This book was presented by
Harlan C. Brown
Minnesota Plant Studies

V.
GUIDE
TO THE
AUTUMN FLOWERS OF MINNESOTA
FIELD AND GARDEN

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Preface

The present number of "Minnesota Plant Studies" is a companion guide to the third edition of "Spring Flowers." It is prepared for the purpose of enabling high schools to begin work with flowering plants in the fall, and thus give the student some preliminary knowledge and training as a basis for the field and garden work in the spring. For this reason, cultivated species as well as native ones are included, and special attention is given to the weeds, grasses and ornamentals, which play such a large and practical part in fall vegetation. An endeavor has been made to include all the species found in bloom after September first. The majority begin to bloom in July and August, so that autumn and spring guides together will serve fairly well for the recognition of the summer species. For the sake of plant lovers generally, as well as for the increasing number of colleges and high schools with greenhouses, all of the common species blooming during the winter have been added also.

The flowering plants of the whole school year, from September 1 to June 15, both cultivated and native, are now covered by the two guides to spring flowers and autumn flowers. In a few years it is expected that a summer guide will be prepared in anticipation of the time when a completely illustrated book of all the flowers of the state will be possible.

Britton and Brown's "Illustrated Flora" and Gray's "Manual" have been freely drawn upon in the preparation of the present guide, and acknowledgment is hereby made of their aid. The grouping of the families is essentially that of the Benthamian system of classification. The sequence is from pines and buttercups to pinks and mints to roses and asters, and then to lilies, grasses and orchids.

In addition to the list of publications in the following series, "Minnesota Trees and Shrubs" is also available for students and plant lovers generally. In fact it supplants the "Guide to Trees and Shrubs," which will not be republished hereafter. "Minnesota Algae" is also valuable for schools, health officers, water and fish commissioners, as well as to others who possess microscopes.

MINNESOTA PLANT STUDIES

4. Minnesota Mushrooms (paper, 50 cents; cloth, $1.00).
5. Guide to Autumn Flowers (15 cents).

Copies of the above publications are sent free to residents of Minnesota. Ten copies of Nos. 1, 5 and 6 will be furnished free to the schools and colleges of the state. Additional copies may be secured at the price indicated. This is the price also for non-residents, who are not on the exchange list of the Botanical Survey.

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Introduction

HOW TO USE THE KEY

The method of using the keys for finding the names of plants may be shown best by taking a common flower as an example. If we choose the morning glory for this purpose, we turn to the "Key to Families" on page xi. Here it is necessary to decide first whether the petals are present or absent. Since petals and sepals are both clearly present, choice is made of "1. Petals present." Under this heading it is then necessary to decide between "1. Flowers single or in clusters," and

1. LEAF OUTLINES


"2. Flowers in heads." Examples of the latter are clover, sunflower, asters, etc. The morning glory evidently falls under "1." The next choice is between "a. Petals 3," and "b. Petals 4 or more." Since the morning glory has five petals grown into a funnel-shaped tube, "b" is chosen, and the decision then rests between "(1) Petals separate" and "(2) Petals united" and then under "(2)" between "(a)" Ovary superior, i. e., within the other parts," and "(b)" Ovary inferior, i. e., below the other parts." The ovary is found within the corolla tube and is consequently superior. An in

II. LEAF OUTLINES AND BASES


erior ovary is found at the bottom of the calyx and corolla, as in the ivy, the honeysuckle and the single flowers of dandelions, asters, etc. It is next necessary to know the number of ovum or cells in the ovary. This can be told readily from the ripe fruit as a rule, or from taking a cross section of the ovary. If there are no cross walls, the ovary is unicelled. In the morning glory the ovary is divided into three cells so that choice is first made of "2. Ovary 3-celled," in place of "y. Ovary one-celled," or "y. Ovary 24-celled," fitting the plant in hand. Under "y" we find "a. Tamar"
and "(y) Erect herbs, or tendril climbers." The morning glory twines or climbs without tendrils, and our plant thus belongs to the "Convolvulaceae." This family is found in the text on page 14. Here the first step is to read carefully the description of the morning glory family. If there are no points of disagreement, the plant has been traced to the right family, and it is then necessary to

III. Leaf Edges

1. Serrate (saw-toothed).
2. Dentate (toothed).
3. Crenate (scalloped).
4. Tndulate (wavy).
5. Sinuate (bayed).
6. Incised (lagged).

determine the particular genus by reference to the key which follows the family description. The morning glory clearly falls under "1. Stems leafy, green; flowers large." The choice then lies be-

IV. Leaf Tips

1. Acuminate.
2. Acute.
3. Obtuse.
4. Truncate.
5. Retuse.
7. Obcordate.
8. Cuspidate.

tween "a. Stigma capitate or head-like" and "b. Stigmas 2, linear." Since the stigma is one and capitate, the choice then falls between "(1) Leaves pinnately parted; corolla salver-form" and "(2)

V. Lobed Leaves

Pinnately: 1. Lobed.
Palmately: 2. Laced.
3. Cleft.
4. Cleft.
5. Parted.
6. Parted.
7. Divided.
8. Divided.
Leaves not parted; corolla funnel-form." The common morning glory shows the flowers presented in "(2)" and hence belongs to the genus "Ipomoea." Under this group, the choice is between

1. Flowers opening in the morning
2. Flowers opening at night

As the name itself indicates, the morning glory belongs in "1." Under "1" the funnel-form corolla leads to the choice of "a," and under "a" the choice falls upon "(1) Leaves cordate, entire; short hairy; if puberulous.


The same method is used in locating any plant whose name is desired. The essential points in using the key are: first, that the choice must be made between two, rarely three, alternatives. These alternatives are indented the same distance from the margin, and are numbered or lettered in sequence, for example, "1" and "II," "a" and "b," and "(1)" and "(2)." "A," "B," and "c." Secondly, after choice has been made of one alternative, no further attention is paid to the other alternative. In making the choice between them, however, it is essential to read both, as one often throws light

VI. Compound Leaves

4. Palmate or digitate.

5. Twice-pinnate
INTRODUCTION

upon the other. In the last place, it is necessary to examine the plant carefully and not merely guess at the points in question. This applies also to the technical terms which cannot be avoided if leaves and flowers are to be described accurately.

In the case of a common weed, it will often be found convenient to make use of the “Key to Weeds” on page xv. This is particularly true of weeds in the fall, since their flowers have often disappeared. It is quite possible to place them, however, from the characters of leaves and fruits by the use of the key indicated. In finding the botanical name of the sweet clover, the first choice is between “1. Leaves simple,” and “2. Leaves compound.” Since the leaf of the sweet clover consists of three leaflets, it evidently falls under “2.” The next choice is between “a. Leaves with three leaflets,” and “b. Leaves with more than three leaflets.” The choice here falls upon “a” and then the decision rests between “(1) Leaf margin entire” and “(2) Leaf margin serrate or toothed.” Under “(2)” the choice lies between “(a) Leaf margin coarsely serrate or toothed” and “(b) Leaf margin finely serrate.” This distinction requires some experience for entire certainty, but the small teeth on the leaflet of the sweet clover would seem to indicate fairly clearly that the choice would fall upon “(b).” Under “(b)” the height of the plant and the arrangement of the flowers in a long cluster or raceme indicate that the choice should rest upon “x. Upright plants 2-6 feet tall—Melilotus albus: sweet clover,” page xviii.

EXPLANATION OF THE CHART

The chart on page ix is designed to show the general lines of descent of flowering plants from the ancestral ferns, and to indicate the relationships of the various orders. It is based primarily upon the development of the flower as a special organ for pollination and seed-production. Families with the simplest flowers, that is, those with the flowers least changed from the fruiting organs of the ferns, are placed at the bottom of the chart. Such families are found in the gymnosperms and in the buttercup order. The flowers of the former are wind-pollinated, and lack both calyx and corolla. The flowers of most buttercups, on the other hand, are pollinated by insects, and possess both calyx and corolla, or a showy calyx. These are regarded as the primitive or earliest type of flower of the angiosperms. From the specialization of these, in response to insect and wind pollination, have been derived the orders and families of the three lines of evolution shown in the chart.

In detail, the primitive flower shows a large number of separate stamens and separate pistils, the petals are alike and separate, and there is no union between any of the four parts, sepals, petals, stamens and pistils. In the increasing adaptation of a flower to its work of pollination and seed-production, this primitive form has given rise to the higher or more specialized forms characteristic of the various orders of the chart. The chief steps by which this has been brought about are four, namely, reduction in number of parts, union, change in shape, change in position of the corolla, or elevation, but these changes have not appeared in the same sequence in all three lines. Reduction in number to a flower plan of 3, 4 or 5 has been almost universal in the groups just above the buttercups, though flowers occasionally occur with number plans of 6, 7, 8 and even 9. In flower structure, the arrowheads are essentially buttercups with parts in threes, while the lilies are arrowheads with the stamens and pistils reduced in number, and the latter united to form a compound pistil. In the irises, the colored perianth of sepals and petals is upon or above the ovary, and in the orchids, the corolla is strikingly irregular, one petal usually taking the form of a lip or sack.

