature. A small type of the very desirable monstera group; thrives in shade.

*Musa Cavendishii*. Cavendish Banana. A dwarf plant about five feet high that produces bunches of large fruit of excellent quality. This plant requires an abundant supply of moisture and frost protection. (Musaceae.)

*Musa paradisiaca*. Horse Banana, Plantain. A large plant that produces bunches of standard sized fruits for cooking. Very tropical in appearance.

*Musa paradisiaca* var. *sapientum*. Gros Michel (Commercial) Banana. A tall growing plant that produces large fruit of excellent quality when adequately protected from frost. Very tender to cold.

*Musa paradisiaca* var. *sapientum*. Champa or Lady Finger Banana. This is a small fruited variety, the fruits being about four inches long, and of excellent quality (Figure 45). Considerably more resistant to cold than other varieties.



Figure 45. Lady Finger Banana (*Musa paradisiaca* var. *sapientum*). Several species of this fruiting plant may be used to add a tropical touch to the landscape.



Figure 44. Ceriman (*Monstera deliciosa*). This tree-climbing, tropical fruiting vine is valuable chiefly for its ornamental foliage.

Banana plants are well adapted to conditions in this region and make rapid growth, even after being frosted back. However, the plants require about eighteen months of growth before setting fruit, and require an abundance of water.

*Pandanus Veitchii*. Veitch's Screwpine, Ribbon Grass. A tall growing plant that produces very long, stiff leaves which grow upright for about eighteen inches before drooping. The leaves are pale green striped with cream. Well adapted. (Pandanaeae.)

*Pennisetum Ruppelii*. Purple Fountain Grass. A well adapted, graceful bunch-grass that produces foliage and feathery plumes having a purplish color. This ornamental subject seldom reaches a height over two and one-half feet. (Gramineae.)



*Philodendron cordatum*. Heart-Leaf Philodendron. A small plant having dark green, heart-shaped leaves. It is useful either as a pot plant or out-of-doors. (Araceae.)

*Philodendron giganteum*.\* Climbing philodendron. A large, climbing plant having woody stems, pendulous, aerial roots, and very large, dark green, oblong leaves (two feet to three feet long).

Tender, tropical plants having woody stems, aerial roots, and ornamental leaves. These are "tree loving" vines which are used to cover unsightly old tree or palm trunks.

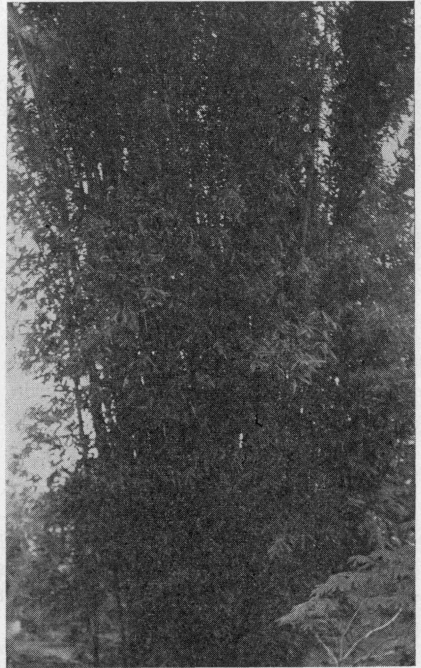
*Phyllostachys latifolius*. Giant Bamboo. A very tall growing bamboo that produces large canes and dark green leaves usually tipped with gold or yellowish green (Figure 46). This variety has proven well adapted at the Valley Experiment Station and is the most ornamental of the Bamboos. Two small types of bamboo are also being grown in the station's trial plantings. Non-spreading types are most desirable. (Gramineae.)

*Pilea microphylla*. Artillery Plant. A low growing, fern-like, succulent plant twelve to fifteen inches high, which produces numerous, very small, light green, double leaves. Although usually grown as a pot plant, this makes a beautiful border plant if planted in a protected location. There is also a very small leafed type having dark green, narrow leaves. (Urticaceae.)

*Polypodium vulgare*. Fennel Fern. A low growing, fern-like plant having soft, dark green, finely cut feathery foliage having the odor of fennel. It is well adapted and multiplies rapidly. This plant thrives best in a moist, shaded location, although it will grow in full sun. (Polypodiaceae.)

*Ravenala madagascariensis*. Traveller's-Tree. A large, banana-like shrub that produces a short, palm-like trunk and banana-like leaves in such arrangement as to give the plant the appearance of a huge fan (Figure 47). This plant is tender to cold but appears to be adapted to conditions in this region. Very ornamental. (Musaceae.)

*Rhektophyllum mirabile* (*Nepthites picturata*). Romeo and Juliet.



**Figure 46. Giant Timber Bamboo** (*Phyllostachys latifolius*). This species attains a height of about 50 feet and the individual canes average about 3 inches in diameter. This is a desirable non-spreading type.





**Figure 47. Traveler's Tree (*Ravenala madagascariensis*).** A most attractive tropical plant having leaves similar to a banana plant, arranged in a perfect fan formation. The thirsty traveler can always procure a drink of water which has been trapped within the basal leaf sheaths.

*Rosemarinus officinalis.* Rosemary. This common flower-graden subject makes an excellent low border plant. It is slow growing and never gets out of bounds. It produces numerous, small, crowded silvery-gray leaves. This is one of the few aromatic herbs that appear to be fairly well adapted to conditions in this region. (Labiatae.)

*Russelia equestiformis.* Fountain-Plant, Coral Plant. This plant produces a grass-like clump of slender, bright green stems having a few, very small leaves and numerous small, red "tips" of bloom. Well adapted. (Scrophulariaceae.)

*Scindapsus (Pothos) aureus.* Devil's Ivy. A climbing tropical plant having cork-like stems, aerial roots, and large, bright green, oval to oblong leaves which are variegated with yellow splotches. This plant makes an excellent pot plant, but when planted out-of-doors in a protected location, it will produce much larger leaves and grows to great size. (Araceae.)

*Setaria (Panicum) palmifolium.* Palm grass. This grass forms clumps of broad dark green palm-like leaves about two feet long. Well adapted but dies back during the winter season. (Gramineae.)

A rather tender tropical plant that produces large, dull green, arrow-shaped leaves. This plant belongs to the family of tree-climbers but will become a trailing ground cover. It is well adapted and multiplies rapidly if allowed to grow along the ground. (Araceae.)

*Rhoeo (Tradescantia) discolor.* Tradescantia. An erect, low growing plant, six to fifteen inches high, having lanceolate, deep green leaves that are purple underneath. The variegated form *R. discolor* var. *vittata*, is similar to the purple form, except that it produces leaves striped with yellow in the upper surface. The flowers are white and are enclosed in boat-like bracts. (Commelinaceae.)

*Ricinus communis.* Castor Bean. A large, tree-like shrub having showy, palmately divided leaves and upright panicles of small red and cream colored flowers. The red-leaved form is the most ornamental of this group, having dark red spikes of bur-like capsules. Well adapted and produces an abundance of beans. (Euphorbiaceae.)

*Strelitzia Reginae*. Bird-of-Paradise. A small plant having banana-like leaves and a few, very showy, peculiarly shaped flowers in varying shades of deep blue, yellow and red combinations. Fairly well adapted but quite tender to cold. (Musaceae.)

*Tricholaena rosea*. Natal Grass, Ruby Grass. A native grass which forms small clumps about twelve inches high. It produces numerous, ornamental, rosy-red seed panicles. (Gramineae.)

*Xanthosoma bataviensis*. Purple-Stem Caladium. Leaves of this plant are somewhat similar to those of the common Elephants-Ear but are thicker and have showy purple stems and veins. This plant is not as hardy or vigorous as the more commonly used type. (Araceae.)

*Zebrina pendula* (*Tradescantia zebrina*). Wandering Jew. A prostrate spreading plant having brittle, succulent stems; green and white striped leaves which are purple underneath; and an occasional small, 3-petaled, purplish flower. This plant is useful as a ground cover or window box subject. Well adapted, but too common to be highly desirable. (Commelinaceae.)

### WATER PLANTS

Many gardeners will want to grow a few of the attractive water plants even if they must use a sunken tub or barrel in lieu of a more pretentious water garden (Figure 48). Day flowering water lilies of the tropical type are the most popular subjects. Of the tropicals, Panama Pacific, (purple), Rubra rosea (rosy red); Mexicana (yellow), and the Star lilies are quite generally used. The better hardy lilies include: Comanche (apricot), Sunrise (yellow), Escarboucle (red), Gonnere (white), and Superba (pink).

In addition to lilies, aquatic gardeners might use plants such as Arrowhead, Bulrushes and Water-hyacinths in the decoration of large pools so as to give a more natural setting.

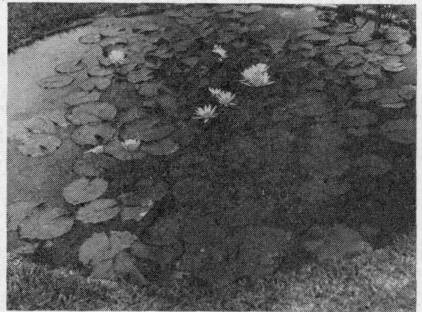


Figure 48. Lily Pool. Few objects add more to the beauty of a large lawn than a well kept lily pool or water garden.

### Species

*Eichhorina crassipes*. Water-Hyacinths. These plants are native in this region, being found in numerous canals and drainage ditches. The bright green leaves and "floaters" as well as the spikes of lavender blooms make this a desirable addition to the pool. Water-hyacinths float on top of the water, multiplying rapidly by division, and the long, hair-like roots usually reach down into the soil. These plants form excellent fish havens. This plant may become a pest. (Pontederiaceae.)

*Hydrocleys nymphoides*. Water Poppy. This delicate little plant, with its numerous small, roundish, floating leaves and small, yellow, poppy-like

flowers is an addition to any shallow pool. It should be planted in shallow water. (Butomaceae.)

*Myriophyllum prosperpinacoides*. Parrot's Feather. This water plant forms bright green feathery plumes (16-18 inches long) which extend up out of the water several inches. They are useful as oxidizing plants where goldfish are a part of the lily-pool scheme, and their long, loose rootlets make splendid protection for fish spawn. (Haloragidaceae.)

*Nymphaea (Castalia) elegans* and *N. mexicana*. Pond Lily. The native pond lilies are to be found in drainage ditches and canals. Although the blooms are small, they are quite ornamental, and the plants are well adapted for use in small pools. Pond lilies can be found in both yellow (*N. mexicana*) and blue (*N. elegans*) flowered forms. (Nymphaeaceae.)

*Nymphaea sp.* Water-Lily. Of the Water Lilies growing in the pool at the Valley Experiment Station, the tropical lilies have produced blooms during the greatest part of the year. Panama Pacific and Mrs. Pring produce a profusion of blooms throughout the year; Mexicana, Pershing and Pennsylvania ranking second in length of blooming period and profusion of bloom; with Rubra rosea ranking third. Of the hardy lilies, Comanche is the only variety which remains on the water the entire year. It produces a few blooms throughout the winter months and ranks with Sunrise in equalling the best of the tropical lilies in profusion of bloom during the warm months.

August Koch. A tropical lily, similar to Panama Pacific in every way, except profusion of bloom and color. It has lilac-blue flowers.

Blue Beauty. A tropical lily that produces long slender buds; numerous attractive light blue flowers, having narrow petals; and green leaves spotted with brown.

Comanche. This is the most persistent and profuse blooming of the hardy lilies, producing a continuous supply of medium to large, orange-colored flowers throughout the warm months and a few scattered blooms during the winter season. The green spotted leaves are resistant to aphids. Very desirable.

Escarboucle. A hardy, red-flowered lily having reddish green leaves. This lily is one of the first hardy lilies to bloom in the spring, and ranks second to Sunrise and Comanche in profusion of bloom. Very desirable.

Frank Trelease. A dark red, night-blooming tropical lily which has showy bronzy red foliage.

Gonnere. A small, hardy lily that produces a few, small, very double, cup-shaped, white flowers. Although it does not produce a profusion of bloom, it is worth the small space it takes in any pool.

Juno. A large, white, night blooming tropical lily; the best white, night blooming lily in the Station pool.

Marliac. These small hardy lilies produce a profusion of bloom. They may be had in a variety of colors.

Mexicana. A small tropical lily that produces rather small, attractive, yellow, narrow-petaled flowers. This plant multiplies so rapidly as to become a nuisance, unless it is grown in a box or tub, and the new plants thinned out. It is such a rank feeder that the plants do not bloom satisfactorily if confined in a small space.

Missouri. A white, night blooming tropical which has not had time to prove its adaptability in the Valley.

Mrs. Pring. A white flowered, tropical lily which ranks along with Panama Pacific as the best, year around lily. The flowers are medium to small in size and have narrow petals.

Paul Heriot. A dwarf, tropical lily that produces small, bronze, spotted leaves and small flowers which are first pale apricot in color, becoming darker each succeeding day. This is a most useful lily in small pools.

Pennsylvania. A vigorous, tropical lily which produces large green leaves and deep blue flowers in great profusion. Very desirable.

Pershing. A large, vigorous, tropical lily which produces numerous deep pink flowers. Best of the pink lilies.

Rubra rosea. A rosy-red, tropical, night-blooming lily which has reddish green leaves. This is one of the showiest in the collection of lilies in the Experiment Station Pool. It produces numerous, brilliantly colored flowers from July to October, and the blooms remain open until mid-morning.

Sturtevant. This dark red, night-blooming tropical lily has not had time to prove its adaptability to Valley conditions.

Superba. A pink flowered, hardy lily which has a very short blooming season; there is little to recommend it except its clear pink color.

Sunrise. This hardy lily ranks with Comanche in profusion of bloom. It has large, double, lemon-yellow flowers which stand up well above the water line.

Star. These lilies produce small blossoms in various shades of blue and rose as well as white. Well adapted, and quite popular.

*Pistia Stratiotes*. Water-Lettuce. This plant forms light green, thick-leaved rosettes which float on top of the water, multiplying rapidly until whole colonies are formed. It is an attractive addition to the pool except when it is damaged by aphids. Aphids can be partially controlled by hosing the plants off with a strong stream of water. (Araceae.)

*Sagittaria platphylla*. Arrowhead. A graceful, upright, native bog plant having rather large arrow-shaped green leaves and loose spikes of small, white flowers. It is best suited to shallow planting. (Alismaceae.)

*Typha angustifolia* and *T. latifolia*. Cat-tail. Cat-tails are native in this region, and can be secured from almost any earthen drainage ditch or canal. They are useful principally in lending height to the pool decoration scheme. These plants are most attractive when the brown "cat-tails" appear on the tops of the plants during the fall season. If Cat-tails are used in a small pool, it is best to plant them in pots; otherwise they will multiply too rapidly and become a nuisance. *T. angustifolia* is the common narrow-leaved type; *T. latifolia* is the wide-leaved species. (Typhaceae.)

## BULBS, TUBEROUS PLANTS AND RELATED ORNAMENTALS

Many of the bulb forming plants such as tulips, most lilies and many of the iris are not well adapted to Valley conditions. This is also true concerning many tuberous-rooted plants such as tuberous-rooted begonias and peonies. Amaryllis, Crinum, Easter lilies, Day lilies, Rain lilies, Spider



lilies, Star-of-Bethlehem lilies, and Amazon lilies are well adapted and require no special cultural care. Ranunculus, Anemones, and Dahlias can be grown by gardeners who are willing to give special cultural care to these subjects. Gladiolus are especially well adapted to conditions in the Valley and are grown successfully by amateurs and commercial gardeners alike.

### Species

*Agapanthus africanus*. Agapanthus Lily, Blue Lily of the Nile. This tuberous-rooted plant produces tall flowering stalks topped with umbels of pale blue flowers. Plants usually die out during the summer. (Liliaceae.)