In the roses, the buttercup type is modified by the gradual growing together of the calyx and receptacle, and finally of the ovary also, with the result that the corolla and stamens are above the calyx and ovary. In the lower roses, the number of stamens, and usually of pistils also is large, and the pistils are separate. In the higher families, the pistils are united into a compound pistil. In the madders and honeysuckles, the petals have become united, and finally, in most of the asters, some or all of the flowers of the characteristic heads become irregular as to their petals. In the mustards, pinks, and geraniums, the flower parts are regularly reduced to the number plan of 4 or 5, and the pistils are united. In the primroses, the petals become united, and in the snapdragons and mints, the corolla as a rule is highly irregular.
Key to Families

1. Petals present
   1. Flowers single or in clusters
      a. Petals 3
         (1) Ovary superior
            (a) Pistils several-many, simple
            (b) Pistil 1, compound
               x. Sepals green, or stiff and dry, unlike the petals
                  (x) Air plants with gray foliage
                  (y) Land plants with green leaves and sepals
               y. Sepals and petals similar in color and texture
                  (x) Sepals and petals very small, scale-like, usually greenish brown
                  (y) Sepals and petals not scale-like nor greenish brown
                     m. Aquatic plants, flowers irregular
                     n. Land plants, flowers regular or nearly so
            (2) Ovary inferior
               (a) Aquatic, leaves submerged, flowers floating
               (b) Not aquatic
                  x. Stamens 3-6, flowers regular or moderately irregular
                     (x) Stamens 6
                     (y) Stamens 3
                  y. Fertile stamens 1-2, flowers very irregular
                     (x) Stamens not attached to style, seeds few
                     (y) Stamens or stamens attached to the style, seeds very numerous
            b. Petals 4 or more
               (1) Petals separate
                  (a) Petals 4
                     x. Flowers regular
                        (x) Stamens 4, at least the anther-bearing ones
                        (y) Stamens 6 or more
                           m. Stamens 6
                           n. Stamens 8 or more
                              (m) Stamens 8-10
                                 r. Fleshy plants
                                 s. Not fleshy
                                    (r) Ovary superior, i.e. within the other parts
                                       h. Pod bladdery; flowers white
                                          i. Pod not bladdery; flowers yellowish
                                    (s) Ovary inferior, i.e. below the other parts
                                       (n) Stamens 12 or more
                              y. Flowers irregular
                                 (x) Stamens many
                                 (y) Stamens 1
               (b) Petals 5 or more
                  x. Petals 5
                     (x) Flowers regular
                        m. Pistils few-many
                           (m) Plants fleshy; stamens few
                           (n) Plants fleshy; stamens few
                        s. Not fleshy
                           (s) Ovary superior, i.e. within the other parts
                              h. Pod bladdery; flowers white
                                 i. Pod not bladdery; flowers yellowish
                           (s) Ovary inferior, i.e. below the other parts
                              (n) Stamens 12 or more
                                 (n) Stamens 12 or more
                                    (n) Stamens 12 or more
                                       h. Pod bladdery; flowers white
                                          i. Pod not bladdery; flowers yellowish
                                    (s) Ovary inferior, i.e. below the other parts
                                       (n) Stamens 12 or more
                                          (n) Stamens 12 or more
                                             (n) Stamens 12 or more
                                                h. Pod bladdery; flowers white
                                                   i. Pod not bladdery; flowers yellowish
                                      (s) Ovary inferior, i.e. below the other parts
                                         (n) Stamens 12 or more
                                            (n) Stamens 12 or more
                                               (n) Stamens 12 or more
                                                  h. Pod bladdery; flowers white
                                                     i. Pod not bladdery; flowers yellowish
                                            (s) Ovary inferior, i.e. below the other parts
                                               (n) Stamens 12 or more
                                                  (n) Stamens 12 or more
                                                     (n) Stamens 12 or more
                                                        h. Pod bladdery; flowers white
                                                           i. Pod not bladdery; flowers yellowish
                                                  (s) Ovary inferior, i.e. below the other parts
                                                     (n) Stamens 12 or more
                                                        (n) Stamens 12 or more
                                                           (n) Stamens 12 or more
                                                              h. Pod bladdery; flowers white
                                                                 i. Pod not bladdery; flowers yellowish
                                                        (s) Ovary inferior, i.e. below the other parts
                                                           (n) Stamens 12 or more
                                                                 (n) Stamens 12 or more
                                                                    (n) Stamens 12 or more
                                                                       h. Pod bladdery; flowers white
                                                                          i. Pod not bladdery; flowers yellowish
                                                                 (s) Ovary inferior, i.e. below the other parts
                                                                    (n) Stamens 12 or more
                                                                       (n) Stamens 12 or more
                                                                          (n) Stamens 12 or more
                                                                             h. Pod bladdery; flowers white
                                                                                i. Pod not bladdery; flowers yellowish
                                                                    (s) Ovary inferior, i.e. below the other parts
                                                                       (n) Stamens 12 or more
                                                                          (n) Stamens 12 or more
                                                                             (n) Stamens 12 or more
KEY TO FAMILIES

(n) Plants not fleshy; stamens many  
  r. Stamens and petals coming off with the calyx  
  s. Stamens and pistils entirely free from the calyx

n. Pistil 1  
(m) Pistil with a single stigma  
(n) Pistil with 2 or more stigmas, or the ovary lobed  
  r. Stamens 5-10

(r) Ovary 4-5-celled or 10-celled  
  h. Leaves simple, entire  
  i. Leaves lobed to compound  
  (h) Leaves of 3 leaflets  
  (i) Leaves not of 3 leaflets  
  p. Flowers yellowish  
  q. Flowers never yellow

(s) Ovary 1-2-celled  
  h. Ovary 2-celled  
  (h) Ovary superior, i.e. within the other parts  
  (i) Ovary inferior, i.e. below the other parts  
  i. Ovary 1-celled  
  (h) Styles 2, the ovary lobed at tip  
  (i) Styles 3-5, when 2 the ovary not lobed

s. Stamens many

(r) Stamens united into a column  
(s) Stamens not united into a column

(y) Flowers irregular  
  m. Flowers spurred  
  (m) Spur formed by a petal  
  (n) Spur formed by a sepal  
  n. Flowers not spurred  
  (m) Stamens 6-8; ovary 2-celled  
  (n) Stamens 10; ovary 1-celled  

y. Petals apparently 6

(x) Stamens 5; flower very irregular, one sepal spurred  
(y) Stamens 6, pistil 1; petals really 3  
(z) Stamens and pistils many; petals really sepals

z. Petals many; double flowers of many families, to be determined  
  by the beginner only when single

(2) Petals united

(a) Ovary superior, i.e., within the other parts  
  x. Ovary 1-celled, or pistils 5, separate

(x) Ovary 1-celled  
  m. Corolla regular  
  (m) Stigma 1  
  r. Stamens opposite the corolla lobes  
  s. Stamens alternate with the corolla lobes  
  (n) Stigmas 5  
  n. Corolla irregular  
  (m) Calyx teeth with hooked bristles  
  (n) Calyx not bristly  
  (y) Pistils 5, separate  

y. Ovary 2-4-celled, rarely the 2 cells separate or 4-lobed  
(x) Ovary 2-celled, or 2 ovaries united by the stigmas  
  m. Corolla papery, tiny, 4-lobed  
  n. Corolla not papery and tiny, rarely 4-lobed  
  (m) Flowers regular; stamens as many as the corolla lobes  
  r. Ovary 2-celled
KEY TO FAMILIES