*Anemone coronaria*. Spring Windflower. Spring Anemones have been found to be fairly well adapted to conditions in the Lower Rio Grande Valley. The vari-colored, poppy-like flowers are quite attractive. There is a fall blooming, herbaceous type of anemone, *A. japonica*. (Ranunculaceae.)

*Brodiaea (Leucocoryne) ixiooides* var. *odorata*. Glory of the Sun. A fairly well adapted bulb plant that produces narrow leaves and umbels of fragrant blue flowers with lighter colored centers. (Liliaceae.)

*Convallaria majalis*. Lily-of-the-Valley. If strong "pips" are planted every year, these small, dainty flowers can be successfully grown. They will produce blooms shortly after planting either indoors or outdoors in a moist shady location. (Liliaceae.)

*Cooperia Drummondii*, *C. pedunculata* and *C. Smallii*. Rain Lily. These three forms of native rain lilies, two of which are white and one yellow, are well worth searching for after the rains. *C. Drummondii* (Small White Rain Lily) is found in great abundance. *C. pedunculata* (Great Rain Lily) is the large, white-flowered species which is occasionally found in this region. *C. Smallii* (Yellow Rain Lily) is the only one of this color known in this genus. These native plants are particularly useful as ornamentals when the bulbs are planted in the lawn grass. They do not interfere with the care of the lawn, and after the rains, the flowers show up within a few hours, and usually last two or three days. To add color to the planting, Fairy Lilies (*Zephyranthes* and *Habranthus*) can be set among the plants of *Cooperia*. (Amaryllidaceae.)

*Crinum*. The crinums are especially well adapted to conditions in the Lower Rio Grande Valley, and thrive under almost any growing conditions. Their large, showy leaves are fully as attractive as the fragrant, lily-like flowers. Crinums multiply by division and will become a permanent part of the planting plan if allowed to remain undisturbed. The following forms are recommended: *C. americanum* (White Crinum), *C. asiaticum (hybricum)*, (Pink Crinum), *C. erubescens* (Rose-Stripe Crinum), *C. fimbriatum* (Milk-and-Wine Crinum), *C. scabrum* (Rose-Stripe Crinum), and *C. zeylanicum* (Drooping Crinum). (Amaryllidaceae.)

*Dahlia*. Garden dahlias (*D. pinnata*) and the Cactus-Flowered dahlias (*D. Juarezii*) are being grown in the Lower Rio Grande Valley for commercial purposes. However, it is suggested that amateur growers make limited trials before starting extensive planting. The tubers should be planted deep (6 inches), and covered with 3 inches of soil, gradually filling the holes from



time to time. Give heavy waterings at regular intervals to encourage deep rooting. The plants should be staked and tied when they are about six inches tall, and then retied as they develop. To obtain choice flowers, it is necessary to prune the plant to a single stalk, and pinch off the superfluous flower buds as they appear, leaving only one or two to a plant. (Compositae.)

*Eucharis grandiflora*. Amazon Lily. A small, bulbous plant having ornamental dark green, broad leaves and large, white, narcissus-like flowers. Well adapted and quite popular. (Liliaceae.)

*Freesia hybrida* and *F. refracta*. Freesia. Freecias are being grown commercially, under lath, in the Lower Rio Grande Valley, and appear to be fairly well adapted. *F. hybrida* is available in a variety of color-patterns; *F. refracta* produces white or yellow flowers. (Iridaceae.)

*Gladiolus* sp. Gladiolus are well adapted to conditions in the Lower Rio Grande Valley and are grown commercially on a large scale. The plants require full sun and an abundance of water. They are obtainable in a wide range of colors and color combinations. (Iridaceae.)

*Gloriosa Rothschildiana*. Climbing-Lily. A bulbous plant having bright green leaves; climbing stems; red and orange, lily-like flowers; and small black seed. This plant is well adapted but is quite slow growing. (Liliaceae.)

*Habranthus Andersoni*. Copper Rain-Lily. This small rain-lily is native to other parts of Texas and is well adapted in this region. It produces small yellow flowers, the outside of the petals being coppery-red. (Amaryllidaceae.)

*Hedychium coronarium*. Butterfly Lily, Ginger Lily. A tuberous rooted plant that flourishes best in a moist location. It has upright stems with sheathed leaves and fragrant white flower clusters which are produced during the spring and fall seasons. (Zingiberaceae.)

*Hemerocallis*. Day Lily. Day lilies appear to be well adapted to conditions in this region. They are obtainable in a large range of colors ranging from lemon yellow to tawny orange, and several colors are obtainable in the double-flowered form. The following species are recommended: *H. flava* (Lemon Yellow), *H. flava pleno* (Double Tawny), *H. Florham* (Orange Flowered), and *H. fulva* (Single Tawny). (Liliaceae.)

*Herbertia Drummondiana*. Native Blue Flag. A small iris-like plant that produces narrow leaves and small, blue, three-petaled flowers. *H. Watsoni* produces blue iris-like flowers with yellow mottled corollas. This species is also native. (Iridaceae.)

*Hippeastrum*. Amaryllis. These plants are especially well adapted to conditions in the Lower Rio Grande Valley and seem to thrive under almost any conditions. *H. puniceum (equestre)*, Orange-Flowered, and *H. Johnsoni* (Red-Flowered) multiply rapidly and maintain themselves continuously. *H. hybridum* (Hybrid Amaryllis) are well adapted and produce a great range of color-patterns. If the grower has a creative desire, these plants offer an excellent opportunity, as it is not difficult to cross pollinate the flowers and obtain hybrid seedlings. The hybrid seeds should be planted shallow in flats of loamy soil, and may be kept moist by laying a damp paper over the surface. The flats should be kept in partial shade during the summer months. After the seedlings become sufficiently hardened, they should be transplanted to pots or to field locations. (Amaryllidaceae.)

*Hyacinthus orientalis*. Dutch Hyacinth. These bulbs make excellent pot plants, but are not adapted to outdoor culture. After the bulbs bloom in March, they should be allowed to dry thoroughly and should then be stored in a cool, dark, dry storage space. (Liliaceae.)

*Hyacinthus orientalis* var. *albulus*. French-Roman Hyacinth. These sturdy small plants are well adapted, and although the spikes have fewer blossoms, they produce such a profusion of bloom out-of-doors that they are quite popular with most flower growers.

*Hymenocallis caribaea* and *H. galvestonensis*. Spider-Lily. Both species of Spider-Lilies have white, fringed petals. *H. galvestonensis* (Gulf Coast Spider-Lily), the species native to Texas, is recommended for general use. It is quite hardy and will thrive under almost any growing conditions. (Amaryllidaceae.)

*Iris*. Small scale, commercial production of iris bulbs has been attempted in the Lower Rio Grande Valley, and it has been shown that certain iris can be grown successfully where diseases are controlled. For general use, the rhizome forming, Tall-Bearded (German) Iris (*I. germanica*) is recommended; however, Spanish (*I. xiphium*) and English iris (*I. xiphioides*) are being grown. (Iridaceae.)

*Kniphofia Uvaria*. Poker-Plant, Tritoma. This plant is weak growing and short lived in this region. The grass-like foliage and torch-like spikes of bloom are very attractive where they are grown in a favorable environment. It is suggested that these plants be planted only in locations favorable for Day-lilies. (Liliaceae.)

\**Lilium aurantum*. Gold Banded Lily. (Liliaceae.)

*Lilium candidum*. Madonna Lily. This white flowering lily somewhat resembles the Easter Lily. The bulbs should be planted in the fall and allowed to remain undisturbed.

\**Lilium canadense* var. *coccinea (rubrum)*. Rubrum Lily, Red Lily-of-Japan.

\**Lilium elegans*. Elegans Lily.

*Lilium formosanum*. Philippine Lily. This white, flowering lily appears to be fairly well adapted to conditions in this region. It produces attractive, trumpet-shaped flowers.

\**Lilium Henryi*. Henry Lily.

*Lilium longiflorum*. Easter Lily. Easter lilies are especially well adapted to conditions in this region, and maintain themselves in a very satisfactory manner. The plants die down after blooming in the spring and reappear early the following spring. They are very popular and the bulbs are produced for export.

*Lilium regale*. Regal Lily. The Regal or Royal lily appears to be fairly well adapted to conditions in the Lower Rio Grande Valley. It is one of the best trumpet-shaped lilies, producing large clusters of fragrant white flowers which are tinged with rose and have yellow centers.

*Lilium tenuifolium*. Siberian Coral Lily. The flowers of this lily are small, bright red in color and have recurved petals and prominent stamen. It blooms during the early summer season.

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\*This plant material has been tested under Valley conditions and proved to be unadapted.

\**Lilium tigrinum*. Tiger Lily.

*Lycoris squamigera* (*Amaryllis Hallii*). Pink Amaryllis. This plant is similar in appearance to *Hippeastrum* but is not as vigorous. It produces dainty pink flowers. (Amaryllidaceae.)

*Morea irioides*. Morea Iris. These plants, similar to Iris, seem to be well adapted to conditions in the Lower Rio Grande Valley. Easily grown and quite popular. (Iridaceae.)

*Muscari*. Grape Hyacinth. Very small plants (6 inches high) having dark green, very narrow leaves. The commonly planted variety, *M. botryoides*, produces pale blue flowers; *M. armeniacum* produces flowers of a deeper color. (Liliaceae.)

*Narcissus Pseudo-narcissus*. Daffodils. These golden narcissus are very attractive during the early spring season, and are quite popular with some gardeners. (Amaryllidaceae.)

*Narcissus Tazetta*. Polyanthus Narcissus, Paper-White Narcissus. These are among the most commonly grown bulb plants in the Lower Rio Grande Valley for outdoor plantings, as well as for house plants. It is usually necessary to transplant the bulbs every year to insure regular blooming. If allowed to remain undisturbed the plants will become "splindling" and cease blooming. Very popular.

*Narcissus Tazetta* var. *orientalis*. Chinese Sacred Lily. This plant differs from the better known Paper-White narcissus in having larger flowers with yellow centers.

*Ornithogalum umbellatum*. Star-of-Bethlehem Lily. These very small, star-shaped lilies are useful as edging plants for the lily bed. The leaf blades are grass-like, and the small, white flowers with yellow centers are quite ornamental. They are well adapted to conditions in this region and multiply rapidly. (Liliaceae.)

*Oxalis*. These very small plants produce clover-like leaves in most cases, and attractive vari-colored flowers. These plants, like the Fairy-Lilies, Rain-Lilies, and Star-of-Bethlehem lilies, make excellent edging or lawn plants. If allowed to remain undisturbed, they will multiply rapidly. It is recommended that the native species, *O. dichondraefolia* and *O. Drummondii* be sought out and planted. The latter produces very small bulbs and the plants bear clusters of several long stemmed, clover-like leaves, and lavender-pink, bell-like flowers having yellow centers. *O. dichondraefolia* produces dull, kidney-shaped leaves and small yellow flowers. Other species that have proven well adapted are: *O. Acetosella* (White Flowered), *O. Bowlicana*, (Bowie's Rose), *O. cernua* (Buttercup), *O. corniculata* (Creeping Sour Grass) and *O. rubra*, Pink Flowered Oxalis. (Oxalidaceae.)

*Paeonia albiflora*. Peony. Chinese peonies are not adapted to the hot climate of this region and fail to produce flowers. (Ranunculaceae.)

*Polianthes tuberosa*. Mexican Tuberose. Mexican tuberoses are well adapted to conditions in the Lower Rio Grande Valley, and multiply rapidly if given sufficient space. The plants bloom during the winter, and early spring months, and should be separated after blooming period is over. Quite popular. (Amaryllidaceae.)

\*This plant material has been tested under Valley conditions and proved to be unadapted.

*Ranunculus asiaticus*. Persian Buttercup. *Ranunculus* are being grown in the Lower Rio Grande Valley to a limited extent. The small, tuberous plants produce large, bright colored buttercup-like flowers which are quite attractive. *Ranunculus* are rather exacting in their demands, and thrive best in a loose soil in a partially shaded location. The tubers should be soaked for several hours and then planted with the tapering points downward. (*Ranunculaceae*.)

*Tigridia Pavonia* var. *grandiflora*. Shell-Flower, Tiger Flower. This plant produces the typical three-petaled flowers of the *Iridaceae* family. The highly colored flowers are available in various shades of yellow, red and orange dotted with brown. (*Iridaceae*.)

*Tritonia crocosmaeflora*. Montbretia, Tritonia. Montbretias appear to be well adapted to conditions in this region, but thrive best in shaded locations. The plants resemble those of the gladiolus, but are smaller and more reclining. The three-petaled flowers are orange-red in color and have yellow throats. Very desirable. (*Iridaceae*.)

\**Tulipa Gesneriana*. Dutch Tulip. (*Liliaceae*.)

\**Tulipa Eichleri*, *Kaufmanniana*, *praestans* and *sylvestris*. Botanical Tulips.

\**Watsonia*. Bugle Lily. (*Iridaceae*.)

*Zantedeschia* (*Richardia*). Calla Lily. These bulbous plants make excellent pot plants. The bulbs require a rest period during the summer, and must be forced for the production of winter bloom. *Z. aethiopica* (White Calla), and *Z. Elliotiana* (Yellow Calla) are well adapted and produce large showy leaves and flowers. *Z. Rehmannii* (Pink Calla) is a small, weak growing type. (*Araceae*.)

*Zephyranthes*. Fairy-Lily, Zephyr-Lily, Shower-Lily. These small, dainty rain-lilies are well adapted to conditions in the Lower Rio Grande Valley, and produce a profusion of blooms after each rain or heavy irrigation. *Zephyranthes* are usually classified as Fairy-Lilies or Shower-Lilies but are often called Rain-Lilies. One species, *Z. chrysantha* (Golden Shower Lily) is native of this region. Other well adapted species are: *Z. Atamasco* (White Shower-Lily), *Z. candida* (Autumn Shower-Lily), and *Z. carinata* (Rose Shower-Lily). (*Amaryllidaceae*.)

## CACTI AND OTHER SUCCULENTS

The semi-arid nature of our Valley climate makes it possible for gardeners in this region to maintain interesting and attractive collections of plants in this group. It may be necessary to grow them under somewhat artificial conditions as regards soil drainage and they must be grown in full sunlight, with the exception of a few tender succulents. There are a number of native species which may be collected in brush country near the coast or back in the hill country near Rio Grande City. Most gardeners prefer to use some of the rarer types because of the unusual nature of the subjects and the interest which they attract. Of the cacti, Star, Lace, Pencil,

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\* This plant material has been tested under Valley conditions and proved to be unadapted.

Pincushion, Devil's Head, Fishhook and Night-Blooming *Cereus* are the more popular native species.

Other popular succulents include *Crassulas*, Desert Rose, Hen-and-Chickens, Star-of-Bethlehem and *Kalanchoes*. These are among the more attractive flowering plants.

Aloes, Agaves, *Yuccas* (Figure 4a) and *Sansevierias* may be considered separately because of their special use in the landscape scheme. Most of these are used as individual specimens, but *Sansevieria* varieties are used principally in border plantings and as edging plants.

Some of the better adapted plants in these groups have been described on the following pages.

### Cacti

*Acanthocereus (Cereus) pentagonus*. Night-Blooming *Cereus*. A plant having 3 to 6-angled elongated stems which root at the nodes. It produces large strong spines; showy, white, night-blooming flowers and red fruits. (Cactaceae.)

*Ariocarpus fissuratus*. Living Rock. A small flat cactus with a rock-like appearance. The small flowers are pink to red. (Cactaceae.)

*Astrophytum (Echinocactus) asterias*. Star Cactus. A small, globose, gray plant that is entirely thornless. It is heavily ribbed, the ridges forming a five-point star-pattern across the top. (Cactaceae.)