(r) Ovary and fruit few-seeded
(s) Ovary and fruit many-seeded
s. Ovaries 2, united at the tip only
(n) Flowers irregular; stamens 2-4, rarely 5
r. Shrubs
s. Herbs
   (r) Seeds borne directly on the ovary wall
   (s) Seeds borne on cup- or hook-like processes
(y) Ovary 4-celled or 4-lobed
   m. Ovary 4-celled
      (m) Leaves rising directly from a creeping rootstock
      (n) Leaves borne on above-ground stems
     r. Leaves opposite
     s. Leaves alternate, at least above
        (r) Leaves alternate throughout; fruit of 4 nutlets
        (s) Leaves opposite below; fruit a hooked pod
   n. Ovary 4-lobed or 4-divided
      (m) Leaves opposite; flowers mostly irregular
      (n) Leaves alternate; flowers mostly regular
z. Ovary 3-celled
   (x) Twiners
   (y) Erect herbs, or tendril climbers
(b) Ovary inferior, i.e., below the other parts
   x. Woody plants
   y. Herbs
      (x) Stamens 1-3
         m. Erect herbs
         n. Climbing or trailing plants, usually with tendrils
      (y) Stamens 4-5
         m. Sap milky; stamens often united
         n. Sap not milky; stamens separate
      (z) Stamens many; flowers monoecious or dioecious
2. Flowers in heads
   a. Ovary superior; flowers pea-like
   b. Ovary inferior; flowers not pea-like
      (1) Stamens united by their anthers
      (2) Stamens separate
11. Petals absent
1. Sepals present, often petal-like, rarely very minute
   a. Calyx funnel-form, bright-colored; involucre calyx-like
   b. Calyx not funnel-form
      (1) Pistils several-many
      (2) Pistil 1, at least the ovary
         (a) Stamens as many as the sepals
            x. Flowers in dense fleshy spikes
            y. Flowers not in fleshy spikes
            (x) Ovary superior
               m. Flower clusters papery because of papery bracts
               n. Flower clusters without papery bracts
                  (m) Sepals 3
                  (n) Sepals 4 or more
                     r. Stipules papery and sheathing the lower petal or corolla-like
                     s. Stipules not papery, or lacking
                        (r) Stigma 1
                        (s) Stigmas 2-4
### KEY TO FAMILIES

| h. Fruit a capsule; stigmas 3 | Molluginaceae | 6 |
| i. Fruit an achene or utricle; stigmas mostly 2 | Chenopodiaceae | 7 |
| (h) Flowers perfect or monoecious | Moraceae | 10 |
| (i) Flowers dioecious | Allioniaceae | 8 |
| (y) Ovary inferior | Apiaceae | 30 |
| m. Petal-like sepals forming a tube; style 1 | Brassicaceae | 3 |
| n. Styles 2; tube lacking | Euphorbiaceae | 12 |
| (b) Stamens more numerous than the sepals | Polygonaceae | 7 |
| x. Sepals 4; stamens 6 | Euphorbiaceae | 12 |
| y. Sepals 5, or apparently so, often petal-like | Araceae | 45 |
| (x) Stamens apparently numerous; fruit a capsule | Graminaceae | 50 |
| (y) Stamens 6-8; fruit an achene | Cyperaceae | 49 |

2. Sepals absent, or occasionally very minute

| a. Flowers in small heads, surrounded by 5 petal-like parts | |
| b. Flowers in spikes or spikelets | |
| (1) Spike fleshy, with a petal-like spathe | |
| (2) Flowers in papery spikelets with scales | |
| (a) Flower enclosed in 2 scales, stem hollow, round | |
| (b) Flower with a single scale; stem solid, mostly triangular | |
Key to Weeds

For weeds among the grasses and composites, see the keys on pages 33 and 50

1. Leaves simple
   a. Leaves not lobed or cut
      (1) Plants rosette-like, mat-like or creeping
         x. Leaves elliptic to ovate, in a rosette
            (x) Leaves parallel-veined
            (y) Leaves netted-veined, very large
               m. Leaves densely woolly, hairy
                  n. Leaves not woolly
                  y. Leaves round, on creeping stems
         (b) Leaves small, 1-3 cm. linear to ovate, annuals
            x. Leaves and stem thick and fleshy, not milky
               y. Leaves and stem milky
                  (x) Leaves and stems hairy
                  (y) Leaves and stems smooth
                     m. Seeds faintly transversely ridged and pitted
                        n. Seeds strongly transversely ridged, not pitted
         z. Leaves and stems neither fleshy nor milky
            (x) Leaves narrow, in whorls
            (y) Leaves broader, alternate
               m. Flowers solitary in the axils
                  n. Flowers clustered in the axils
      (2) Plants erect, ascending, decumbent or climbing
         (a) Stems climbing
            x. Fruits triangular, flowers inconspicuous
               y. Fruits rounded, flowers large white
         (b) Stems not twining nor climbing
            x. Annuals
               (x) Stems and leaves milky
               (y) Stems and leaves not milky
                  m. Plants bushy, tumble weeds
                     (m) Leaves obovate or spoon-shaped
                     (n) Leaves linear, somewhat fleshy
                        o. Stems with spiny bracts
                           p. Stems not spiny, often red
                           n. Plants not bushy, not tumble weeds
                           (m) Flowers and fruits in terminal clusters or racemes
                  n. Plants not bushy, not tumble weeds
                     (n) Flowers and fruits in terminal clusters or racemes

KEY TO WEEDS

o. Fruit a many-seeded 4-celled pod

p. Fruit 1-seeded
   (o) Fruit inclosed in greenish, white or pink sepals, nodes enlarged, stipules sheathing
   r. Plants 1-3 feet, racemes short and thick
   s. Plants 1-1½ feet, racemes narrow
      (r) Sepals white or pink
      (s) Sepals greenish
   (p) Fruit inclosed in fleshy-mealy sepals, stems ridged
   (q) Fruit inclosed in dry spiny sepals
      r. Dull green, spikes dense
      s. Deeper green, spikes slender

(n) Flowers and fruits in the axils of the leaves
   o. Fruit a blue-black berry
   p. Fruit dry, not berries
      (o) Stems four-sided, leaves cordate
      (p) Stems round, leaves ovate to lanceolate
          r. Leaves alternate, fruits surrounded with leafy bracts
             (r) Leaves parallel-veined, petioles sheathing
             (s) Leaves net-veined, petioles not sheathing
             s. Leaves opposite
                (r) Plants smooth, transparent and watery
                (s) Plants more or less hairy, not transparent
                t. Plants tall, fruit 1 cm. or more
                   u. Plants low, spreading, fruit less than 1 cm.
                      (t) Leaves all sessile and viscid hairy
                         (u) Lower leaves petioled, slightly hairy

y. Perennials or biennials
   (x) Leaves densely gray-woolly, large and basal
   (y) Leaves not woolly, mostly on the stem
   m. Leaves linear

n. Leaves oblong to ovate or lanceolate
   (m) Leaves alternate with sheathing stipules
   (n) Leaves opposite without sheathing stipules
      o. Margin of leaf entire
         (o) Fruit surrounded by large green involucre
         (p) Fruit surrounded by close-fitting calyx
      p. Margin of leaf serrate or toothed
         (o) Flowers in spikes or racemes, leaves not strong scented
         r. Leaves sessile, spikes dense

Onágra biënnis: evening primrose

Polýgonum pennsiltánícum: persicaria
Polýgonum lapathífolium: pale persicaria
Polýgonum hydropiper: smartweed
Chenopódium álbum: goosefoot
Amaránthus retrospléxus: pigweed
Amaránthus hýbridus: green pigweed
Solánnum nigrum: nightshade
Lámium amplexícaúle: henbit
Commelína commúnís: dayflower
Acalýpha virgínica: 3-seeded mercury
Pílea pámíla: clearweed
Siléne noctíflóra: nightflowering catchfly
Cerrástium vulgátum: mouseear chickweed
Stellária média: chickweed
Verbáscum thápúsus: mullein
Líndria vulgarís: butter and eggs
Rúmex críspus: dock

Alliónia nyctáginéa:
Saponária officíndís: soapwort
Verbéna strictá: hoary vervain
KEY TO WEEDS

s. Leaves petioled, spikes slender
   (r) Flowers in long, slender terminal spikes

(s) Flowers in numerous axillary spikes
   (p) Flowers in axillary clusters, leaves strong scent

b. Leaves lobed or cut
   (1) Leaves opposite
      (a) Stems climbing, rough, almost prickly
      (b) Stems not climbing, square or squarish
      x. Stems prostrate, bracted, fruit unarmed

   y. Stems erect, not bracted, fruits spiny

(2) Leaves alternate
   (a) Stems climbing, fruit spiny
      x. Fruits borne singly, four-seeded

   y. Fruits in clusters, one-seeded

   (b) Stems erect or nearly so, fruit mostly smooth
      x. Fruit small, flattened, 1-seeded, in clusters

   y. Fruit a several to many seeded pod
      (x) Pod elongated or narrow
         m. Pod 6-10 cm. long, flowers cream colored

         n. Pod 1-2 cm. long, flowers yellow
            (m) Pod sessile

         (n) Pod stalked
            o. Pod 1 cm. or less, shorter than the spreading pedicels

         p. Pod 1-2 cm., longer than pedicels, appressed or ascending
            (o) Beak 1/2-1/4 as long as pod
               r. Pod 10-15 mm. long
               s. Pod 2-5 cm. long

            (p) Beak very short, pods appressed

   (y) Pod rounded or triangular
      m. Pod large, spiny

   n. Pod small, flat and smooth
      (m) Pod rounded, 2 seeded

      (n) Pod triangular, many seeded

2. Leaves compound
   a. Leaves with 3 leaflets
      (1) Leaf-margin entire
         (a) Plants strong-scented, leaflets not notched at apex

         (b) Plants scentless, leaflets notched at apex
      (2) Leaf margin serrate or toothed
KEY TO WEEDS

(a) Leaf margin coarsely serrate or toothed

(b) Leaf margin finely serrate
   x. Upright plants, 2-6 feet tall
   y. Plants lower, flowers in heads
      (x) Flowers white or whitish
          m. Plants creeping
      n. Plants ascending or erect
         (y) Flowers deep pink

b. Leaves with more than 3 leaflets
   (1) Leaves palmate
      (a) Leaves silvery underneath, plants creeping
      (b) Leaves green both sides, plants tall
   (2) Leaves pinnate
      (a) Leaves with 5 (rarely 3) leaflets, flowers purple, in spikes
      (b) Leaves with numerous leaflets, flowers yellow, not in spikes

Potentilla monspeliensis: cinquefoil
Melilodus albus: sweet clover
Trifolium repens: white clover
Trifolium hybridum: alsike
Trifolium pratense: red clover

Potentilla argentea: silver cinquefoil
Cannabis sativa: hemp
Petalostemon purpureus: prairie clover
Cassia chamaecrista: part-ridge pea
Spermatophytes Flowering Plants
Angiospermae Angiosperms
Dicotyledons
Ranales Buttercup Order
Ranunculaceae—Buttercup Family

Herbs or climbing shrubs; sepals 3-15, petals 0-15, stamens 3-15, achene, follicle or berry; flower apocarpous, apopetalous or apetalous, hypogynous, usually regular;

1. Flowers regular
   a. Climbing vine
   b. Erect herbs
      (1) Petals present, often much smaller than the sepals
         (a) Petals conspicuous, yellow
         (b) Petals much smaller than the colored sepals
            x. Sepals whitish; leaves palmately divided
            y. Sepals bluish; leaves finely cut
      (2) Petals absent; sepals colored

2. Flowers irregular
   a. Upper sepal hood-like
   b. Upper sepal funnel-like or spurred

Clématis—Virgin's Bower, Clematis
   (Gr. *klematis*, a climbing plant)

1. Leaflets toothed; flowering in summer
2. Leaflets entire; flowering in autumn

Ranunculus—Buttercup, Crowfoot
   (Lat. *ranunculus*, a little frog, perhaps from its habit)

1. Leaves lobed or cut
   a. Flowers yellow
      (1) Flowers 1-3 cm. wide
         (a) Flowers 1.2 cm. wide; stems smooth
         (b) Flowers 2-3 cm. wide; stems hairy
      (2) Flowers 4-5 cm. wide, often double
   b. Flowers white

2. Leaves not lobed
   a. Leaves entire, oblong or lanceolate
   b. Leaves crenate, rounded

Helleborus—Hellebore, Christmas Rose
   (Gr. *helleboros*, hellebore, of ancient repute as a medicine)

Leaves lobed; flowers white to pink

Nigella—Ragged Lady, Maid-in-a-Mist
   (Lat. *nigra*, black, *ella*, small, from the black seeds)

Leaves finely dissected, the upper enclosing the flower

Anemone—Anemone, Windflower
   (Gr. *anemone*, shaken by the wind, hence windflowers)

1. Stamens blue; peduncles 12
2. Stamens yellow; peduncles 25
PAPAVERACEAE—CAPPARIDACEAE

Aconitum—Aconite, Monkshood
(Gr. akoniton, monkshood, perhaps from an original rocky home)
1. Leaves 3-parted, but not divided to the base
2. Leaves 4-9-lobed, usually divided to the base
   a. Helmet closed
   b. Helmet open
      (1) Helmet narrow and cone-like
      (2) Helmet broad and low

Delphinium—Larkspur, Rocket
(Gr. delphinion, larkspur)
1. Pistils 2-3; leaves coarsely lobed
2. Pistil 1; leaves finely cut
   a. Pod smooth; flowers scattered
   b. Pod downy; flowers in a dense raceme

Brassicales Mustard Order
Papaveráceae—Poppy Family
1. Leaves spiny
2. Leaves not spiny
   a. Buds drooping
   (1) Flowers 5-15 cm. wide; sap white
   (2) Flowers 1-2 cm. wide; sap yellow
   b. Buds erect or nearly so
   (1) Leaves pinnatifid; sap saffron
   (2) Leaves dissected; sap colorless

Argémone—Prickly Poppy
(Gr. argémone, a kind of poppy)
1. Flowers yellow; leaves spotted
2. Flowers white; leaves not spotted

Papáver—Poppy
(Lat. papaver, poppy)
1. Stems leafy
   a. Leaves oblong, toothed, smooth and glaucous
   b. Leaves pinnatifid, bristly, green
      (1) Plant 1 m. high; flowers 1-2 dm. wide
      (2) Plant ½ m. high; flowers ½ dm. wide
2. Stems leafless
   a. Leaf divisions entire or somewhat cleft; capsule roundish
   b. Leaf divisions finely cut; capsule club-shaped

Chelidónium—Celandine
(Gr. chelidonion, swallow)
Leaves pinnate or twice pinnatifid; flowers yellow

Gláucium—Horned Poppy
(Gr. glaucion, the juice of the horned poppy)
Leaves pinnatifid; flowers yellow; pod beaked

Eschscholtzía—California Poppy
(Named for the collector, Eschscholtz)
Leaves dissected; flowers orange-yellow

Capparidáceae—Caper Family
1. Flowers pink; stamens 6
2. Flowers yellowish; stamens 10-12
BRASSICACEAE

Cléome—Cléome, Rocky Mountain Bee Plant
(Or uncertain origin and meaning)
Leaves of 3 leaflets; flower pink; ovary stalked

Polanisia—Polanisia
(Gr. polys, many, anisos, unequal, improperly formed, but referring to
Leaves of 3 leaflets; flowers yellowish; ovary nearly sessile

Brassicáceae—Mustard Family

Herbs; sepals 4, petals 4, stamens 6 or 4, 2 shorter, ovary syncarpous, apetalous, hypogynous, usually regular.
1. Pod globose, rounded or triangular
   a. Pod globose
   b. Pod round and flat
      (1) Flowers tiny, whitish or greenish
      (2) Flowers larger, white or purple, two petals larger
   c. Pod triangular
2. Pod oblong to linear
   a. Pod remaining closed when ripe
   b. Pod opening by two valves when ripe
      (1) Pod beaked at the tip
      (2) Pod not beaked at the tip
         x. Seeds in one row in each cell; flowers usually purple to red
         y. Seeds in two rows in each cell; flowers yellow or white
         (x) Pods awl-shaped
         (y) Pods oblong to almost round

Alýssum—Sweet Alyssum
(Gr. alýssos, curing madness, probably from supposed medical qualities)
Leaves lanceolate or linear; flowers white, fragrant

Lepidium—Pepper-grass
(Gr. lepidon, little scale, referring to the pod)
1. Flowers greenish; petals lacking
2. Flowers white; petals present

Ibériis—Candytuft
(From iber, the early name of Spain)
Leaves lanceolate to linear; flowers purplish

Búrsa—Shepherd’s Purse
(Lat. bursa, purse, referring to the pod)
Leaves deeply cut, often entire on the stem; flowers white

Brassica—Cabbage, Mustard
(Lat. brassica, cabbage)
1. Cultivated
   a. Leaves smooth, glaucous; flowers pale yellow
   b. Leaves hairy, green; flowers brighter yellow
2. Weeds
   a. Pod 2½—5 cm. long, beak 6—15 mm. long
   b. Pod 1—2½ cm. long, beak 2—10 mm. long
      (1) Beak 2—4 mm. long
      (2) Beak 8—10 mm. long

Raphánus—Radish
(Gr. rha, quick, phanos, appearing, referring to the germination)
1. Cultivated; flowers pink to white, pods 2 ½—seeded
2. Weed; flowers yellow, then white, pods 4—10—seeded
POLYGALACEAE—CARYOPHYLLACEAE

Matthiola—Stock, Gilliflower
(Named for the Italian botanist, Matthiolii)

1. Stem herbaceous; annual
   2. Stem woody at base; perennial

Sisymbrium—Hedge Mustard
(Gr. name of some mustard)

1. Pod 1-2 cm. long; flowers yellow
   2. Pod 6-10 cm. long; flowers cream-colored

Nasturtium—Cress, Horseradish
(Lat. nasturtium, cress, from nasus tortus, due to its pungency)

1. Cultivated; flowers white
   a. Aquatic; leaves pinnate
   b. Terrestrial; leaves large, simple, crenate

2. Native; flowers yellow
   a. Stems spreading, 1-2 dm. high
   b. Stems erect, 3-8 dm. high

Polygalaceae—Milkwort Family

Herbs with entire leaves; sepals 5, 2 larger, petals 3, somewhat united, stamens 8, ovary 2-celled, fruit a capsule; flower syncarpous, slightly sympetalous, hypogynous, somewhat zygomorphic.