*Astrophytum (Echinocactus) myriostigma*. Bishop's Hood or Crown. This spineless, globose, gray plant resembles a Bishop's head-dress.

*Cephalocereus senilis*. Old Man Cactus. An upright plant bearing long, silky, white, hair-like covering. (Cactaceae.)

*Echinocactus horizonthalonius*. Devil's Head. Large hemispherical plants having curved spines along the heavy ribs, rose-colored flowers and red fruits. (Cactaceae.)

*Echinocereus Blanckii*. Large Finger Cactus. This plant produces spiny, plump stems which become elongated-prostrate at maturity. The dark reddish-purple flowers are quite showy. (Cactaceae.)

*Echinocereus chloranthus*. Rainbow Cactus. A cylindrical plant having a single thickened stem overlaid with fine white spines. The yellow flowers never completely open.

*Echinocereus dasyacanthus*. Yellow-Flowered Rainbow Cactus. This plant resembles *E. chloranthus* but produces showy, large yellow flowers.

*Echinocereus enneacanthus*. Strawberry or Cob Cactus. An erect cob-like plant forming large clumps that produce dark red flowers along one side of the stems, followed by fruits of strawberry flavor.

*Echinocereus Fitchii*. Lace Cactus. A short cylindrical plant covered with fine, lace-like, white spines. It produces pink flowers.

*Echinocereus pentalophus*. Wee Lady-Finger Cactus. Similar to the other Finger Cacti, being the smallest of the group, and having lighter colored flowers.

*Echinocereus Reichenbachii*. Lace Cactus. A tall cylindrical plant having one or more stems; fine, white, lace-like spines over-all; and pink flowers.

*Echinocereus triglochidiatus*. Claret Cup Cactus. The banana-shaped stems



of this plant form large rosettes. It produces showy, dark red, goblet-shaped flowers and red fruits.

*Epiphyllum (Phyllocactus) Ackermannii*. Showy Epiphyllum. This plant is closely related to the commonly grown Christmas Cactus (*Zygocactus*). It is a thornless plant of upright, flat, leaf-like branches. The lower part of the branches are fleshy with distinct ribs. It produces large, deep red flowers which open during the day. (Cactaceae.)

*Epithelantha micromeris*. Button Cactus. This is a small, globose plant entirely covered with soft white spines. It produces small flesh-pink flowers, and small red fruits which are called "Chilitos." (Cactaceae.)

*Escobaria Runyonii*. Escobaria. These low clumps of small cacti are thickly covered with small, weak, gray spines. They produce very small pink flowers and small red fruits. (Cactaceae.)

*Ferocactus hamatacanthus*. Fishhook Cactus. Dangerous hooked spines overlay this plant. It produces showy yellow flowers. (Cactaceae.)

*Ferocactus uncinatus*. Turk's Head. This plant produces long, white, hooked spines; heavy blue-green tubercles; and orange to brown colored flowers.

*Ferocactus Wislizeni*. Barrel or Fishhook Cactus. A barrel-shaped cactus having numerous curved spines.

*Hamatocactus setispinus*. Hedgehog or Fishhook Cactus. This cob-shaped, upright cactus is very abundant in this region. It has a heavy covering of yellowish, close-fitting spines and produces large, satiny, yellow flowers. (Cactaceae.)

*Homalocephala (Echinocactus) texensis*. Devil's Pin Cushion. A small hemispherical plant that produces small spines along the numerous ribs, pink flowers and red fruits. (Cactaceae.)

*Lophophora (Echinocactus) Williamsii*. Peyote or Mescal Button. A small, spineless, globose, blue-green, succulent plant that is used by the Indians in their religious rites. Undesirable qualities. (Cactaceae.)

*Mammillaria hemisphaerica*. Pin-Cushion Cactus. A very small hemispherical plant that is covered with spine-bearing nipples. It produces small cream-colored flowers and small red fruits called "Chilitos." (Cactaceae.)

*Mammillaria multiceps*. Hair Covered Cactus. Low clumps of small, woolly, hemispherical plants.

*Mammillaria plumosa*. Plumy Cactus. Similar to *M. multiceps* but having a finer hair covering.

*Mammillaria (Coryphantha) Runyonii*. Runyon's Coryphantha. This succulent plant forms large clumps and produces fleshy roots. The plants are covered with thick tubercles bearing tip spines. The flowers are pink to purple.

*Optunia Dillenii*. Spineless Prickly-Pear. The large pads of this plant are spineless when grown in the shade. (Cactaceae.)

*Optunia Ficus-indica*. Spineless Prickly-Pear. This is the commonly grown plant that produces large, spineless pads.

*Optunia grandiflora*. Giant Flowered Prickly-Pear. This Prickly-pear produces large prickly pads and large yellow flowers with red centers.

*Optunia imbricata*. Walking Stick, Candlelabrum, or Cholla Cactus. This

tree-like plant produces many branching stems and numerous vicious spines.

*Optunia leptocaulis*. Turkey Cactus or Tasahillo. A long stemmed, very spiny cactus that produces inconspicuous flowers and numerous small red fruits.

*Optunia Lindheimeri*. Common Prickly-Pear. This is the native prickly-pear that produces large prickly pads and showy yellow, red or orange colored flowers followed by large edible purplish fruits.

*Optunia microdasys* var. *rufida*. Velvet Prickly-Pear. This plant produces small bright green pads with velvety brown dots.

*Optunia Schottii*. Devil's Rope or Clavellina. Small elongated cacti joined end to end and having vicious barbed spines.

*Phyllocactus latifrons*. Queen Cactus. An upright growing thornless plant that produces flat, wavy-edged, leaf-like stems about four inches wide. Its night-bloomnig flowers are creamy white. (Cactaceae.)

*Wilcoxia Poselgeri*. Lead Pencil, Sacasil, or Dahlia Cactus. The stems of this plant are gray, pencil-like and thickened to form white spine-covered tips. It produces showy rose-colored flowers. (Cactaceae.)

*Zygocactus (Epiphyllum) truncatus*. Christmas or Crab Cactus. The thornless, flat, jointed, leaf-like stems of this plant produce conspicuous small rosy flowers. The short jointed sections are succulent and droop gracefully over the sides of a flower pot. (Cactaceae.)

#### Other Small Succulents

*Ceròpegia Woodii*. *Rosary-vine*. A dwarf, succulent, tuberous-rooted vine that produces small, kidney-shaped, silver-spotted leaves, small pinkish flowers and long slender pods filled with winged seed. (Asclepiadaceae.)

*Courantia (Echeveria) rosea-grandis*. Hen-and-Chickens. This plant forms a large rosette of succulent green leaves edged with red. (Crassulaceae.)

*Crassula arborescens*. Jade Plant. A small arborescent plant that produces succulent, ovate, jade-green leaves. (Crassulaceae.)

*Crassula (Rochea) falcata*. Cleaver Plant. An odd growing rosette of leaves, each leaf having one cleaver-like edge.

*Crassula impressa (rubicunda)*. Crassula. A dwarf plant having pencil shaped green leaves and bright red flowers.

*Crassula lycopodioides*. Princess Pine. A small dainty plant having slender upright stems and bright green, pine-like foliage.

*Crassula perfolosa*. String-of-Buttons. A dwarf plant having square, blue-green leaves arranged on the stem like a string of buttons. *C. monicola* produces triangular, blue-green leaves on a plant similar in other respects to *C. perfolosa*.

*Echeveria elegans*. Hen-and-Chickens. This plant produces a rosette of succulent, blue-green leaves. *E. glauca* produces blue-green leaves tipped with red, the young plants being produced at the base. *E. gibbiflora* var. *metallica* produces mauve-colored, metallic leaves. *E. Hoveyi* produces blue-green leaves. *E. scaphylla* and *E. simulans* produce pale green, very thick leaves. (Crassulaceae.)

*Euphorbia mammillaris*. Cob-of-Corn. This small, succulent, light green plant resembles a tiny corn-cob. (Euphorbiaceae.)

*Euphorbia splendens*. Crown-of-Thorns. Erect, branching, thorny plants having small, dark green leaves and showy clusters of red flowers.

*Euphorbia Tirucalli*. Milkbush or Rubber Plant. A tall growing (6-8 feet) almost leafless plant having numerous dark green, pencil-like stems filled with milky sap.

*Faucaria splendens*. Jacob's Staff or Devil's Walking Stick. A succulent, leafless, many branched plant of dark green. The stems are pencil-like and contain milky sap. (Euphorbiaceae.)

*Gasteria hybrida*. Hart's Tongue or Deer's Tongue. A small, fan-shaped plant having gray-green, knife-like leaves spotted with white. (Liliaceae.)

*Graptopetalum Orpetii*. Desert-Rose. This plant produces numerous rosettes of succulent, gray, rose-like leaves tinted rose and long flowering stalks of small white flower clusters. (Crassulaceae.)

*Haworthia cymbiformis*. Window-Pane. Rosettes of succulent, transparent, light-green leaves. New plants are produced between the leaves. (Liliaceae.)

*Haworthia fasciata*. Partridge Breast. A small aloe-like plant having stiff, dark green leaves spotted with white.

*Haworthia margaritifera*. Haworthia. A small, flattened, aloe-like plant having numerous white dots on the leaves.

*Hoya carnosa*. Wax-Plant. A delicate vine with succulent, broad, light green leaves and fragrant, waxy flowers having pink centers. (Asclepiadaceae.)

*Kalanchoe Blossfeldiana (globulifera; coccinea)*. Red-Flowered Kalanchoe. These plants are 6 to 8 inches high having bright green leaves and flowering stalks of small, bright red, flower clusters. *K. crenata* is an upright plant with large, dark green, serrated leaves. *K. Daigremontiana* (Triangular-Leaf Kalanchoe) is an upright branching plant having large, succulent, triangular leaves and drooping, rose-colored flower clusters on long stalks. *K. Fedtschenkoii* is a tall plant producing purplish-gray leaves and rose colored flowers. *K. marmorata* (Spotted-Leaf Kalanchoe) produces rosettes of large, ovate, pale green leaves splotched with brown. *K. miniata* (Light Green Kalanchoe) produces crowded, succulent light green leaves tinged with pink. *K. pinnata* (Air Plant or Live Forever) produces large, deep green, wavy-edged leaves and tall flower clusters with rose-colored flowers. *K. Schmidtii* (Schmidt's Kalanchoe) is a small plant with bright green leaves and clusters of red flowers. *K. somaliensis* (Rose-Tinted Kalanchoe) is a rosette type having pale green leaves edged with red. *K. sp.* (Purplish-Green Kalanchoe) is a branching plant having crowded, succulent, purplish-green leaves and rose-colored flowers. *K. tomentosa* (Velvet Leaf Kalanchoe) is an upright plant having narrow, gray, velvety leaves spotted with brown. *K. tubiflora* (Narrow-Leaf Kalanchoe) is a tall slender plant having short, pencil-like, spotted gray leaves and showy, rose-colored flowers. Most of the Kalanchoes produce clusters of drooping half closed flowers on long flowering stalks and produce new plants along the edges of the leaves. (Crassulaceae.)

*Mesembryanthemum Bolusi*. Heart-leaf Fig Marigold. This low growing plant has a rock-like appearance. It produces showy yellow flowers. (Aizoaceae.)

*Mesembryanthemum cordifolium*. Dew Plant. A small succulent plant

having small, bright green, heart-shaped, frosted leaves and small, bright red flowers.

*Mesembryanthemum crystallinum*. Ice Plant. A succulent, low growing plant that produces pale green, succulent, frosted leaves and small white flowers.

*Mesembryanthemum edule*. Flowering Mesembryanthemum. These low growing succulent plants produce thick, triangular to awl shaped, succulent leaves and showy yellow to rose colored flowers.

*Pedilanthus tithymaloides*. Red Bird Cactus. A many-branching plant having fleshy, dark green, pencil-shaped stems with milky sap, very few, small, dark green leaves. The stems are tipped with small, bright red, leaf-like flowers. (Euphorbiaceae.)

*Sedum acre*. Golden Moss or Stonecrop. A small, moss-like plant having succulent, light green, awl-shaped leaves and tiny yellow flowers. *S. Adolphi*, (Adolphus Stonecrop) produces rosettes of fleshy, golden-green, broad leaves. *S. confusum* (Blue Stonecrop) produces moss-like, blue-green leaves. *S. guatemalense* (Christmas-Cheer Stonecrop) produces thickly clustered stems of fleshy, shining, dark green, awl-shaped leaves tipped with red. *S. pachyphyllum* (Red-Tip Stonecrop) is similar in appearance to *S. guatemalense* except that the red-tipped, fleshy leaves are blue-green. *S. spectabile* (Showy or Brilliant Stonecrop) is a plant 18 inches high having broad, thick green leaves and bright red flowers. *S. spurium* (Bronzy Moss or Stonecrop) is a moss-like plant having small bronzy-green leaves and red flowers. (Crassulaceae.)

*Sempervivum Braunii*. Hen-and-Chickens. These plants produce rosettes of succulent, bronzy leaves tipped with red. *S. calcareum* produces rosettes of rigid dark green leaves *S. globiferum* produces rosettes of succulent, red-tipped, green leaves, the new plants appearing between the leaves. *S. Mogridgei* and *S. tectorum* produce rigid, bright green leaves. All of these Sempervivums appear to be well adapted. (Crassulaceae.)

*Senecio succulentus*. Kleinia. Two forms are being grown in the Lower Rio Grande Valley and both appear to be well adapted. *S. succulentus* (*Kleinia mandrolisc*), Dwarf Kleinia, produces succulent, blue, awl-shaped leaves forming an elongated rosette about 5 inches high. *S. succulentus* (*Kleinia repens* var. *nana*) is similar to the former but produces a larger plant up to 10 inches high. (Compositae.)

*Stapelia variegata*. Star-of-Bethlehem or Carrion Flower. This plant produces prostrate, fleshy stems and showy brown and yellow, star-shaped flowers. *Stapelia gigantea* (Giant Star-of-Bethlehem) is similar to the former but produces much larger stems and flowers. The flowers are malodorous. (Asclepiadaceae.)

#### Other Large Succulents

*Agave americana*. Plain Leaf Century Plant or Maguey. This drouth resistant plant produces stiff, upright, gray leaves edged with thorns. The leaves are in the form of a huge rosette about four feet in diameter. *A. americana* var. *marginata* (Yellow Bordered Century Plant)\* produces stiff green leaves with yellow edges and bordered with thorns. *A. americana* var.

\*Not grown on the Experiment Station.



*striata* (Variegated Century Plant) produces thorny edged, stiff green leaves striped with yellow. (Amaryllidaceae.)

*Agave macroacantha* var. *gigantea*. Giant Snake Plant. A semi-flat rosette of succulent ribbon-like green leaves that produces a flowering stalk several feet high topped with a small cluster of small, tuberose-shaped flowers.

*Agave maculosa*. Small Rattlesnake Plant. This plant produces a flat rosette of ribbon-like green leaves splotched with reddish-brown. It produces pink to red flowers similar to those of *A. macroacantha*.

*Agave variegata*. Texas Tuberose. This plant is similar to *A. maculosa* but the rosette is smaller and leafier and the flower stalk is red.

*Agave zapupe*.\* Zapupe or Istle. This plant grows in the vicinity of Rio Grande City. It is similar in appearance to *A. americana* and is valuable as a fiber plant.

*Aloe agavefolia*. Agave Aloe. This plant produces stiff, thorny-edged gray leaves similar to *Agave americana* but smaller in size. (Liliaceae.)

*Aloe arborescens*. Thorny-Edged Aloe. This branching plant produces narrow, blue-green leaves edged with numerous thorns.

*Aloe commutata*. Variegated Aloe. A stiff, almost thornless plant having gray green leaves spotted with yellow.

*Aloe variegata*. Small Variegated Aloe. This small plant produces almost thornless leaves spotted and edged with yellow.

*Aloe vera*. Yellow Flower Barbados Aloe. An upright plant about 18 inches high having pale green leaves spotted with yellow. The leaves turn darker with age and the spots disappear. This plant produces erect flowering stalks of showy yellow flower clusters. *A. vera* var. *officinalis* (Red-Flower Barbados Aloe) is similar in appearance but is smaller and the leaves do not entirely lose their markings.

*Ananas sativus* (*comosus*). Pineapple. This plant is somewhat similar in appearance to the agaves and is occasionally used as a decorative subject. (Bromeliaceae.)

*Hechtia texensis*\* False agave. An agave-like plant that has few thorns and attractive coloration. It takes several years to produce blooms. (Bromeliaceae.)

*Hesperaloe parviflora*. Red-Flowered Yucca. A Yucca-like plant having very narrow leaves and spikes of rosy-red flowers. (Liliaceae.)

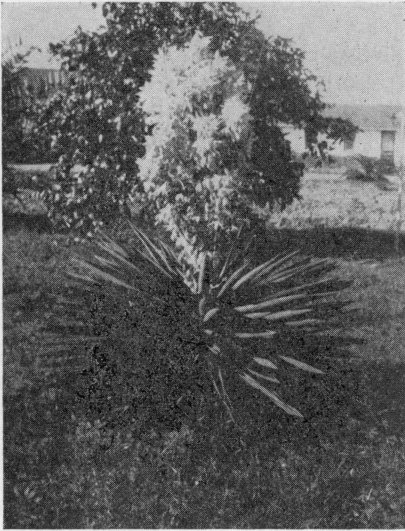


Figure 49. Spanish Dagger (*Yucca treculeana*). A native, flowering plant that adds a semi-arid touch to the landscape.

\*Not grown on the Experiment Station.



*Sansevieria cylindrica*. Cylindrical Sansevieria or Bowstring Hemp. This plant is composed of stiff, upright, slender, cylindrical, dark green leaves. *S. thyrsiflora* (Green Mottled Sansevieria) has upright, narrow, stiff, dark green leaves mottled with pale green. *S. trifasciata* var. *Laurentii* (Yellow-Margined Sansevieria) produces yellow-margined, narrow stiff leaves. *S. zeylanica* (Green Banded Sansevieria) produces stiff narrow leaves banded with pale green. (Liliaceae.)

*Yucca Treculeana*. Spanish Dagger or Spanish Bayonet. This tree-like plant produces numerous dark green, quill-like leaves terminating in a heavy thorn. It produces tremendous spikes of crowded, creamy-white, lily-like flowers. (Liliaceae.)

### ANNUAL AND PERENNIAL BEDDING PLANTS

No home garden is complete without an old fashioned flower bed and there is a wide variety of well adapted material from which the amateur gardener can choose. Ageratum, Aztec daisy, chrysanthemum, double gaillardia, gerbera, geranium, larkspur, marigold, phlox, petunia, snapdragon, stock, verbena and zinnia are but a few of the attractive flowering plants that thrive with a minimum of care.

TABLE 5. ANNUAL AND PERENNIAL BEDDING PLANTS

Name	Plant size		Flower description			Annual or Perennial	Season of bloom	Pro-fusion	Adap-tabil-ity
	Height (inches)	Spread (inches)	Size	Color	Type				
<i>Ageratum</i> : (Compositae)									
<i>A. conyzoides</i> (Floss-Flower)-----	24	24	sm.	blue-purple	head	A	summer	9	9
<i>A. Houstonianum</i> (Purple Ageratum)-----	24	24	sm.	purple	head	A	summer	9	9
<i>Althaea rosea</i> (Malvaceae) (Hollyhock)-----	72	24	lg.	varied	raceme	BA	summer	9	9
<i>Alyssum</i> : (Cruciferae)									
<i>A. argenteum (rostratum)*</i> (Yellow Alyssum)-----	6	6	sm.	yellow	raceme	A	spring	9	9
<i>A. compactum</i> (Compact Alyssum)-----	6	6	sm.	white	raceme	A	spring	9	9
<i>A. procumbens*</i> (Carpet of Snow)-----	4	4	sm.	white	raceme	A	spring	9	9
<i>A. saxatile</i> (Basket of Gold)-----	6	6	sm.	yellow	raceme	P	spring	9	7
<i>Antirrhinum majus</i> (Scrophulariaceae) (Snapdragon)-----	15	8	sm.	varied	spike	A	spring	9	9
<i>Arctotis</i> : (Compositae)									
<i>A. breviscapa*</i> (Stemless African Daisy)-----	24	8	lg.	orange	solitary	A	spring	9	8
<i>A. scapigera</i> (African Daisy)-----	24	8	lg.	salmon-red	solitary	A	spring	9	8
<i>A. stoechadifolia (aspera)*</i> (African Daisy)-----	24	8	lg.	yellow-rose	solitary	A	spring	9	8
<i>A. stoechadifolia</i> var. <i>grandis</i> (Blue Eyed African Daisy)-----	24	8	lg.	white	solitary	A	summer	9	9
<i>Aster novi-belgii</i> (Compositae) (Michaelmas Daisy)-----	30	24	lg.	purple	heads	P	fall	9	9
<i>Begonia</i> : (Begoniaceae)									
<i>B. argenteo-guttata</i> (Angel Wing Begonia)-----	24	30	sm.	varied	cluster	P	spring	6	8
<i>B. corallina</i> (Lucerne Begonia)-----	12	12	sm.	varied	cluster	P	spring	9	8
<i>B. Feastii</i> (Beefsteak Begonia)-----	12	24	sm.	rose	cluster	P	summer	9	8
<i>B. metallica</i> (Steel Begonia)-----	20	24	sm.	white-red	cluster	P	spring	2	8
<i>B. Rex</i> (Rex Begonia)-----	18	12	sm.	rose	cyme	P	winter	3	7

<i>B. semperflorens</i> (Common Begonia)-----	8	8	sm.	varied	cluster	P	continuous	7	9
<i>B. tuberhybrida</i> (Tuberous Rooted Begonia)-----	8	12	m.	varied	cluster	P	winter-spr.	6	0
<i>Bellis perennis</i> * (English Daisy)-----	18	8	m.	red-white	solitary	P	spring	9	7
<i>Calendula officinalis</i> (Pot Marigold)-----	18	18	lg.	yellow	solitary	A	spring	7	9
<i>Callistephus chinensis (hortensis)</i> (China Aster)-----	18	12	m.	varied	head	A	fall	9	7
<i>Campanula latiloba</i> * (Canterbury Bells)-----	18	8	sm.	blue	cluster	P	spring	8	8
<i>Capsicum</i> : <i>C. frutescens</i> var. <i>cerasiforme</i> (Cherry Pepper)-----	36	24	sm.	white	solitary	P	continuous	9	9
<i>C. frutescens</i> var. <i>cerasiforme</i> (Squash Pepper)-----	36	24	sm.	white	solitary	P	continuous	9	9
<i>Celosia</i> : <i>C. argentea</i> var. <i>Childsii</i> (Woolflower)-----	36	12	m.	red	cluster	A	spr-smr.	9	9
<i>C. argentea</i> var. <i>cristata</i> (Cockscomb)-----	36	24	lg.	red	cluster	A	summer	9	9
<i>C. argentea</i> var. <i>plumosa</i> (Feathery Cockscomb)-----	36	12	lg.	red	plume	A	summer	9	9
<i>Centaurea</i> : <i>C. Cyanus</i> (Cornflower; Bachelors-Button)-----	30	18	m.	varied	solitary	A	spring	9	9
<i>C. moschata</i> (Sweet Sultan)-----	18	10	lg.	purple-rose- white	solitary	A	spr-smr.	9	9
<i>Chrysanthemum</i> : <i>C. carinatum</i> (Tricolor or Summer Chrysanthemum)-----	36	18	lg.	various zones	solitary	A	summer	9	9
<i>C. coronarium</i> (Common Daisy or Garland Chrysanthemum)-----	36	36	lg.	varied	solitary	A	fall	9	9
<i>C. maximum</i> (Pyrenees Chrysanthemum, Shasta Daisy)-----	18	8	lg.	white	solitary	P	spring	9	9
<i>C. segetum</i> (Corn Marigold)-----	36	36	lg.	varied	solitary	A	fall	9	9
<i>Cicuta maculata</i> (Queen Anne's Lace)-----	18	12	lg.	white	umbel	A	summer	9	9

\*Not grown on the Experiment Station grounds.

Profusion: 9—Abundant; 5—moderate; 1—few.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Abbreviations: A—Annual; B—biennial; P—perennial; lg.—large; m.—medium; sm.—small; smr.—summer; sol.—solitary; spr.—spring.

TABLE 5. ANNUAL AND PERENNIAL BEDDING PLANTS—Continued

Name	Plant size		Flower description			Annual or Perennial	Season of bloom	Pro-fusion	Adap-tabil-ity
	Height (inches)	Spread (inches)	Size	Color	Type				
<i>Clarkia elegans</i> (Clarkia) (Onagraceae)	36	8	m.	pink-white	solitary	A	spring	5	5
<i>Coreopsis grandiflora</i> (Calliopsis) (Compositae)	24	18	m.	varied	solitary	A	summer	9	9
<i>Cosmos</i> : (Compositae)									
<i>C. bipinnatus</i> (Common Cosmos)	18	12	m.	varied	solitary	A	spring	6	6
<i>C. sulphureus</i> (Yellow Cosmos)	84	48	m.	orange	solitary	AP	continuous	9	9
<i>Cynoglossum amabilis</i> (Chinese Forget-Me-Not) (Boraginaceae)	15	15	sm.	blue-pink	sol., cluster	A	spring	9	9
<i>Delphinium</i> : (Ranunculaceae)									
<i>D. Ajacis</i> (Larkspur)	30	12	sm.	varied	spike	A	spring	9	9
<i>D. grandiflorum</i> (Bouquet Larkspur)	36	24	m.	blue	spike	P	spring	9	6
<i>Dianthus</i> : (Caryophyllaceae)									
<i>D. barbatus</i> (Sweet William)	8	6	m.	varied	solitary	P	spr.-smr.-fall	6	8
<i>D. caesiuss*</i> (Cheddar Pink)	8	3	m.	varied	panicle	P	spring	5	7
<i>D. Caryophyllus</i> (Carnation)	8	3	m.	varied	sol., panicle	P	spring	6	7
<i>D. chinensis</i> (Common Pink)	8	3	m.	varied	sol., panicle	P	spring	6	7
<i>D. latifolius</i> (Double Cluster Pink, Sweet Wivelsfield)	8	6	m.	varied	sol., panicle	P	spr.-smr.-fall	9	9
<i>D. plumaris</i> (Grass Pink)	8	3	m.	varied	panicle	P	spring	6	7
<i>Eschscholzia californica</i> (California Poppy) (Papaveraceae)	2	4	m.	yellow	solitary	A	spring	9	8
<i>Exacum affine</i> (Exacum) (Gentianaceae)	12	12	sm.	blue	solitary	P	winter	9	3
<i>Gaillardia pulchella</i> var. <i>picata</i> <i>Lorenziana</i> (Double Gaillardia) (Compositae)	18	12	lg.	varied	solitary	AP	spr.-smr.	9	9
<i>Gerberia Jamesoni</i> (Transvaal Daisy) (Compositae)	36	6	lg.	varied	solitary	P	spring	9	9
<i>Geum chiloense</i> ( <i>coccineum</i> ) (Geum) (Rosaceae)	24	12	sm.	red-yellow	solitary	P	summer	3	2

<i>Gomphrena globosa</i> (Globe Amaranth)-----	(Amaranthaceae)	12	18	sm.	varied	solitary	A	summer	9	9
<i>Gypsophila</i> :	(Caryophyllaceae)									
<i>G. elegans</i> var. <i>grandiflora</i> * (Baby's Breath)-----		10	10	sm.	white-rose	panicle	A	spring	8	7
<i>G. paniculata</i> (Perennial Baby's Breath)-----		24	10	sm.	white	panicle	P	spring	9	7
<i>G. repens</i> * (Rosy Baby's Breath)-----		6	10	sm.	white-rose	panicle	P	spring	8	7
<i>Helichrysum bracteatum</i> (Strawflower)-----	(Compositae)	24	6	m.	varied	solitary	A	spr.-smr.	9	9
<i>Helipterum</i> :	(Compositae)									
<i>H. (Rhodanthe) Manglesii</i> (Mangle's Everlasting)-----		18	8	m.	pink-red	sol., cluster	A	spring	9	9
<i>H. (Acroclinium) roseum</i> (Rose Everlasting)-----		24	8	m.	pink-white	sol., cluster	A	spring	9	9
<i>Heliotropium arborescens (peruvianum)</i> (Heliotrope)-----	(Boraginaceae)	18	18	sm.	lavender	heads	P	continuous	9	9
<i>Hibiscus Moscheutos</i> * (Marsh Mallow)-----	(Malvaceae)	60	24	lg.	rose	solitary	P	spring	7	9
<i>Hunnemannia fumariifolia</i> (Goldeneup; Mexican Poppy)-----	(Papaveraceae)	4	4	lg.	yellow	solitary	AP	spring	7	9
<i>Iberis</i> :	(Cruciferae)									
<i>I. amara (coronaria)</i> (Common or Rocket Candytuft)-----		12	12	sm.	white	cluster	A	spring	9	8
<i>I. sempervirens</i> (Evergreen Candytuft)-----		12	12	sm.	white	raceme	P	spring	9	9
<i>I. umbellata</i> (Purple Candytuft)-----		12	12	sm.	varied	cluster	A	spring	9	8
<i>Impatiens</i> :	(Balsaminaceae)									
<i>I. Balsamina</i> (Balsam, Touch-me-not)-----		10	6	m.	varied	spike	A	summer	9	9
<i>I. Hostii</i> (Impatiens)-----		24	24	m.	varied	solitary	P	continuous	7	7
<i>Lathyrus</i> :	(Leguminosae)									
<i>L. latifolius</i> (Perennial Sweet Peas)-----		trail- ing	trail- ing	m.	red-pink- white	solitary	P	spring	7	8
<i>L. odoratus</i> (Sweet Pea)-----		trail- ing	trail- ing	m.	varied	solitary	P	spring	9	8

\*Not grown on the Experiment Station grounds.

Profusion: 9—Abundant; 5—moderate; 1—few.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Abbreviations: A—Annual; B—biennial; P—perennial; lg.—large; m.—medium; sm.—small; smr.—summer; sol.—solitary; spr.—spring.