Polygala—Milkwort
(Gr. polys, much, gala, milk, from its supposed virtue in increasing the flow of milk)

Leaves linear, whorled; flowers whitish

Resedaceae—Mignonette Family

Low herbs, with simple entire or lobed leaves; sepals 4-7, petals 4-7, irregular, stamens 10-40, ovary 1-celled, of 3-6-carpels, fruit a capsule; flower syncarpous, apetalous, hypogynous, zygomorphic.

Reséda—Mignonette
(Lat. reseda, a medicinal plant, from resedare, to allay)

Leaves oblong, entire or 3-lobed; flowers greenish, fragrant

Violaceae—Violet Family

Low herbs, with simple entire to deeply cut leaves; sepals 5, petals 5, 1 spurred, stamens 5, ovary 1-celled, carpels 3, fruit a capsule; flower syncarpous, apetalous, hypogynous, zygomorphic.

Viola—Violet, Pansy, Heart’s-ease
(Lat. viola, violet)

1. Flowering stems leafy; stipules large
   a. Spur short, blunt
      (1) Flowers large, 3-5 cm. wide
      (2) Flowers small, 1-2 cm. wide
   b. Spur long, acute

2. Flowering stems leafless; stipules lacking
   a. Lobes of the leaf broad, especially the middle one
   b. Lobes narrow, linear

Caryophyllales Pink Order

Caryophyllaceae—Pink Family

Herbs with opposite entire leaves; sepals 4-5, petals 4-5, rarely none, stamens 4-10, ovary 1-celled, rarely 2-5-celled, styles 2-5, fruit a capsule; flower syncarpous, apetalous, hypogynous, regular.

1. Sepals united
   a. Styles 2
      (1) Calyx with scales at base
      (2) Calyx without basal scales
         (a) Calyx pyramidal, the angles winged in fruit

   b. Styles 3
      (1) Sepals with scales at base
      (2) Sepals without basal scales
         (a) Calyx pyramidal, the angles winged in fruit
(b) Calyx oblong or bell shaped
  x. Calyx oblong; flowers large
  y. Calyx bell-shaped; flowers tiny
b. Styles 3-5
  (1) Styles 3
  (2) Styles 4-5
2. Sepals not united
   a. Styles 3-4
   b. Styles 5

**Dianthus—Pink, Carnation**  
(Gr. dio-, of Jupiter, anthos, flower)
1. Flowers in a flat-topped cluster; petals toothed
2. Flowers single or but 2-3 in a cluster
   a. Petals cut-fringed
   b. Petals merely toothed
      (1) Flowers 3-5 cm. wide, usually double
      (2) Flowers 1-2 cm. wide, single

**Vaccaria—Vaccaria, Cow Pink**  
(Lat. vacca, cow; of doubtful application)
Leaves lanceolate, clasping; flowers pink

**Saponaria—Bouncing Bet, Soapwort**  
(Lat. sapo, soap, from the soapy juice)
Leaves ovate to lanceolate; flowers pinkish

**Gypsophila—Gypsophila**  
(Gr. gypso, chalk, philos, loving)
1. Stems 3 dm. high, annual; flowers 6-8 mm. wide
2. Stems 6-10 dm. high, perennial; flowers 2-3 mm. wide

**Silene—Catchfly, Campan**  
(Probably from Gr. sialos, saliva, from the sticky nature)
1. Plant more or less sticky
   a. Plant very sticky and hairy; night-flowering
   b. Plant sticky near the joints, not hairy; day-flowering
      (1) Leaves lance-linear; flowers small, panicked
      (2) Leaves lance-ovate, glaucous; flowers showy in cymes, pink
2. Plant not sticky; calyx bladdery; petals white

**Lychnis—Corn-cockle, Ragged Robin**  
(Gr. lychnos, lamp, from the use of one species for window)
1. Sepal lobes long and leaf-like
2. Sepal lobes not leaf-like
   a. Plant white-cottony
   b. Plant not white-cottony
      (1) Petals heart-shaped
      (2) Petals deeply lobed
         (a) Petals 2-lobed
            x. Flower red, perfect
            y. Flower white, dioecious
         (b) Petals 4-lobed; flower often double

**Stellaria—Starwort chickweed**  
(Lat. stellaria, star-like, from the flowers)
Leaves oblong to ovate; petals 2 cleft
Cerástium—Chickweed  
(Gr. kerástion, little horn, from the form of the pod)
Leaves ovate, soft-hairy; petals shorter than calyx

*C. vulgátum*

**Portuláceae—Purslane Family**

Fleshy herbs; sepals 2, rarely 5, petals 4-5, stamens 4-30, ovary 1-celled, style usually 3-cleft; flower syncarpous, apetalous, hypogynous, somewhat irregular.

**Portuláca—Purslane, Moss Rose**  
(Lat. *portulaca*, purslane)
1. Leaves flat, wedge-shaped; flowers 5-6 mm. wide, yellow
   *P. olerácea*
2. Leaves round, linear; flowers 3-5 cm., many-colored
   *P. grandiflóra*

**Mollugáceae—Carpetweed Family**

Leaves spatulate, whorled; sepals white inside

*M. verticilláta*

**Amarantáceae—Amaranth Family**

Herbs with simple leaves; sepals 5, rarely 3, petals 0, stamens 5, rarely fewer, pistil 1-celled, stigmas 2-3, fruit a utricle; flower syncarpous, apetalous, sometimes monoecious or dioecious, hypogynous, regular.

1. Leaves alternate
   a. Bracts greenish; flowers imperfect
      (1) Pistillate flowers with calyx
      *Amarantus*
   b. Bracts colored; flowers perfect
      *Acnida*
2. Leaves opposite
   a. Flower cluster a dense terminal head
      *Celosia*
   b. Flowers in small terminal and axillary clusters
      (1) Leaves lanceolate to spatulate; stamens 5, staminoids 5
      *Tollanthera*
   (2) Leaves broad-ovate or orbicular; stamens 5
      *Iresine*

**Amarántus—Amaranth**  
(Gr. amarantos, unfading, from the papery bracts)

1. Flowers in dense terminal clusters
   a. Spikes red, drooping
      *A. caudátus*: prince's feather
   b. Spikes green, erect
      (1) Spikes 8-16 mm. thick
      *A. retrofóxus*: pigweed
      (2) Spikes 4-6 mm. thick
      *A. græcizans*
   2. Flowers in small axillary clusters
      a. Erect, bushy; sepals 3
      *A. slimoides*
      b. Prostrate, spreading; sepals 4-5

**Acnida—Water-hemp**

(Gr. a-, without, *künde*, nettle, the bracts not spiny)
Leaves lanceolate, entire; flowers green

*A. tamariscína*

**Celosía—Cockscomb**

(Gr. *kelos*, burning, dry, from the color or texture of the flowers)

1. Spikes comb-like
   *C. crístála*
2. Spikes plumy to cylindric
   *C. argéntea*

**Gomphréna—Globe Amaranth, Everlasting**  
(of doubtful origin and meaning)
Leaves oblong, sessile; heads round, crimson to white

*G. globósa*
Telanthera—Telanthera
(Gr. telos, end, anthera, flower, anther, perhaps from the strawberry)
Leaves lanceolate to spatulate, varicolored

Iresine—Iresine
(Gr. eiresione, a wreath, wound with wood, from the wood of a Iath)
Leaves ovate or rounded, red; calyx woolly

Chenopodiaceae—Goosefoot Family
Herbs with simple fleshy leaves; sepals 5-6, more or less united; petals usually 4, rarely 5; ovary 1-celled, stigmas 2-4; fruit an achene or utricle; flower syncarpous, aecalam, pogonous, regular.

1. Cultivated
   a. Flowers perfect
      (1) Leaves large, oblong-ovate
      (2) Leaves small, linear
   b. Flowers dioecious

2. Weeds
   a. Leaves flat, usually lobed
   b. Leaves awl-shaped, prickly pointed

Beta—Beet, Mangel Wurzel
(Lat. beta, beet)
Leaves long ovate, large; root globose to conical

Kochia—Mock Cypress
(Named for the German botanist, Koch)
Leaves linear, ciliate, 5-8 cm. long; plant pyramidal

Spinacia—Spinach
(Lat. spina, spine, perhaps from the spines of the fruits of cactus)
Leaves ovate to deltoid; flowers dioecious, axillary

Chenopodium—Goosefoot, Lamb's-Quarters
(Gr. chen, goose, podion, little foot, from the shape of the leaves)
1. Leaves mealy, pale, lanceolate to ovate; edible
2. Leaves smooth, green, cordate, angle-toothed; unpleasantly scented

Salsola—Russian Thistle
(Lat. salsus, salty, -ola, little, from its home on salt-areas)
Leaves awl-shaped, prickly; bracts spiny, calyx winged

Polygonaceae—Buckwheat Family
Herbs with entire leaves and papery sheathing stipules; sepals 4-6, united, petals 0, stamens 4-6, ovary 1-celled, stigmas 2-3, fruit an achene; flower syncarpous, aecalam, pogonous, regular.

1. Calyx of 4-5 sepals, often petal-like
   a. Leaves halberd- or arrow-shaped; flowers white
   b. Leaves linear to ovate; flowers greenish to pink

2. Calyx of 6 sepals, usually of 2 kinds
   a. Leaves rounded, 4-8 dm. wide, with edible stalks
   b. Leaves oblong to arrow-shaped, small to medium

Tagopusum—Buckwheat
Stamens 8, styles 3; achene triangular

Polygouum—Knotweed, Heartsease
(Gr. polys, many, gonu, knee, from the jointed stem)
1. Flowers single or clustered in the axils of the leaves
   a. Cultivated; 2-4 m. high; leaves 23 dm. long
   b. Native; less than 1 m. high
      (1) Low, spreading, 1-2 dm. high
(2) Tall, erect, 5-10 dm. high
2. Flowers in terminal clusters
   a. Leaves lance-shaped to ovate
      (1) Leaves dotted and sharp to the taste
   (2) Leaves neither dotted nor sharp
      x. Spikes nodding
         (x) Leaves ovate; flowers pink; stamens 7
         (y) Leaves long lanceolate; flowers flesh-colored; stamens 6
      y. Spikes erect
         (x) Flowers bright pink; stamens 8
         (y) Flowers greenish-pink; stamens 6
   (z) Flowers white
   b. Leaves heart-shaped or arrow-shaped; twining or climbing
      (1) Calyx winged in fruit
   (2) Calyx not winged

Rúmex—Dock, Sorrel
   (Lat. rumex, sorrel)
1. Leaves arrow-shaped, sour
2. Leaves lance-oblong, somewhat bitter
   a. Leaves curled at edges; valves of flower grain-bearing
   b. Leaves hardly curled; usually 1 valve grain-bearing

Rhéum—Rhubarb, Pie-plant
   (Gr. rheon, name of a medicinal plant)
   Leaves large, rounded, petiole fleshy, sour; flowers white

Allioniáceae—Four O’Clock Family
   Herbs with simple leaves; sepals 5, united into a bright corolla-like tube, petals 0, stamens 3-5, ovary 1-celled, fruit 1-seeded, achene-like, enclosed in the base of the calyx; flower syncarpous, synsepalous, apetalous, apparently epigynous, usually regular.
   1. Flowers many in an involucre of 5 separate bracts
   2. Flowers few in a 5-lobed involucre; stamens 3
   3. Flowers single in a 5-parted involucre; stamens 5

Abrónia—Abronia
   (Gr. abros, pretty, which the flowers are)
   1. Stems prostrate; flowers day-blooming, rose-purple
   2. Stems ascending; flowers night-blooming, white

Alliónia—Wild Four O’Clock
   (Named for the Italian botanist, Allioni)
   1. Leaves ovate, petioled
   2. Leaves oblong, lance-shaped or linear
      a. Leaves oblong to lance-shaped, hairy
      b. Leaves linear, smooth

Mirábilis—Four O’Clock, Marvel-of-Peru
   (Lat. mirabilis, wonderful, from the beautiful night-blooming flowers)
   Leaves ovate, entire; flowers varicolored

Malvales—Mallow

Malváceae—Mallow Family
   Herbs or shrubs, with alternate, simple, often lobed leaves; sepals 5, petals 5, stamens many, united by their filaments, ovaries several to many, separate or usually united, often falling away as one-seeded fruits, or the fruit a capsule.
1. Anthers clustered at top of filament tube; arating in fruit
   a. Stigmas linear
      (1) Cells 1-seeded
      (a) Involucre of 6-9 more or less united bracts
      (b) Involucre of 1-3 bracts, or lacking
         x. Involucre of 3 bracts; carpels not beaked
         y. Involucre of 1-3 bracts or none; carpels beaked
      (2) Cells 3-several-seeded; involucre none
   b. Stigmas capitate; flowers yellow to orange red

2. Anthers along the filament tube; fruit a 3-several-seeded capitate
   a. Style branches or stigmas 10
   b. Style-branches or stigmas 3-5
      (1) Involucre of many narrow bracts; seeds not cottony
      (2) Involucre of 3 large leaf-like bracts; seeds cottony

**Althaea—Marsh Mallow, Hollyhock**
(Gr. althaia, marsh mallow, from its bulbous properties)
1. Flowers 2-4 cm. wide, rose, in axillary clusters
2. Flowers 6-15 cm. wide, varicolored, often doubled in long spikes

**Malva—Mallow, Cheeses**
(Gr. malache, Lat. malva, mallow, from its noodley
1. Flowers about 1 cm. wide, white or pale blue, carpels about 15
2. Flowers 2.5 cm. wide
   a. Leaves with shallow lobes; flowers red-purple; carpels 10
   b. Leaves deeply lobed; flowers pink to white; carpels 15-20
      (1) Leaves twice-lobed, divisions linear; carpels hairy
      (2) Leaves once-lobed; carpels smooth

**Callirrhœc—Callirrhoe**
(Gr. kallirrhoe, beautiful-flowing, a famous spring at Athalula)
1. Leaves triangular-ovate, somewhat lobed; flowers deep purple
2. Leaves round, deeply palmately lobed; flowers red purple

**Abutilon—Velvet Leaf**
(Arabic name)
Leaves large, velvety, round-ovate; flowers yellow

**Malvœastrum—Red Mallow**
(Lat. malva, mallow, -astrum, like, from its round stalked)
Leaves palmate, 3-5-parted, silvery-scurfy; flowers 1-2 cm. wide

**Malvaviscus—Malvaviscus**
(Lat. malva, mallow, viscus, gum, from the sticky fruitful)
Leaves heart-shaped; flowers scarlet

**Hibiscus—Hibiscus, Rose-Mallow**
(Gr. hibiskos, name of some mallow)
1. Shrub; flowers red or varicolored, about 1 dm. wide
2. Herbs
   a. Low coarsely hairy weed; flower 2-5 cm. wide
   b. Tall smooth or downy herbs
      (1) Capsule ovoid, 2-4 cm. long; flowers pink to white
         (a) Leaves smooth on both sides
         (b) Leaves hairy below, sometimes above also
      (2) Capsule long and pod-like, 1-3 dm. long, flower yellowish
Gossypium—Cotton
(Name from the Arabic)
Leaves 5-lobed; flowers yellow, purple inside at base G. herbaceum

Moraceae—Mulberry Family
Herbs with opposite or alternate lobed leaves; sepals 5, more or less united, petals 0, stamens 5 ovary 1-celled, stigmas 2, fruit an achene; flower syncarpous, synepalous, apetalous, dioecious, hypogynous, regular.
1. Tall erect herb, leaves divided to the base into 5-11 lance-linear divisions Cannabis
2. Twining herb with 3-7 lobed leaves; fruit cone-like Humulus

Cannabis—Hemp
(Lat. cannabis, hemp) Plant 1-4 m. high; flowers green, in axillary spikes C. sativa

Húmulus—Hop
Leaves rough, ovate in outline; fruit clusters 3-8 cm. long H. lupulus

Urticaceae—Nettle Family
Herbs with opposite or alternate leaves, sometimes with stinging hairs; sepals 3-5, sometimes united, petals 0, stamens 3-4, ovary 1-celled, stigma 1, fruit an achene; flower syncarpous, apetalous, polygalous, monoecious or dioecious, hypogynous, regular.
1. Leaves opposite
   a. Armed with stinging hairs
   b. Smooth and without stinging hairs
2. Leaves alternate, without stinging hairs

Urtica—Nettle
(Lat. urtica, nettle, from uro, to burn, from the stinging hairs)
1. Leaves hairy, heartshaped at base
2. Leaves smooth or nearly so, round at base

Urtica Pilea
(U. dioica U. gracilis)
Pilea—Richweed, Clearweed
(Lat. pileus, cap, from the cap-like sepal of one species)
Stems clear, 1-4 dm. high; leaves ovate, 3-ribbed P. púnila

Pariétária—Pellitory
(Lat. parietaria, on walls, from páries, wall)
Low annual herb; leaves lance-oblong P. pensilvánica

Geraniales Geranium Order

Geraniáceae—Geranium Family
Herbs, or some shrubby, with simple lobed or compound leaves; sepals 5, petals 5, stamens 5 or 10, ovary 5-celled, stigmas 5, fruit separating at maturity into 5 achene-like parts; flower syncarpous, apopetalous, hypogynous, regular.
1. Leaves entire to palmately divided
   a. Flowers regular; stamens with anthers 10
   b. Flowers somewhat irregular; stamens with anthers 7-8
2. Leaves pinnate; stamens with anthers 5