TABLE 5. ANNUAL AND PERENNIAL BEDDING PLANTS—Continued

Name	Plant size		Flower description			Annual or Perennial	Season of bloom	Profusion	Adaptability
	Height (inches)	Spread (inches)	Size	Color	Type				
<i>Lavandula officinalis</i> (Sweet Lavender)-----									
(Labiatae)									
<i>Limonium (Statice):</i> -----									
(Plumbaginaceae)									
<i>L. caspica*</i> -----	24	12	sm.	lilac	spike	P	spr.-smr.	6	7
(Lilac Statice)-----									
<i>L. latifolium</i> -----	24	12	sm.	lilac	spike	BP	spr.-smr.	9	9
(Wide-leaf Sea-Lavender)-----									
<i>L. Perezii*</i> -----	24	12	sm.	purplish	spike	BP	spr.-smr.	9	9
(Blue Statice)-----									
<i>L. sinuatum</i> -----	24	12	sm.	blue	spike	BP	spring	9	9
(Notch-Leaf Sea-Lavender)-----									
<i>L. Suworowi*</i> -----	24	12	sm.	blue-rose	spike	BP	spr.-smr.	9	9
(Rose Statice)-----									
<i>Lippia citriodora</i> -----	24	12	sm.	rose	spike	BP	spr.-smr.	9	9
(Lemon Verbena)-----									
(Verbenaceae)									
<i>Lobularia maritima</i> -----	60	24	sm.	white	spike	P	smr.-fall	2	4
(Sweet Alyssum)-----									
(Cruciferae)									
<i>Lupinus:</i> -----									
(Leguminosae)									
<i>L. albus*</i> -----	12	4	sm.	white	spike	A	spring	9	9
(White Lupine)-----									
<i>L. densiflorus*</i> -----	18	8	sm.	yellow	spike	A	spring	9	9
(Yellow Lupine)-----									
<i>L. polyphyllus</i> var. <i>Moerheimii</i> -----	18	8	sm.	varied	spike	P	spring	9	9
(Washington Lupine)-----									
(Cruciferae)									
<i>Mathiola incana</i> -----	15	10	sm.	varied	spike	P	spring	8	9
(Stock, Gilliflower)-----									
(Compositae)									
<i>Matricaria inodora (grandiflora)*</i> -----	12	9	sm.	white	cluster	A	spring	9	9
(Feverfew)-----									
(Labiatae)									
<i>Mentha:</i> -----									
(Labiatae)									
<i>M. piperita</i> -----	10	trail-	sm.	greenish	spike	P	spr.-smr.	4	9
(Peppermint)-----		ing							
<i>M. spicata*</i> -----	10	trail-	sm.	greenish	spike	P	spr.-smr.	4	9
(Spearmint)-----		ing							
(Nyctaginaceae)									
<i>Mirabilis Jalapa</i> -----	36	24	m.	varied	solitary	P	continuous	9	9
(Four o'Clock)-----									
(Boraginaceae)									
<i>Myosotis:</i> -----									
(Boraginaceae)									
<i>M. alpestris*</i> -----	12	10	sm.	blue	sol.-cluster	P	spring	7	1
(Alpine Forget-Me-Not)-----									

<i>M. scorpioides (paulstris)</i> (Everblooming Forget-Me-Not)-----	12	18	sm.	blue	sol.-cluster	P	continuous	6	1
<i>Papaver:</i> <i>P. nudicaule</i> (Iceland Poppy)-----		12	4	lg.	varied	P	spring	9	6
<i>P. orientalis</i> (Oriental Poppy)-----	36	6	lg.	mostly red	solitary	P	spring	6	7
<i>P. Rhoeas</i> (Corn or Shirley Poppy)-----	24	4	lg.	varied	solitary	A	spring	6	7
<i>Pelargonium:</i> <i>P. domesticum</i> (Fancy Geranium)-----		12	12	sm.	varied	P	continuous	6	6
<i>P. grandiflorum</i> (Lady Washington Geranium)-----	18	12	m.	varied	panicle	P	continuous	7	2
<i>P. odoratissimum</i> (Spice Geranium)-----	18	12	m.	pink-cerise	panicle	P	spring	3	6
<i>P. peltatum</i> (Ivy-Leaf Geranium)-----	trailing	18	m.	varied	panicle	P	continuous	3	9
<i>P. zonate x P. inquinans</i> (Common Geranium)-----	36	36	sm.	red	panicle	P	continuous	9	9
<i>Peperomia:</i> <i>P. obtusifolia</i> (Peperomia)-----		15	15	sm.	greenish	P	summer	2	9
<i>P. Sandersii</i> (Watermelon Begonia)-----	6	6	sm.	pink	spike	P	continuous	2	3
<i>Petunia hybrida</i> (Petunia)-----	12	12	m.	varied	solitary	AP	spring	9	9
<i>Phlox:</i> <i>P. Drummondii</i> (Drummond's Phlox)-----		12	8	m.	varied	A	spring	9	9
<i>P. Drummondii</i> var. <i>stellaris</i> (Star Phlox)-----	6	12	sm.	varied	panicle	A	summer	9	9
<i>P. paniculata</i> (Summer Phlox)-----	6	12	m.	varied	panicle	P	summer	5	5
<i>Physalis Alkekengi</i> var. <i>Francheti</i> (Chinese Lantern Plant)-----	18	8	sm.	white	solitary	A	spr.-smr.	7	7
<i>Physostegia virginiana</i> (Dragon's Head)-----	12	6	sm.	pink	spike	P	spring	9	9
<i>Portulaca grandiflora</i> (Moss Rose)-----	6	6	m.	varied	solitary	A	summer	9	9

\*Not grown on the Experiment Station grounds.

Profusion: 9—Abundant; 5—moderate; 1—few.

Adaptability: 9—Excellent; 5—fair; 1—poor.

Abbreviations: A—Annual; B—biennial; P—perennial; lg.—large; m.—medium; sm.—small; smr.—summer; sol.—solitary; spr.—spring.

TABLE 5. ANNUAL AND PERENNIAL BEDDING PLANTS—Continued

Name	Plant size		Flower description			Annual or Perennial	Season of bloom	Pro-fusion	Adap-tability
	Height (inches)	Spread (inches)	Size	Color	Type				
<i>Primula</i> : (Primulaceae)									
<i>P. malacoides</i> (Primula)-----	20	8	sm.	lilac-rose	umbel	P	spring	9	6
<i>P. obconica</i> (Primula)-----	6	4	m.	lilac	umbel	P	spring	9	6
<i>Reseda odorata</i> (Resedaceae)									
(Mignonette)-----	12	4	sm.	greenish	spike	A	summer	6	9
<i>Rudbeckia</i> : (Compositae)									
<i>R. laciniata</i> var. <i>hortensia</i> (Golden Glow)-----	48	12	lg.	yellow	solitary	P	fall	9	9
<i>R. triloba</i> (Brown Eyed Susan)-----	30	30	m.-lg.	yellow	solitary	A	spring	9	9
<i>Salpiglossis sinuata</i> (Solanaceae)									
(Painted Tongue)-----	4	2	lg.	varied	solitary	AP	spring	9	4
<i>Saxifrage sarmentosa</i> (Saxifragaceae)									
(Strawberry Geranium)-----	4	12	m.	white	spike	P	spring	2	8
<i>Scabiosa</i> (Mourning Bride, Pin Cushion Flower): (Dipsaceae)									
<i>S. atropurpurea</i> (Sweet Scabiosa)-----	30	12	sm.	varied	solitary	A	summer	5	6
<i>S. caucasica</i> * (Caucasian Scabiosa)-----	30	12	sm.	blue-pink	solitary	P	summer	5	9
<i>Schizanthus pinnatus</i> ( <i>grandiflorus</i> ) (Solanaceae)									
(Butterfly Flower)-----	6	6	m.	varied	solitary	A	spring	9	7
<i>Solanum Pseudo-Capsicum</i> (Solanaceae)									
(Jerusalem Cherry)-----	12	12	sm.	white	solitary	P	continuous	8	9
<i>Strobilanthus isophyllus</i> (Acanthaceae)									
(Bedding Strobilanthus)-----	24	18	m.	lavender	solitary	P	continuous	9	9
<i>Tagetes</i> : (Compositae)									
<i>T. erecta</i> (Aztec or African Marigold)-----	18	12	lg.	orange-yellow	solitary	A	spr.-fall	9	9
<i>T. patula</i> (French Marigold)-----	12	10	m.	orange-brown	solitary	A	spr.-fall	9	9
<i>Tithonia rotundifolia</i> (Compositae)									
(Aztec or Mexican Daisy)-----	72	10	lg.	orange	solitary	A	spr.-smr.	9	9
<i>Torenia Fournieri</i> (Scrophulariaceae)									
(Blue Torenia)-----	12	8	sm.	blue-ivory	solitary	A	spr.-smr.	6	5
<i>Trachelium coeruleum</i> (Campanulaceae)									
(Thoroughwort)-----	18	12	sm.	blue	heads	AP	spr.-smr.	9	7

<i>Trachymene (Didiscus) caerulea</i>	(Umbelliferae)	24	12	sm.	blue	umbel	A	spring	9	4
(Blue Lace Flower)-----										
<i>Tropaeolum majus</i>	(Tropaeolaceae)	12	12	m.	varied	solitary	A	summer	9	9
(Nasturtium)-----										
<i>Venidium decurrens</i>	(Compositae)	12	6	lg.	yellow	heads	AP	spr.-smr.	8	7
(Venidium)-----										
<i>Verbena hortensis</i>	(Verbenaceae)	trailing	trailing	sm.	varied	umbel	P	spr.-smr.	9	9
(Common Verbena)-----										
<i>Vinca:</i>	(Apocynaceae)									
<i>V. minor</i>										
(Trailing Periwinkle)-----		4	4	m.	blue	solitary	P	continuous	6	9
<i>V. rosea</i>										
(Madagascar Periwinkle)-----		8	4	m.	rose-white	solitary	P	continuous	9	9
<i>Viola:</i>	(Violaceae)									
<i>V. cornuta*</i>										
(Tufted Pansy)-----		4	4	sm.	rose	solitary	AP	spring	5	9
<i>V. odorata</i>										
(Sweet Violet)-----		4	4	sm.	purple	solitary	P	spring	9	9
<i>V. Patrinii</i>										
(Lavender Violet)-----		4	4	sm.	lavender	solitary	P	spring	9	9
<i>V. rosina</i>										
(Rose Violet)-----		4	4	sm.	rose	solitary	P	spring	5	9
<i>V. tricolor var. hortensis</i>										
(Swiss Pansy)-----		4	4	lg.	varied	solitary	AP	spring	7	7
<i>Zinnia elegans</i>	(Compositae)									
(Zinnia)-----		24	12	lg.	varied	solitary	A	continuous	9	9

\*Not grown on the Experiment Station grounds.

Profusion: 9—Abundant; 5—moderate; 1—few.

Adaptability: 9—Excellent; 5—fair; 1—poor.

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## WILD FLOWERS

Flower lovers who visit the Lower Rio Grande Valley are usually amazed at the profusion of wild flowers to be seen along the roadsides and in Valley fields and meadows. Prickly-Poppy in several pastel shades, wild Verbena, Evening Primrose, Galliardia, Phlox, Coreopsis, Globe Amaranth, Day-Flower, Wild Petunia, Sand-Verbena, Mallow, Wild Hibiscus, Wild Turk's Cap, numerous species of daisy, Gentian, Wild Vetch, several species of sunflower, and many other attractive flowering plants have been used by the Highway Department in roadside beautification and soil erosion control.

*Abronia umbellata*. Pink Sand-Verbena, Heart's Delight. Low growing, succulent plants having fleshy stems; thick, sticky, bluish-green, ovate leaves; and showy, verbena-like heads of rosy-lavender flowers. Found in the region near Falfurrias. *A. fragrans* (White Sand-Verbena) is occasionally seen. (Nyctaginaceae.)

*Abutilon incanum*. Woolly Indian Mallow. This plant produces thin, velvety leaves and yellow mallow flowers. (Malvaceae.)

*Abutilon pedunculare*. Large Flowered Indian Mallow. A plant up to eighteen inches in height, which produces thick, velvety, heart-shaped leaves and 5-petaled orange-yellow, mallow flowers.

*Acerates auriculata*. Auricled Milkweed. A leafy plant up to 2 feet high that produces dull green, leathery, oblong leaves and clusters of hooded, greenish flowers along the upper stem. (Asclepiadaceae.)

*Acleisanthes obtusa (Berlandieri)*. Angels' Trumpet, Four O'Clock. A perennial vining plant that produces small, triangular, succulent leaves and fragrant white, tubular flowers one to two inches long that open in the evening and close the following morning. (Nyctaginaceae.)

*Ageratum*. Floss Flower, Boneset. These plants produce clustered heads of flowers that consist of very small tubular florets having numerous, conspicuous stamen. *A. corymbosum* is Purple Boneset, a perennial plant that produces heads of showy, bright purple to blue flowers. The plant is bushy; up to 3 feet tall; and has bright green, triangular leaves. (Compositae.)

*Amblyolepsis setigera*. Honey Daisy. This annual plant reaches a height of about 15 inches and produces smooth, bright green leaves and many fragrant yellow flowers about one inch in diameter. (Compositae.)

*Ammoselinum Popei*. Sand-Parsley. A small annual plant that forms a low rosette of very finely cut, deep green leaves and umbels of very small, white flowers on the tips of slender stalks. The flowers are followed by spiny seed cases  $\frac{1}{8}$ -inch long. (Umbelliferae.)

*Aphanostephus humilis*. Poorland or Humble Daisy. A common lawn daisy that produces small, narrow, toothed or wavy edged leaves and small white flowers that are tinged with purple. (Compositae.)

*Aphanostephus skirrobasis*. Large White Daisy. An annual plant that produces small, toothed or wavy edged, narrow leaves and white flowers tinged with purple which are one inch to one and a half inches in diameter.

*Aplopappus (Isocoma) Drummondii*. Drummond's Yellow Daisy. A shrubby leafy, annual plant that produces terminal clusters of yellow flowers in erect, small heads. (Compositae.)



*Aplopappus megacephalus*. Large Flowered Aplopappus. This plant comes from a perennial root and produces numerous stems up to 3 feet high; numerous deep green, toothed leaves, and clusters of yellow flowers.

*Argemone platyceras* var. *hispida*. White Prickly-Poppy. The flowers of this species are papery white. (Papaveraceae.)

*Argemone mexicana*. Yellow Prickly-Poppy. This species produces yellow flowers.

*Argemone sanguinea*. Red Prickly-Poppy. This species produces flowers that range in color from pink to rosy red.

Three species of these annual prickly plants are native to the Lower Rio Grande Valley. They make thistle-like plants about 2 feet high that have pale green, prickly foliage and large showy flowers.

*Asclepias*. Milkweed. Several kinds of milkweeds are found in this region, some of which are of ornamental value. All of them have milky sap and long seed pods filled with plumose seed. *A. tuberosa*, the showiest of the native Milkweeds, has been described under Shrubs. *A. texana* is the common Milkweed of southwestern Texas. It is a leafy plant up to 2 feet high, that produces smooth, oblong, blue-green leaves and clusters of hooded, white flowers along the upper stem. (Asclepiadaceae.)

*Aster tenuifolius*. Salt Marsh Aster. A tall growing, slender annual plant that reaches a height of five feet. It produces small dark green lanceolate leaves and lavender flowers. (Compositae.)

*Astragalus Nuttallianus*. Wild Vetch. A low growing sprawling annual plant that produces slender, weak stems; very small, dark green, pinnate leaves; clusters of very small, pea-shaped, purple flowers; and small brown seed pods. These plants form dense mats of foliage. (Leguminosae.)

*Baileya multiradiata*. Paper Daisy. A perennial plant about one foot in height that produces woolly, lobed leaves and papery, pale yellow flowers on long leafless stalks. (Compositae.)

*Boerhaavia decumbens*. Wine-Flower. A low growing species that produces tiny wine-red flower clusters on the tips of long, bare, flower stalks and hairy 5-ribbed fruits. (Nyctaginaceae.)

*Boerhaavia erecta*. Erect Boerhaavia. An erect plant up to 8 inches high that produces tiny white flower clusters and inverted, cone-shaped fruits on the ends of slender, bare stalks.

*Borrchia frutescens*. Sea Ox-Eye Daisy. This perennial plant reaches a height of 2 feet. It produces thick, whitish, elliptic leaves and yellow, daisy-like flowers having few rays. (Compositae.)

*Brazoria truncata*. Rattlesnake Mint. An upright, annual plant having square stems, bright to bronzy green serrated leaves and terminal spikes of pinkish tubular flowers. (Labiatae.)