Geránium—Cranesbill
(Gr. geranos, crane, referring to the form of the fruit)
1. Flowers red
   a. Flowers 1 cm. wide; leaves 3-parted
   b. Flowers 2-4 cm. wide; leaves 7-parted
2. Flowers blue or violet
3. Flowers white or pink

Geranium Peltargonium Erodium
G. robertiánun: herb Robert
G. sanguineum G. ibéricum G. Richardsiónii
OXALIDACEAE—TROPAEOLACEAE

Pelargonium—Geranium
(Gr. pelargos, stork, referring to the form of the fruit)
1. Plant trailing; leaves ivy-like, petiole attached to lower surface
2. Plant erect, not trailing
   a. Leaves with shallow lobes, marked with a semicircular band, fleshy
   b. Leaves distinctly or deeply lobed, usually not zoned; branches woody
      (1) Leaves rarely lobed to the middle, fragrant
      (2) Leaves lobed beyond the middle, often to the base, fragrant
         (a) Lobes oblong
         (b) Lobes linear

Eródium—Storksbill
(Gr. erodios, heron, referring to the form of the fruit)
Low, spreading; leaves pinnate, hairy; flowers pink

Oxalidáceae—Oxalis Family
Low, usually stemless herbs, with 3-foliate leaves and acid sap; sepals 5, petals 5, ovary 5-celled, stigmas 5, fruit a capsule; flower syncarpous, apetalous, hypogynous, regular.

Oxalí—Oxalis, Wood-sorrel
(Gr. oxalis, sorrel, from oxys, sour, referring to the sap)
1. Native; flowers yellow, 5-10 mm. wide
2. Cultivated; flowers varicolored, 10-25 mm. wide
   a. Stems leafy; leaflets deeply notched; flowers yellow
   b. Stems leafless; leaflets not deeply notched; flowers rose
      (1) Leaves fleshy, 5-6 cm. wide; stem from bulbs
      (2) Leaves thin, hairy, 3-4 cm. wide; stem from thickened rootstocks

Balsamináceae—Touch-me-not Family
Herbs with simple alternate leaves; sepals 4, one of them spurred, petals apparently 2, ovary 5-celled, stigma 1, fruit a capsule which coils elastically, ejecting the seeds; flower syncarpous, apetalous, hypogynous, irregular.

Impátiens—Touch-me-not, Balsam, Jewel-weed
(Lat. impátiens, impatient, hence touch-me-not, from the elastic petal)
1. Native; flowers pale-yellow to orange
   a. Flowers pale yellow, with scattered reddish dots
   b. Flowers orange, densely dotted with red-brown
2. Cultivated; flowers red to white, varicolored
   a. Flower flat, red; spur long, narrow
   b. Flower cup-like, varicolored, often double; spur short, cone

Tropaeoláceae—Tropaeolum Family
Fleshy herbs, climbing with their long petioles, or more or less creeping, the leaves lanceolate or oval, petioles, sepals 5, united at the base into a long spur, petals usually 5, stigmas 8, ovary 3-celled, stigma 1, fruit of 3 fleshy achene-like bodies, flower syncarpous, apetalous, hypogynous, irregular.

Tropácolum—Tropaeolum, Nasturtium, Indian Cress
(Gr. tropáion, Lat. tropaeum, tropae, perhaps from the resembling smell)
LINACEAE—EUPHORBIACEAE

Linaceae—Flax Family

Herbs with simple alternate entire leaves; sepals 5, petals 5, stamens 5, ovary 5-celled, styles 5, fruit a 10-celled capsule; flower syncarpous, apetalous, hypogynous, regular.

Linum—Flax

(Gr. linon, Lat. linum, flax)

1. Flowers blue
   a. Annual; sepals pointed
   b. Perennial; sepals blunt
2. Flowers red

L. usitatissimum: common flax
L. perennis: blue flax
L. tanguineum: red flax

Rutaceae—Rue Family

Herbs, shrubs or trees with compound leaves, sometimes reduced to the terminal leaflet, and appearing simple; sepals 4-5, or lacking, petals 4-8, stamens 4-60, ovary 2-5-celled, styles 1-5, or 2-5 separate pistils; fruit various, capsule, samara, drupe or berry; flower apocarpous or syncarpous, apetalous, perfect, polygamous or dioecious, hypogynous, regular.

1. Flowers greenish-yellow; leaves compound
   a. Flowers white, fragrant; leaves of one leaflet
   b. Leaves 1-4 dm. wide, 7-11 cleft

Ruta—Rue

(Lat. ruta, rue)

Bushy herb, woody at base; leaflets oblong to obovate, dotted

Citrus—Orange, Lemon, Citron

(Gr. kitron, the citron tree)

1. Leaves 1-foliate, evergreen
2. Leaves 3-foliate, deciduous

C. aurantium
C. trifoliata

Euphorbiaceae—Spurge Family

Herbs or shrubs usually with milky juice and alternate simple, leaves; sepals 3-5, somewhat united, or lacking, petals 0, or rarely 3-6, stamens 1-30, ovary 3-lobed or 3-celled, stigmas 3-6, fruit a 3-celled capsule; flower syncarpous, apetalous, monoecious or dioecious, hypogynous. In the genus Euphorbia, a cup-like involucre, resembling a calyx, contains 1 pistillate and several-many staminate flowers of 1 stamen each, and frequently bears 1-4 brightly colored glands at the edge, simulating a corolla.

1. Leaves very large, 3-6 dm. wide, 7-11 cleft
2. Leaves not cleft
   a. Calyx present
      (1) Staminate flowers with 8-16 stamens and no petals
      (2) Staminate flowers with 15-30 stamens and 5-6 petals
   b. Flowers tiny, many in a calyx-like involucre

Ricinus—Castor-bean, Castor-oil Plant

(Lat. name of the castor bean)

Plant 1-4 m. tall; capsules spiny

Acalypha—Acalypha

(Gr. akalyphe, nettle)

1. Flowers in red spikes, 1-3 dm. long
2. Flower clusters small and inconspicuous
   a. Greenhouse shrub with colored leaves
   b. Low native weed with green leaves

Euphorbia—Spurge

(Gr. euphorbion, name of a resinous plant)

1. Shrubs, often with spines
   a. Smooth shrubs with the upper leaves flower-like; involucre with 1 yellow gland
   b. Spiny shrubs with green leaves; involucre with 2 red petal-like glands
2. Smooth herbs
PLUMBAGINACEAE—PRIMULACEAE

a. Stems 1-2 m. tall; inflorescence with 5 white petals-like flowers
(1) Upper leaves white or white-margined, something
(2) Leaves scattered, not white and not in a rosette
b. Stems prostrate, or 1.3 dm. high
(1) Stems prostrate or spreading
(a) Leaves hairy
(b) Leaves smooth
x. Seeds wrinkled and pitted
y. Seeds strongly wrinkled, not pitted
(2) Stems erect, 2.3 dm. high; leaves serrate

Codiaeum—Codiaeum Gratiss
(Latinized form of the Malay name)
Shrub; leaves ovate-lanceolate, varicolored

Primula—Primrose, Cowslip

(Lat. primus, spring, referring to the time of blooming)

1. Flowers pink to purple or white
   a. Leaves round-ovate, lobed; calyx inflated
   b. Leaves spatulate, not lobed; calyx not inflated; narrow
2. Flowers yellow to red
   a. Flowers 1-2 cm. wide; corolla limb cup-like
   b. Flowers 2-4 cm. wide; corolla limb flat
   (1) Leaves thick, 5-8 cm. long
   (2) Leaves thinner, 1-2 dm. long
      (a) Flowers stemless or nearly so, among the leaves
      (b) Flowers on leafless scapes
PLANTAGINACEAE—CONVOLVULACEAE

Cyclamen—Cyclamen
(Gr. kyklamínos, cyclamen, from kyklós, referring to the coiled flower stalk of some species)
Flowering stems leafless, from a large corm; flowers varicolored C. persicum

Lysimáchina—Loosestrife
(Gr. lysimachia, loose-strife, from its reputed medical properties)
Stems creeping; the leaves round, opposite, with single yellow flowers in the axils L. nummulária: moneywort

Anagallis—Pimpernel
(Gr. name of the pimpernel, from agallomai, to delight)
1. Low and spreading; leaves ovate; flowers 4-6 mm. wide A. arvensis
2. Erect; leaves lance-linear; flowers 10-15 mm. wide A. linifólia

Plantagináceae—Plantain Family
Low herbs with parallel-veined leaves at the base of the flowering stems; sepals 4, united, petals 4, united, stamens 4, rarely 2, exerted in flowering, ovary 2-celled, stigma 1, hairy and thread-like, fruit a pyxis; flower syncarpous, sympetalous, hypogynous, regular.