*Callirrhoe digitata*. Annual Wine-Cup, Claret-Cup. Spreading plants having wine-red, holly-hock-like flowers. (Malvaceae.)

*Callirrhoe involucrata*. Perennial Wine-Cup; Claret-Cup. This plant consists of a heavy, tuberous root, and spreading, prostrate branches; deeply cut, dark green leaves; and wine-red, holly-hock-like flowers.

An annual and a perennial form of *Callirrhoe* are found in this region.

Both produce dull green, digitate leaves; and wine-red, holly-hock-like flowers. White flowered varieties are occasionally found.

*Callisia repens*. Callisia, Dwarf Wandering Jew. This small, perennial, trailing plant produces succulent, bright green stems that root at the nodes; and small bright green leaves. The plant is similar in appearance and habit of growth to the commonly grown Wandering Jew except that it is much smaller and has no purplish coloration nor striping.

*Calyptrocarpus vialis*. Prostrate Sunflower. A small, prostrate, perennial plant that produces bright green, ovate leaves and very small, pale yellow flowers on the tips of the branches. (Compositae.)

*Capsicum frutescens*. Chiliquipin, Bird Pepper. An evergreen bush that produces dark green, ovate leaves, small, white, solanaceous flowers and a profusion of small, orange-red, hot peppers which are useful in the making of pepper sauce. (Solanaceae.)

*Cassia littoralis*. Sensitive-Pea. This vine is similar to the Partridge Pea except that the seed pods are heavily covered with short hairs. (Leguminosae.)

*Cassia texana*. Partridge-Pea. A delicate trailing vine having small, sensitive pinnate leaves, orange-yellow flowers and flat pods.

*Castilleja indivisa*. Texas Painted-Cup. These plants are found growing in the region north of Edinburg. They produce light green, lanceolate leaves, and spikes of very small, tubular red flowers surrounded by colored bracts, in pastel shades of rose and tan. The Indian Paint Brush (*C. Lindheimeri*) is similar to the above except that the colored bracts are more varied and more delicate in color. (Scrophulariaceae.)

*Centaurea americana*. Star-Thistle, Sweet Sultan. This annual plant is not a prickly plant but derives the name Star-Thistle from the resemblance of the flowers to those of the true thistles. It reaches a height of about 2 feet and produces light green, narrow-lanceolate leaves and flat heads of fragrant lavender and white, composite flowers. (Compositae.)

*Centaurium (Erythraea) texense*. Texas Pink. An annual, branching plant about 10 inches in height that produces pale green, lanceolate leaves and bright pink, star-shaped flowers. (Gentianaceae.)

*Centrosema (Bradburya) virginianum*. Butterfly-Pea. A twining Gulf Coast vine having thread-like stems; trifoliolate leaves; pale purple, pea-shaped flowers similar to sweet peas; and flat pods ending in a long, sharp point. (Leguminosae.)

*Cevallia sinuata*. Cevallia. These perennial plants reach a height of 2 feet. They produce white branches; wavy, lobed leaves; and terminal plumose, flowering heads. The entire plant is covered with stinging hairs. (Loasaceae.)

*Chamaesaracha sordida*. Ground Saracha. A low, spreading perennial plant somewhat similar in appearance to the Mexican Evening-Primrose plant. It produces grayish-green, wavy edged leaves; pale yellow, 5-angled, saucer-shaped flowers which are followed by almost white pea-like berries. (Solanaceae.)

*Chrysopsis pilosa*. Golden Aster. This is a perennial gray-green plant growing as a slender cluster of stems about 8 inches high covered with

gray-green, hairy, oblong leaves. It produces bright yellow flowers. (Compositae.)

*Cirsium (Carduus) austrinum*. Red Powder-Puff Thistle. Flowers range in color from purplish rose to pink. (Compositae.)

*Cirsium (Carduus) horridulum*. Bull Thistle. This plant produces yellow flowers.

The Powder-Puff Thistles are found in the Lower Rio Grande Valley. Both species produce flowers having ornamental value. These thistles reach a height of 2 feet and produce dark green, very prickly leaves and "powder puff" heads of prickly flowers which are followed by prickly pods.

*Clappia suaedaefolia*. Clappia Daisy. A perennial plant that produces toothed leaves and yellow flowers. (Compositae.)

*Clitoria mariana*. Porcelian Butterfly-Pea. This sandy-land Gulf Coast pea vine is similar to the Butterfly-Pea except that the seed pods are much shorter. (Leguminosae.)

*Commelina*. Day-Flower, Widow's Tears. These Day-Flowers produce showy, bright blue flowers. *C. angustifolia* produces flowers from  $\frac{1}{2}$  to  $1\frac{1}{2}$  inches across. *C. virginica*, the Gulf Coast species, produces more delicate leaves and smaller flowers. *C. crispa* produces crispy, lavender-blue flowers in the tips of the branches. (Commeliaceae.)

*Coreopsis basalis*. Golden-Wave Calliposis, Tickweed. An annual, bushy plant that produces numerous, small, linear leaves and a profusion of flat yellow flowers having brown centers. (Compositae.)

*Coreopsis cardaminefolia*. Cress-Leafed Coreopsis. A yellow flowered annual coreopsis having a brown center. It produces dull green, heart-shaped leaves and yellow, daisy-like flowers on long, slender stems.

*Coreopsis nuescensis*. Sand-Dollars. A less bushy, weedy plant than the ones mentioned above. It produces a perennial rosette of bright green, deeply cut leaves and long stems topped by yellow, daisy-like flowers. A pale lavender-colored line runs about midway across each petal, completely circling the flower.

*Corydalis curvisiliqua*. Scrambled Eggs. A spreading annual plant, 2 to 4 inches high, that produces deep green, finely cut foliage; very small, bright yellow, spurred flowers; and small 4-angled seed pods. (Papaveraceae.)

*Crotalaria incana*. Rattlebox. This annual *Crotalaria* was probably introduced into this region and has become an escape. It reaches a height of five to seven feet and produces deep green, trifoliate leaves; spikes of deep yellow pea-shaped flowers; and cylindrical tan seed pods that rattle in the wind when they mature. (Leguminosae.)

*Cynoctonum Mitreola*. Mitrewort. A perennial plant that reaches a height of about 1 foot. It produces fleshy ovate leaves and curved, one-sided, flower spikes bearing small, white flowers. The seed pods are mitre shaped. (Loganiaceae.)

*Dalea (Parosela) aurea*. Golden-Dalea, Parosela. A branching plant up to 1 foot high that produces grayish-green, compound leaves, and long wiry stems topped by pale, thick, furry, flower spikes circled with tiny yellow flowers. (Leguminosae.)

*Dalea (Parosela) lasiathera*. Purple-Dalea, Parosela. A low, branching plant similar in appearance to Golden Dalea. The thick, furry flower spikes are circled with tiny, purple flowers.

*Delphinium virescens (albescens)*. White Larkspur. This small plant comes from a tuber. It produces a leafy top of dull green, deeply cut leaves. The spikes of white to pale lavender flowers are about 3 inches long and are thick and somewhat velvety in texture. (Ranunculaceae.)

*Descurainia (Sophia) pinnata*. Tansy-Mustard. A small, annual plant forming a flat rosette of bright green, finely cut leaves and elongated, terminal clusters of small, greenish flowers which are followed by spikes of ornamental seed cases somewhat resembling those of the Pepper Grass. (Cruciferae.)

*Dichondra repens* var. *caroliensis*. Moneyweed. These tiny plants often form thick mats in the lawn. They produce many creeping stems covered with very small, kidney-shaped to oval leaves, and a few small, greenish flowers. (Convolvulaceae.)

*Dyschoriste (Calophanes) linearis*. Polkadot-Plant. A plant 6 to 10 inches high that produces dark green, linear to spatulate leaves, tubular purplish flowers with raised dots in the throats; and oblong seed pods. (Acanthaceae.)

*Dyssodia (Thymophylla) tenuiloba*. Tiny Tim. Small annual plants that produce dark green, finely cut foliage having a carrot-like odor and very small, deep yellow, composite flowers. *Dyssodia Berlandieria* is the Gulf Coast species. It produces plants about 4 inches high, having very dark green, fern-like foliage and a profusion of small, deep yellow, daisy-like flowers. (Compositae.)

*Erigeron philadelphicus*. Philadelphia Lawn Daisy. This species produces soft, rounded, hairy leaves, drooping buds and pinkish to white flowers having yellow centers. (Compositae.)

*Erigeron repens*. Sea Beach Daisy. This Gulf Coast species is similar in appearance to the above except that it is a small plant forming a low rosette of creeping stems that root at the nodes, and produces smaller flowers.

*Eupatorium azureum*. Showy Thoroughwort. A sprawling, annual plant that produces triangular leaves and light blue flowers. (Compositae.)

*Eupatorium incarnatum*. Pink Thoroughwort. This vine-like, annual plant produces numerous small white flowers in the fall that turn red with age.

*Euphorbia bicolor*. Gulf Coast Milkweed. This species produces narrow upper leaves with showy, white markings. (Euphorbiaceae.)

*Euphorbia marginata*. Snow-on-the-Mountain. This plant produces broad-ovate upper leaves with showy, white margins and splotches.

Two species of Snow-on-the-Mountain are found in almost every part of Texas. They produce plants up to 30 inches high having milky sap and light green, ovate leaves that have ornamental, white markings; and terminal clusters of knotted, inconspicuous flowers.

*Eustoma Russellianum*. Purple Gentian, Bluebells. These plants produce purplish-blue flowers. (Gentianaceae.)

*Eustoma Russellianum* var. *gracile*. Bluebells, Yellow-Centered Gentian. This plant produces yellow centered flowers.

These valuable annual plants produce light green, lanceolate leaves and showy bell-shaped flowers.

*Evolvulus sericeus*. Dwarf Morning-Glory. A very small, spreading plant. It produces very small, light green, linear leaves and very small, solitary, morning-glory-like flowers which are light blue to white in color. (Convolvulaceae.)

*Foeniculum vulgare (foeniculum)*. Fennel, Yellow Queen Anne's Lace. This native species produces finely cut leaves and flat, greenish-yellow flower heads on the top of large plants. (Umbelliferae.)

*Gaillardia amblyodon*. Red Gaillardia, Fire-Wheel Gaillardia. This is the sandy land species. The ray flowers are widely spaced, giving the flower the appearance of a sparsely petaled daisy. (Compositae.)

*Gaillardia aristata*. Thick-Leaf Gaillardia. A plant that produces pale green, thick, coarsely toothed leaves and red and yellow, daisy-like flowers.

*Gaillardia chrysantha*. Yellow Gaillardia. A plant that produces attractive, pure yellow flowers.

*Gaillardia pulchella* var. *picta*. Annual Gaillardia, Rose-ring. This plant produces the showy red and yellow daisy-like flowers that are familiar to all Valley flower lovers.

*Gaura odorata (Drummondii)*. Bee-Flower. This species produces wavy edged, lanceolate leaves and small white flowers that turn pink the second day. (Onagraceae.)

*Gaura parviflora*. Velvet Leaf. This plant produces velvety lanceolate leaves and pink to rose colored flowers.

*Gaura sinuata*. Wild Honeysuckle. Plants of this species produce hairy, wavy edged, linear leaves which are toothed and small, white flowers which turn pink the second day.

*Gaura villosa*. Woolly Gaura. A very branching plant having small, woolly, toothed leaves and small racemes of pink flowers on a long stem.

Four species of the so-called wild Honeysuckle plants are found in this region. They are usually tall, slender, branched plants, each branch terminating in a fragrant, slender, drooping spike of pink to rose colored flowers which open in the evening.

*Gilia incisa*. False Flax. A slender, branching, annual plant about 8 inches in height that produces deeply toothed leaves and 5-lobed, solitary, blue flowers. (Polemoniaceae.)

*Gomphrena decumbens*. Texas Globe Amaranth. This plant reaches a height of about 18 inches. It produces medium green, ovate leaves, and stiff globular heads of purplish-red flowers. (Amaranthaceae.)

*Gomphrena Neallayi*. Coast Globe Amaranth. A less vigorous plant that produces cylindrical heads of flowers which are less showy than those of *G. decumbens*.

Two species of Globe Amaranth, or Bachelor Buttons, are native to South Texas. These attractive annual everlastings are useful in drouthy locations.

*Grindelia inuloides*. Gum Plant, Gum Daisy. This annual plant produces closely toothed, dull green leaves, gummy, sticky buds and clusters of yellow flowers. (Compositae.)

*Gutierrezia dracunculoides*. Small-Headed Matchweed. This plant produces its composite flowers in clusters. (Compositae.)



*Gutierrezia texana*. Large-Headed Broomweed. Plants of this species produce very small, solitary, composite flowers.

These annual, weedy bushes are about 18 inches in height. They produce wiry stems, small, narrow leaves, and tiny yellow flowers in the fall.

*Heimia salicifolia*. Heimia. A perennial plant up to 3 feet in height that produces paired, lanceolate leaves and deep yellow flowers. (Lythraceae.)

*Helenium elegans*. Sneezeweed. A plant from 12 to 15 inches in height that produces lanceolate leaves and yellow flowers (1 inch in diameter) having greenish centers. (Compositae.)

*Helianthus argophyllus*. Silverleaf Sunflower. A woolly annual plant up to 18 inches in height that produces silvery-gray leaves and solitary, yellow flowers having dark centers. (Compositae.)

*Helianthus debilis (cucumerifolius)*. Sand Sunflower. An annual plant 3 to 4 feet high that produces ovate-lanceolate, medium green leaves and solitary deep yellow flowers having dark centers. The branches are spotted with purple.

*Helianthus Maximiliani*. Maximilian Sunflower. A perennial plant 5 to 6 feet in height that produces annual stalks bearing lanceolate to linear leaves and solitary yellow flowers having dark centers.

*Heliotropium curassavicum*. Seaside Heliotrope. This plant reaches a height of one foot and requires a moist location. It produces fleshy, wedge-shaped leaves and a few branches which terminate in paired spikes of very small, white flowers, the tips of the flowering spikes being coiled. (Boraginaceae.)

*Heliotropium tenellum*. Wild White Heliotrope. This species differs from the above in having linear leaves. It produces a profusion of blooms throughout the year. (*H. indicum* is the introduced, blue flowered species.)

*Heterotheca subaxillaris*. Camphor-Weed. A plant about a foot high that produces sticky, hairy leaves having a camphor odor, and yellow flowers. (Compositae.)

*Hoffmanseggia densiflora*. Gyp Plant. This peculiar plant comes from a large, hard tuber. It produces a few fern-like leaves and bright yellow, bean-shaped flowers. (Leguminosae.)

*Houstonia humifusa*. Houstonia, Innocence. A sandy land, low growing annual that produces many forked, wiry, square stems; small, narrow leaves; and a profusion of very small pink flowers. The peculiar forking of the branches gives the plant a flat-topped appearance. (Rubiaceae.)

*Indigofera miniata*. Butterfly Shoestring-Pea, Scarlet Pea, Indigo Plant. A small prostrate native plant having small pinnate leaves covered with very fine hairs; pea-shaped, deep pink to pale scarlet flowers in slender clusters; and straight, thick, angled pods. (Leguminosae.)

*Jatropha cathartica*. Geranium Flowered Jatropha, Cactus Geranium. This peculiar ornamental plant comes from a large, hard, top-shaped, gray tuber. It produces succulent, blue-green stems; deeply cut, succulent, blue green leaves, and small, bright rosy-red, geranium-like flower clusters. (Euphorbiaceae.)

*Jussiae diffusa*. Water-Primrose. This water plant produces the typical Evening-Primrose flowers which are yellow in color. (Onagraceae.)

*Krameria secundifolia*. Kramer's Wine-Flower. This perennial plant is mentioned for identification purposes only. It is a prostrate plant that produces dull green, hairy, linear leaves, small, wine-red flowers; and hard, spiny, one-seeded fruits. (Leguminosae.)

*Lepachys (Ratabida) columnaris*. Long Headed Cone-Flower, Mexican Hat. This plant produces flowers having a 2-inch long, brown, center cone surrounded by bright yellow ray flowers. (Compositae.)

*Lepachys columnaris* var. *pulcherrima*. Long Headed Cone-Flower, Nigger Toe. This variety produces flowers also having a 2-inch long, brown center cone but surrounded by maroon colored rays.

*Lepachys peduncularis* var. *picta*. Long Headed Cone-Flower, Thimble Flower. Plants of this species produce slender, greenish colored cones surrounded by highly colored rays. The leaves of this plant are thick.

Several kinds of Coneflowers are found in this region and are useful in any wild flower garden. They produce deeply cut, dull green, rough leaves and long wiry stems.

*Lepidum virginicum*. Pepper-Grass. This dainty little plant reaches a height of 18 inches. It produces very narrow, toothed, bright green leaves and spikes of very small, 4-petaled, white flowers which are followed by numerous peppery, ornamental seed-cases. These seeds are greatly relished by the birds. (Cruciferae.)

*Lesquerella grandiflora*. Large-Flowered Bladderpod. These plants produce flowers  $\frac{1}{2}$ -inch in diameter. (Cruciferae.)

*Lesquerella lasiocarpa* var. *Berlandieri*. Small-Flowered Bladderpod. Plants of this species produce flowers  $\frac{1}{8}$ -inch in diameter.

These small annual plants produce clusters of wedge-shaped leaves on slender stems bearing small, linear leaves; and small, bright yellow flowers which are followed by small, bladder-like seed capsules.

*Limonium brasiliense*. Sea-Lavender, Statice. This branching, sea-coast plant reaches a height of 2 feet. It produces a low rosette of oblong leaves and terminal heads of very small, crowded, crisp, white to lavender flowers on the tips of long, wiry, leafless stalks. (Plumbaginaceae.)

*Linum Berlandieri*. Berlandier's White Flax. These plants produce small white flowers. (Linaceae.)

*Linum multicauli*. Small Yellow Flax. Plants that produce flowers up to  $\frac{3}{4}$ -inch in diameter.

*Linum sulcatum*. Grooved Yellow Flax. These plants produce flowers 1-inch in diameter.

Three species of flax are found in this region. They produce slender, branching plants having small, lanceolate leaves and flowers that shed quickly.

*Lippia incisa*. Frogfruit. A small plant that produces flowers  $\frac{1}{8}$ -inch in diameter. (Verbenaceae.)

*Lippia nodiflora*. Carpet Weed. This species produces small flowers  $\frac{1}{4}$ -inch in diameter. The plant is about 5 inches high.

Two species of this perennial plant are found in the Lower Rio Grande Valley. They produce small mats of wiry stems; finely toothed, rough, small leaves; and small, peculiar, thimble-shaped flowers having elongated, brownish centers surrounded by tiny white flowers.

*Lithospermum matamorensis*. Rio Grande Puccoon. A low growing perennial that produces very small, bright green, spatulate leaves; and very small, terminal, solitary white flowers. (Boraginaceae.)

*Lobelia puberula*. Blue Lobelia. A branching, annual plant that produces many slender stems; toothed, lanceolate leaves; and small, tubular, bright blue flowers having white centers. (Lobeliaceae.)

*Lupinus subcarnosus*. Sandy Land Bluebonnet. The Texas state flower is a native of East Texas and is probably an escape in this region. It produces spikes of blue, pea-shaped flowers having a few red splotches. (Leguminosae.)

*Lupinus texensis*. Bluebonnet. This species produces spikes of purplish-blue pea-shaped flowers.

*Lythrum lanceolatum*. Loosestrife. A small, annual plant having narrow-lanceolate to linear leaves folded against the slender stems and small, bright bluish-violet flowers borne in the leaf axils. (Lythraceae.)

*Macrosiphonia macrosiphon*. Angel Trumpets. This perennial plant resembles the milkweeds and has long-ovate, wavy edged leaves that are covered with small white hairs on the under side. It produces a few, tubular, white flowers somewhat like periwinkles except that the corolla tubes are 6 to 8 inches long. (Apocynaceae.)

*Malvastrum americanum*. False-Mallow. This weed is mentioned for identification purposes only. It reaches a height of about 30 inches and produces rough, serrated, dull green, ovate leaves and pale yellow flowers on short stalks followed by small, flattened, woolly capsules. (Malvaceae.)

*Marsilea vestita*. Four-Leaf-Clover Fern. A small fern that is found growing in moist locations. The name is descriptive of the plant. This attractive border plant can be used where constant moisture is available. (Marsiaceae.)

*Melampodium cinereum*. Rock Daisy. This small annual plant produces wavy edged leaves crowded along the stems and white flowers having yellow centers. (Compositae.)

*Melampodium cinereum* var. *ramosissimum*. Blackfoot Daisy. A small annual plant that produces broad-ovate leaves and small white flowers having toothed and fringed petals and yellow centers.

*Menodora heterophylla*. Redbuds, Menodora. These small, perennial plants produce small, gray-green, deeply cut leaves and small red buds that open into yellow flowers, the outside of which are red. (Oleaceae.)

*Mentzelia oligosperma*. Mentzelia, Good Mother. A prickly haired, perennial, bushy plant. It is similar in appearance and flowers to the cultivated *Corchorus* (*Kerria japonica*). It produces dull green, toothed, prickly haired, lanceolate leaves, and 5-petaled, flat, golden-yellow flowers. *M. nuda* produces 10-petaled flowers. (Loasaceae.)

*Micromeria pilosiuscula*. Micromeria. A small, bushy plant that produces square stems, ovate leaves and very small, lavender, 2-lipped tubular flowers, borne in the axils of the leaves. (Labiatae.)

*Mimosa malacophylla*. Vine Mimosa. A creeping plant having small, dark green pinnate, sensitive leaves, small cream-colored "powder puff" blossoms and numerous small pods. This little plant may become a lawn pest. (Leguminosae.)

*Mimosa strigillosa*. Pink Sensitive-Briar. A creeping plant that produces small, sensitive, pinnate leaves, and fragrant, gold-tipped pink "powder puffs" which are followed by inch long seed pods.

*Monarda dispersa*. Valley Horsemint. Aromatic plants up to 2 feet in height that usually produce stalks which bear dark green, serrated, long-ovate to lanceolate leaves and rosette-like spikes of small, tubular, purple flowers surrounded by purplish, leaf-like bracts. (Labiatae.)

*Monarda punctata*. Perennial Horsemint. Plants that reach a height of about a foot. They produce stalks which bear dark green, serrated, long-ovate to lanceolate leaves and rosette-like spikes of small, tubular white flowers in whitish, leaf-like bracts.

*Nama (Marilaunidium) hispida*. Sand-Bells. A low growing plant that produces small, hairy, rough, dark green, spatulate leaves and saucer-shaped, deep blue to violet flowers. These flowers are quite similar in appearance to those of the Baby Blue Eyes. (Hydrophyllaceae.)

*Nama (Marilaunidium) undulatum* var. *macranthum*. Sunbells. The plants resemble those of *Phacelia patuliflora*, but the saucer-shaped flowers are light blue in color, having white centers, and do not have coiled buds.

*Nemophila phacelioides*. Baby Blue Eyes. These weak stemmed annual plants produce light green, lobed leaves and light blue, saucer-shaped flowers shading into white at the centers. This flower can be distinguished from the other species by its double circle of sepals surrounding the flower. (Hydrophyllaceae.)

*Neptunia lutea*. Yellow Sensitive-Briar. This plant is similar to the Pink Sensitive-Briar except that the blossoms are yellow. (Leguminosae.)

*Nicotiana repanda*. Star Tobacco. This plant reaches a height of 2 feet. It produces a rosette of large, light green, broad-ovate leaves and small, star-shaped white flowers on the tips of tall, slender, leafless stalks. (Solanaceae.)

*Nicotiana trigonophylla*. Velvet Leaf Tobacco. An annual plant that produces large, deep green, sticky, velvety leaves; and star-shaped, white flowers on the tips of slender, leafless stalks.

*Nothoscordum bivalve*. Crow Poison, Wild Onion. A small bulbous plant that produces a few, dark green, grass-like leaves and an erect, terminal umbel of small star-shaped white flowers on the tip of a 6-inch stalk. The entire plant has an onion odor. (Liliaceae.)

*Nyctaginia capitata*. Devil's Bouquet. A sprawling plant having grayish-green leaves with a musky odor, and sticky stems tipped with red flower clusters. Comes from a parsley-like root. (Nyctaginaceae.)

*Oenothera Drummondii*. Seashore Yellow Evening-Primrose. These small plants produce small yellow flowers. (Onagraceae.)

*Oenothera laciniata*. Mexican Evening-Primrose. Plants of this species produce large yellow flowers.

*Oenothera rosea*. Dwarf Pink Evening-Primrose. These plants produce very small, pink flowers.

*Oenothera serrulata*. Square Bud Evening-Primrose. Evening-Primrose plants that produce square buds and small yellow flowers. Remains open in bright sunshine.

*Oenothera (Hartmannia) speciosa*. Apple Blossom Evening-Primrose. These plants produce flowers which range in color from deep pink to white.

These low growing, sprawling plants produce long, narrow, wavy adged, grayish-green leaves and attractive flowers that open in the evening and remain open until a few hours after sunrise.

*Orobanche (Myzorrhisa) ludoviciana*. Louisiana Broom Rape. A parasitic plant that forms a low cluster or mat of leaves. It produces clusters of small, lavender flowers. (Orobanchaceae.)

*Parthenium hysterophorus*. Wild Cauliflower, Santa Maria Feverfew. This weed is mentioned for identification purposes and not because it has any ornamental value. It is an annual plant that produces deeply cut, dark green leaves and very small, white cauliflower-like heads. As these flower-heads dry, they become a menace to hay-fever sufferers. (Compositae.)

*Penstemon ambiguus*. Pink Penstemon. A plant having a perennial root that produces annual stalks bearing deep green, serrated, lanceolate leaves and spikes of pink tubular flowers. This plant is native to other sections and is probably an escape in this region. (Scrophulariaceae.)

*Perezia runcinata*. Devil's Shaving Brush, Tin Plant. A perennial plant up to 10 inches high that produces a rosette of rough, dark green, thistle-like leaves and thistle-like, rosy-lavender flowers. (Compositae.)

*Petalostemon purpurea*. Purple Prairie-Clover. A low growing annual plant that forms clumps of dense, dark green foliage. It produces slender stems; pinnate foliage; small, purple, cone-shaped flower heads on the tips of the branches; and small, brown seed pods. (Leguminosae.)

*Petunia parviflora*. Wild Petunia. This plant forms a cluster of dull green, thick, ovate leaves flat on the ground and produces small, lavender to violet, bell-shaped flowers. (Solanaceae.)

*Phacelia congesta*. Blue Curls, Wild Heliotrope. These annual plants grow up to 30 inches high. They produce deeply cut, irregularly lobed, light green leaves, and tightly coiled clusters of buds which unfold as the buds develop. The dense, elongated clusters of very small, purplish-blue flowers are tipped with golden stamen. (Hydrophyllaceae.)

*Phacelia patuliflora*. Baby Eyes, Baby Blue Eyes, Wild Heliotrope. This small plant produces a low cluster of bright green leaves, deeply cut into large lobes. It produces saucer-shaped, purplish-blue flowers having gold tipped stamen. The flowers are produced in coiled clusters that unfold as the buds develop.

*Phlox divaricata*. Blue Phlox. Plants of this species are found in Brooks and Hidalgo Counties and produce pale bluish flowers. This is the Sweet William of literature. (Polemoniaceae.)

*Phlox Drummondii*. Drummond's Phlox. This plant is found near Goliad and San Antonio and is the parent of all cultivated phlox. It produces bright red flowers.

*Phlox glaberrima*. Smooth Phlox. This species is found from Hidalgo County to Brooks County and produces bluish-lavender flowers.

*Phlox pilosa*. Prairie Phlox. This plant is found in Willacy County and produces pink to purplish flowers.

Several annual species of wild phlox are found growing in this region.



The plants have dull green, soft, oblong leaves, and clusters of wheel-shaped flowers.

*Physalis macrophysa*. Lantern Plant. A low growing, perennial plant that reaches a height of about 6 inches. It produces small, dull green, ovate leaves and small, whitish, saucer-shaped flowers which are followed by large "lantern" pods.

*Physalis mollis*. Low Ground Cherry. These semi-spreading, small, annual plants produce broad-ovate, dull green leaves, pale yellow flowers having dark centers and inflated pods, each containing a yellow berry. (Solanaceae.)

*Phystegia virginiana*. Dragon's Head. A slender, upright, annual plant that produces square stems, blue-green, serrated leaves and terminal spikes of paired, pinkish, tubular flowers. Easily transplanted and very ornamental. (Labiatae.)

*Polanisia trachysperma*. Polanisia. A bushy plant that produces dark green, ovate leaves about 6 inches long and terminal racemes of small, pink, composite flowers. The plant has a garlic odor. (Compositae.)

*Polygala alba*. White-Wings. A plant that produces a tuft of narrow leaves near the ground and wiry stems tipped with small white flowers which are formed by two "wings." (Polygalaceae.)

*Polygala ovalifolia*. Pink-Wings. This plant produces small, pale pink, pear-shaped flowers that have the appearance of dainty wings on the tips of the wiry branches. Yellow Milkwort belongs to the same species. It is a rather inconspicuous shrub reaching a height of about a foot. It makes a cluster of straight stems producing ovate leaves and bell-shaped, pale yellow flowers.

*Polypteris texana*. Purple Polypteris. A plant that produces dark green, lanceolate leaves and numerous, small showy heads of deep violet colored flowers on long stems. (Compositae.)

*Portulaca oleraceae*. Wild Portulaca. A sprawling plant having dark green, thick ovate leaves and small orange-yellow flowers. (Portulacaceae.)

*Portulaca pilosa*. Moss Rose. A low growing perennial plant that produces very small, gray-green, fleshy, awl-shaped leaves and small, star-shaped deep rose to red flowers which are followed by small, round capsules.

*Pyrrhopappus (Sithias) multicaulis*. False-Dandelion. A small lawn plant up to 10 inches in height that produces bright green, deeply cut leaves; pale yellow, dandelion-like flowers and fluffy heads of plumose seed. (Compositae.)

*Quincula (Physalis) lobata*. Purple Physalis. A small, prostrate, perennial plants that produces small, dull green, broad-ovate leaves and purple flowers which are followed by small "lantern" pods. (Solanaceae.)

*Rhynchosia (Dolicholus) americana*. One-Leaf Bean. This perennial pea vine produces long, slender stems; kidney-shaped, dark green, rough leaves that are deeply veined; small, pea-shaped, yellow flowers; and short, flat pods containing one to two seeds. (Leguminosae.)

*Rhynchosia (Dolicholus) minima*. Small-Leaf Bean. A small, trailing vine having dark green, trifoliolate leaves, and small, pea-shaped yellow flowers on slender stalks; and curved pods containing two beans.

*Rhynchosia (Dolicholus) texana*. Wild Cowpea. A small, native vine that

produces dark green, trifoliolate, leathery leaves and small, pea-shaped, yellow flowers which are followed by curved, flat 2-seeded pods.

*Rivina humilis*. Pigeon Berry. A small, bushy, perennial that produces deep green, ovate leaves, spikes of very small pinkish-white flowers, and spike-like clusters of crowded, bright red berries. (Phytolaccaceae.)

*Rouliniella unifaria*. Milkweed Vine. This vining plant produces the typical milky sap of the Milkweed Family. The leaves are smaller than those of the common milkweeds and dark green in color. The plant produces a profusion of attractive creamy white, milkweed flowers followed by the typical long seed capsules. The entire plant has a strong odor. (Asclepiadaceae.)

*Ruellia*. Wild Petunia. These native plants produce heavy, perennial roots and bell-shaped flowers. *R. ciliosa* var. *humilis* (Hairy Ruellia) produces a small rosette of woolly leaves and bluish-lavender flower up to two inches long. *R. Drummondii* (Wild Blue Petunia) produces blue flowers and will grow in dense shade; seed of this variety can be obtained from seed dealers. *R. nudiflora* (Tall Ruellia) is a smooth, deep green plant up to three feet high that produces dark green leaves and deep lavender flowers about an inch across. Plants of *Ruellia* will thrive and multiply under cultivation and maintain themselves for years. (Acanthaceae.)

*Sabbatia campestris*. Pink Texas Star. A slender, annual plant about 6 inches in height that produces light green, lanceolate leaves and solitary, star-shaped bright pink flowers having yellow centers. Especially desirable. (Gentianaceae.)

*Samolus alyssoides*. *Samolus*, Water Pimpernel. A small perennial plant up to 6 inches high that produces spatulate leaves and racemes of bell-shaped, small white flowers on the leafless upper branches. Found along the coast. (Primulaceae.)

*Schrankia Roemeriana*. Shame Vine. A small, creeping plant that produces very small, pinnate, sensitive leaves and fragrant pink "powder puff" blooms having gold tipped stamens. These fluffy balls of bloom are followed by small, prickly pods. This plant has paired briars or small thorns along the stems. (Leguminosae.)

*Scutellaria Drummondii*. Drummond's Skull Cap. A small leafy plant that produces dark green, oblong, serrated leaves and small, purplish tubular flowers, which are followed by "skull-cap" seed capsules. (Labiatae.)

*Selenia dissecta*. *Selenia*. A sprawling plant having bright green, finely cut leaves, and yellow, bell-shaped flowers on long stems. (Cruciferae.)

*Senecio ampullaceus*. Squaw Weed, Groundsel Daisy. This annual plant reaches a height of 15 inches and produces broad, toothed, bright green, succulent leaves and clusters of small, fragrant, yellow flowers. (Compositae.)

*Senecio glabellus*. Lobed Squaw Weed. A small plant about 8 inches in height that produces deeply cut, bright green leaves and bright yellow, daisy-like flowers.

*Sesuvium portulacastrum*. Sea Purslane, *Sesuvium*. A prostrate, succulent plant having flat, fleshy, linear leaves and small, purplish flowers. The fleshy stems root at the nodes. (Aizoaceae.)

*Sida angustifolia*. Common Sida. This plant produces narrow-ovate leaves and flowers ½-inch in diameter. (Malvaceae.)

*Sida cuneifolia*. Common Sida. This species produces broad-ovate leaves and similar flowers.

*Sida hastata*. Common Sida. Plants of this species produce blunt-ovate leaves.

*Sida longipes*. Large-Flowered Sida. This spreading plant produces medium green, serrated, narrow-lanceolate leaves and pale yellow flowers an inch in diameter.

*Sida procumbens (diffusa)*. Prostrate Sida. This prostrate plant produces medium green, serrated, ovate-lanceolate leaves and solitary, pale yellow flowers on the tips of the branches.

Several species of perennial Sidas are found in this region. All of them produce serrated leaves and pale yellow, solitary flowers on the tips of the branches.

*Siphonoglossa dipterocanthus*. Siphonoglossa. This plant consists of many green stems bearing many small oval to ovate leaves and numerous rosy-purple, tubular flowers. (Acanthaceae.)

*Siphonoglossa pilosella*. False Honeysuckle. A low growing, mint-like plant having ovate to spatulate leaves and small white to lavender tubular flowers.

*Sisyranchium sp.* Blue-Eyed Grass. These small clumps of grass seldom reach a height of more than a foot. They produce small, purplish-blue flowers. (Iridaceae.)

*Solanum elaeagnifolium*. Silverleaf Nightshade. A prickly plant up to 18 inches high that produces silvery-green, lanceolate leaves; small, tomato-like, purplish flowers; and large, succulent yellow berries. (Solanaceae.)

*Solanum nigrum*. Black Nightshade. This plant is mentioned for identification purposes only. It produces deep green, thin, long-ovate leaves; small, tomato-like white flowers; and poisonous black berries.

*Solanum rostratum*. Buffalo Burr. A prickly plant that produces prickly, lanceolate leaves, yellow flowers and spine covered berries.

*Solanum triquetrum*. Vine Nightshade. A vining plant that produces small, bright green, lanceolate to ovate leaves; small, tomato-like, white flowers and small, succulent, red berries.

*Solanum verbascifolium*. Giant Nightshade. A plant up to 3 feet high that produces large, rough, long-ovate, dark green leaves; small, tomato-like, greenish flowers; and large, succulent, black berries.

*Solidago serotina*. Goldenrod. These annuals produce slender, leafy stalks which are topped by large pyramidal heads of golden-yellow composite flowers. These fall blooming plants are a great annoyance to hay-fever sufferers. *S. petiolata (angustifolia)* is the Gulf Coast or Salt Marsh species, having fleshy foliage. (Compositae.)

*Specularia biflora*. Small-Flowered Venus Looking-Glass. This plant differs from the Large-Flowered variety in having leaves that are longer than they are broad, and flowers ranging in color from blue to violet. (Campanulaceae.)

*Specularia perfoliata*. Large-Flowered Venus Looking-Glass. This is a leafy plant having angular stems, clasping leaves and star-shaped, violet-colored flowers borne in the axils of the upper leaves. The leaves of this species are broader than long.

The Large-Flowered species and the Small-Flowered species are found in

this region. They produce plants having angular stems; numerous bright green, stemless, broad-ovate clasping leaves and small, star-shaped, bluish flowers.

*Sphaeralcea augustifolia*. Globe Mallow. This plant reaches a height of about 10 inches and produces flowers which range in color from white to pale pink. (Malvaceae.)

*Sphaeralcea coccinea*. Red Mallow. This plant reaches a height of about 15 inches and produces flowers ranging in color from deep pink to red.

*Sphaeralcea cuspidata*. Pompadour Mallow. This plant reaches a height of 4 feet. It produces ashy-green, hairy, heart-shaped leaves and salmon-colored flowers.

*Sphaeralcea Lindheimeri*. Sand Mallow. A plant up to a foot high that produces gray-green, woolly, ovate leaves, and rosy-salmon, mallow flowers.

*Sphaeralcea pedatifida*. Copper Mallow. A low growing, bushy plant that seldom reaches a height of more than 12 inches. It produces numerous, finely cut, deep green leaves and small, bright salmon colored, saucer-shaped flowers.

Small perennial mallow-like plants that produce small, dull green heart-shaped (ovate) leaves; and small mallow flowers.

*Stachys Drummondii*. Pink Mint. A small, branching plant that produces hairy light green, serrated, ovate leaves and slender spikes of pink, tubular flowers. Not prickly. (Labiatae.)

*Stemodia Schottii*. Stemodia, Figwort. A low growing plant that produces small, dark green, serrated leaves; terminal clusters of small, tubular, yellow flowers. (Scrophulariaceae.)

*Stemodia tomentosa*. Silverleaf Stemodia. A small, creeping plant that produces small, gray, woolly leaves on white stems; and very small, tubular, purple flowers.

*Suaeda (Dondia) fruticosa*. Dondia, Sea-Blite. These seaside plants form dense mats of very small, gray, fleshy, awl-shaped leaves. The flowers are inconspicuous. (Chenopodiaceae.)

*Synthlipsis Berlandieri*. Carpet-of-Gold. A small annual plant that produces bright green, lobed leaves and small, 4-petaled, yellow flowers. (Cruciferae.)

*Synthlipsis speciosa*. Carpet-of-Snow. This plant is similar to Carpet-of-Gold except that the flowers are white.

*Talinum aurantiacum*. Flame-Flower. A small, leafy plant having a thick tap root; slender brittle branches; thick, linear, awl-shaped leaves; and orange to yellow flowers. (Portulacaceae.)

*Talinum paniculatum*. Pink Baby's Breath. This perennial plant comes from a fleshy root and produces numerous, triangular succulent leaves. The very small, pink flowers are borne in panicles on the ends of the wire-like, upper branches.

*Talinum parviflorum*. Dwarf Flame-Flower. A low growing, somewhat succulent, brittle, perennial that produces small, fleshy, linear leaves, very small, pale yellow flowers and 3-valved capsules.

*Tephrosia (Cracca) Lindheimeri*. Shoestring-Pea. This small native pea vine produces small, white margined, pinnate leaves having short hairs

underneath; pea-shaped, pink to scarlet flowers (somewhat smaller than sweet peas) which are borne along the long, branching stems; and flat, yellowish, velvety seed pods. (Leguminosae.)

*Tephrosia virginiana*. Devil's Shoestring. This prostrate plant has pinnate foliage similar to that of *T. Lindheimeri* except that it is somewhat woolly; and flowers in varying shades of rose color. The roots of this plant contain rotenone.

*Tetragonotheca texana*. Perennial Coneflower, Square-Bud Daisy. This upright, perennial branching plant reaches a height of about 18 inches. It produces large, toothed leaves, square buds, and yellow flowers. (Compositae.)

*Teucrium cubense*. Coast Germander, White Mint. These plants produce white flowers. (Labiatae.)

*Teucrium occidentale*. Purple Germander. These plants produce velvety leaves and purplish flowers.

Two species of this plant are found in this area. They produce branching plants having square stems, typical of the Mint family; light green, saw-toothed, ovate leaves; and terminal spikes of mint-like flowers.

*Thamnosma texana*. Dutchman's Britches. These aromatic plants form low tufts of small, blue-green leaves. They produce tiny, yellow, half-closed flowers which are followed by very small, paired pods resembling Dutchman's britches. (Rutaceae.)

*Tillandsia Baileyi*. Bailey's Ball Moss. A parasitic plant found growing in the trees along the Rio Grande. It is a ball of gray moss which produces attractive, long throated, purple flowers. This plant will thrive under cultivation. (Bromeliaceae.)

*Tradescantia gigantia*. Giant Spiderwort. An upright plant, twelve to eighteen inches high, that has broad, bluish-green leaves and three-petaled, lavender flowers. (Commelinaceae.)

*Tradescantia hirsuticaulis*. Hairy Spiderwort. This plant produces slightly hairy stems, bright green, grass-like foliage and white to violet colored flowers.

*Tradescantia humilis*. Spiderwort, Grass Violet. A tender, native plant (6 inches tall) having an upright habit of growth. It has bright green, succulent stems and small, three-petaled, purple flowers which are borne on the tips of the branches. There is a white flowered, prostrate form, *T. fluminensis*, which is called Wandering Jew.

*Tradescantia micrantha*. Stemless Spiderwort. A low growing, almost stemless trailing plant which produces white to violet-colored flowers.

These small, tuberous-rooted, native plants are of value chiefly for use in window boxes or as low border plants. Most of them have dark green, grass-like foliage somewhat resembling that of the Wandering Jew plant, and small, three-petaled flowers that remain on the plants for only one day.

*Verbascum Blattaria*. Moth Mullein. This is an introduced plant that has become an escape along the Gulf Coast. In the winter it produces a rosette of thin, lanceolate, green leaves. In summer it produces a two to five foot, flowering stalk which bears white to yellow flowers. (Scrophulariaceae.)

*Verbascum Thapsus*. Common Mullein. This plant consists of a rosette of thick flannel-like, lanceolate leaves, sometimes reaching a length of 15



inches and a 6 to 8 foot stalk covered with small woolly, lanceolate leaves. The upper third of the stalk produces the flowering stalks bearing yellow flowers.

These annual or biennial plants are not found in abundance anywhere in Texas, but a few plants are to be seen in this region.

*Verbena ambrosifolia*. Western Verbena. A plant that produces dull green, ovate leaves that are broader than long; and large heads of rosy-pink flowers. (Verbenaceae.)

*Verbena ciliata*. Small Pink Verbena. This plant produces dull green, lobed leaves; and small, pink, flower heads.

*Verbena Halei*. Small Blue Verbena. A small plant that produces dull green, deeply lobed leaves; and very small, pale blue flower heads.

*Verbena officinalis*. European Vervain, Slender Vervain. A slender, perennial having square stems, bright green, narrow leaves, and few light blue flowers scattered along tall, slender wiry stems.

*Verbena quadrangulata*. Gulf Coast Verbena. This is the showiest of our native verbenas. It produces angular stems; dull green, deeply cut leaves; and large heads of deep pink to purplish lavender flowers.

*Verbena xutha*. Large Flowered Vervain. A slender, perennial that produces square stems; dark green, narrow leaves; and numerous deep blue flowers on thick, wiry stems.

Several species of wild verbenas are found in this region. These prostrate plants are usually perennial and produce dull green, ovate leaves and flat flower heads ranging in color from pale blue to rosy lavender.

*Verbesina (Ximenesia) encelioides*. Barnyard Daisy, Yellow Top. A bushy annual plant up to 18 inches high that produces large, gray green, ovate leaves and bright yellow flowers. The entire plant is malodorous. (Compositae.)

*Verbesina texana*. Frostweed, Texas Crownbeard. An annual with large, thick, toothed, lanceolate, light green leaves and heavy clusters of small, pinkish-lavender flowers.

*Vigna repens (luteola)*. Yellow Jack Bean. A low trailing plant that produces dark green, trifoliate leaves and pale yellow, bean flowers. (Leguminosae.)

*Viguiera stenoloba*. Yellow Broom Daisy. A branching, annual that produces large, rough leaves and yellow flowers on wiry stems. Fall blooming. (Compositae.)

*Vincetoxicum biflorum*. Star Milkweed. A prostrate, hairy plant that produces heart-shaped leaves and one to two star-shaped, purplish flowers, borne in the axils of the paired leaves. (Asclepiadaceae.)

*Vincetoxicum reticulatum*. Pearl Milkweed. A vining, hairy plant that produces heart-shaped leaves and clusters of greenish flowers borne on long stalks which come out of the axils of the leaves. The flowers have a pearl-like center.

*Waltheria americana*. Waltheria. A perennial woolly plant that produces thick, serrated, leaves and orange-yellow flowers in axillary masses of green "cotton." (Sterculiaceae.)

*Wissadula amplissima*. Small-Flowered Velvet Mallow. This plant produces small, heart-shaped leaves and salmon-colored mallow flowers. (Malvaceae.)

*Wissadula holosericea*. Large-Flowered Velvet Mallow. The ovate leaves are large, thick, dull green and velvety. It has salmon-colored mallow flowers.

*Xanthisma texanum*. Sleepy Daisy. An annual, upright plant that produces narrow, toothed leaves and waxy, yellow flowers that open only part of the day. (Compositae.)

*Zexmenia hispida*. Orange Daisy. This perennial plant reaches a height of about 15 inches. It produces numerous stiff branches, rough, hairy leaves and orange-yellow flowers about one-inch in diameter. (Compositae.)

*Zornia bracteata*. Rabbit's Ears. This perennial vining plant produces 4-foliolate palmate leaves and racemes of yellow, bonnet-shaped flowers followed by 3-to-4-jointed seed pods. (Leguminosae.)

*Zornia diphylla*. Two-Leaf Rabbit's Ears. This plant differs from *Z. bracteata* in producing 2-foliolate leaves and horned seed pods.

These perennial vining plants produce palmate leaves and racemes of yellow, bonnet-shaped flowers that are produced between two large bracts, giving them the appearance of rabbit's ears.

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