Plantágo—Plantain
(Lat. planta, sole, perhaps from the broad flat leaf)
1. Leaves ovate
   a. Pod ovoid, splitting circularly near the middle P. májor
   b. Pod oblong, splitting near the base P. Rugélii
2. Leaves lanceolate to linear
   a. Leaves lanceolate to oblong, 8-40 mm. wide
      (1) Leaves lanceolate, 3-5-ribbed, 8-25 mm. wide P. lanceoláta
      (2) Leaves oblong to spatulate, 5-9-ribbed, 15-40 mm. wide P. eriópoda
   b. Leaves linear, 3-8 mm. wide
      (1) Leaves silky-hairy; bracts little longer than flowers P. Púrshii
      (2) Leaves smooth or hairy; bracts several times longer than flowers P. aristáta

Polemoníales Phlox Order
Polemoniáceae—Phlox Family
Herbs with opposite or alternate, simple or compound leaves; sepals 5, united, petals 5, united, stamens 5, ovary 3-celled, stigmas 3, fruit a capsule; flower syncarpous, sympetalous, hypogynous, regular.
1. Climber; leaves pinnate; corolla bell-shaped Cobáca
2. Erect herbs; leaves simple; corolla salver-form Phlox

Cobáca—Cobáca
(Named for a Mexican priest, Cobo)
Leaves ovate; flower greenish or purplish, 5-6 cm. long C. scóndens

Phlóx—Phlox, Sweet William
(Gr. phlóx, flame, from the brilliant colors)
1. Plants hairy
   a. Perennial; blooming in May, and sparsely again in autumn P. divaricátá
   b. Annual; blooming in summer and autumn P. Drummóndii
2. Plants smooth, perennial P. paniculátá

Convolvuláceae—Morning Glory Family
Twining or trailing herbs, with simple alternate leaves, or leafless; sepals 4-5, usually united, petals 4-5, united, stamens 4-5, ovary 2-4-celled, stigmas 2-3, fruit a capsule; flower syncarpous, sympetalous, hypogynous, regular.
1. Stems leafy, green; flowers large
   a. Stigma capitate, somewhat lobed Quamoclit
      (1) Leaves pinnately parted; corolla salver-form
(2) Leaves not pinnately parted; corolla funnel-form
b. Stigmas 2, linear
2. Stems leafless, orange or yellow; flowers tiny

Quámocht—Cypress Vine
(The Mexican name)

Leaf segments linear; flowers single, red

Ipoméa—Morning Glory, Sweet Potato
1. Flowers opening in the morning
a. Corolla funnel-form, 3-7 cm. wide, never scarlet yellow
   (1) Leaves cordate-ovate, entire; stem hairy
   (2) Leaves angled to deeply lobed
      (a) Plant hairy
      (b) Plant smooth
b. Corolla salver-form, 1-2 cm. wide, scarlet yellow
2. Flowers opening at night; corolla white, 10-15 cm. wide

Convólulus—Bindweed
(Lat. convolve, to twine, from the habitat)
1. Corolla white to rose; weeds
   a. Calyx enclosed in 2 leafy bracts; flowers 4-5 cm. long
   b. Calyx without leafy bracts; flowers 2 cm. long
2. Corolla blue, with white throat and yellow tube; bushy herb, cultivated

Cúscuta—Dodder
(Of uncertain origin and meaning)
1. Sepals separate
   a. Styles as long as the ovary
   b. Styles 2-3 times as long as the ovary
2. Sepals united
   a. Flowers sessile
   b. Flowers stalked

Solanáceae—Potato Family

Herbs or shrubs, with alternate, usually strong-scented leaves; sepals 5, usually purple or white, ovary usually 2-celled, sometimes 3-5-celled, stigma 1, sometimes 2 lobed, from a berry or capsule; flower syncarpous, sympetalous, hypogynous, regular or sometimes irregular.
1. Shrub, often spiny, with green-purple flowers and red berries
2. Herbs
   a. Corolla wheel-shaped or cup-shaped, more or less flat
      (1) Calyx bladdery, inflated in fruit
      (2) Calyx not bladdery
         (a) Filaments much longer than the anthers
         (b) Filaments not longer, usually shorter than the anthers
            x. Anthers united at the tip; flower yellow
            y. Anthers not united; flower not yellow, except in one spiny species
   b. Corolla tubular to funnel-form or salverform
      (1) Fruit spiny; flowers long tubular, solitary
      (2) Fruit not spiny
         (a) Fruit a purple berry; corolla long bell-shaped
         (b) Fruit a capsule
            x. Calyx enclosing the pod
               (x) Calyx with a spreading net-like border in fruit
               (y) Calyx bell-shaped, without a spreading border
            y. Calyx not enclosing the pod
SOLANACEAE

Lycium—Matrimony Vine
(Named from the country Lycia)

Leaves spatulate, entire; branches trailing

Phýsalis—Ground Cherry
(Gr. physális, bubble, from the inflated calyx)

1. Fruiting calyx red
   P. alkekéngi: strawberry, tomato

2. Fruiting calyx not red
   a. Plant glandular, hairy
   b. Plant smooth or sparsely hairy
      (1) Corolla dull yellow with brown center; berry yellowish
      (2) Corolla bright yellow with purple center; berry purple

Lycopersicum—Tomato
(Gr. lykos, wolf, persikon, peach)

Leaves pinnate, hairy, strong-scented; flowers yellow; fruit red or yellow

Capsicum—Red Pepper, Cayenne Pepper, Green Pepper
(Gr. kapsis, gulping down, perhaps from its pungency)

1. Annual or biennial; fruit oblong-linear to round
   C. annuum

2. Perennial; fruit oblong-pointed as a rule
   C. frutécens

Physalis—<round Cherry
Gr. physall'ís, bubble, from the inflated calyx)

1. Corolla dull yellow with brown center; berry yellowish
   P. lanceoláta

2. Corolla bright yellow with purple center; berry purple
   P. ixocóarpa

Atropa—Belladonna
(Named for Atropos, one of the Fates)

Leaves ovate, entire; corolla and berry purple

Hyoscyamus—Henbane
(Gr. hyos, hog. kyamos, bean)

Leaves clasping, toothed, clammy; flowers yellowish

Datura—Thorn-apple, Stramonium, Jimson Weed
(Name from the Arabic)

1. Flower white
   a. Leaves lobed
   b. Leaves entire or merely wavy
      (1) Plant smooth; corolla 5-toothed
      (2) Plant viscid, hairy; corolla 10-toothed

2. Flower violet or lilac

Átropa—Belladonna
(Named for Atropos, one of the Fates)

Leaves ovate, entire; corolla and berry purple

A. belladónna

H. níger
1. Flowers white, at least within, opening at night
2. Flowers usually some shade of red, day-blooming
   a. Leaves sessile, decurrent; flowers red or purple
   b. Leaves stalked; flowers yellowish or greenish

Petunia—Petunia
(Native name of the treasure)
Leaves ovate, hairy, nearly sessile; flowers variegated, often alate

Boraginaceae—Borage Family
Herbs with simple alternate leaves, often rough-hairy; sepals 5, usually purple; petals 5, usually alate;
5, ovary 4-celled or deeply 4-lobed, separating at maturity into 4 units, usually 1 or 2 flowers;
or syncarpous, sympetalous, hypogynous, regular, or irregular in one genus.
1. Ovary divided into 4 parts
   a. Corolla regular
      (1) Corolla wheel-shaped, tube lacking
      (2) Corolla more or less tubular, with scale-like appendages to the throat
   (a) Flowers blue to purple
      x. Nutlets bur-like, with hooked prickles
      y. Nutlets smooth
   (b) Flowers yellowish white
   b. Corolla irregular
2. Ovary entire, but the ripe fruit separating into 2 or 4 nutlets

Borago—Borage
(Supposed to be from corago, because of reputed virtues as a purgative)
Leaves oval to lance-oblong, bristly; flowers blue to purple

Cynoglossum—Houndstongue
(Gr. kynos, dog, glossa, tongue)
Leaves spatulate to lance-oblong, downy, flowers red-purple

Anchusa—Alkanet
(Gr. enchusa, alkane-, because the root yields a red dye)
Leaves lance-ovate, rough; flowers large

Symphytum—Comfrey
(Gr. symphyton, comfrey, from symphyo, to unite, named from its having sprouting branches)
Leaves lance-oblong, soft-hairy, decurrent

Heliotropium—Heliotrope
(Gr. heliotropion, a plant which turns toward the sun)
1. Corolla tube hardly longer than the calyx
2. Corolla tube twice longer than the calyx

Gentianales—Gentian Order

Gentianaceae—Gentian Family
Herbs with opposite simple entire sessile leaves; sepals 4-5, unequal, purple; 4-5, unequal, channeling;
4-5, alternate with the corolla lobes; ovary 1 celled, with 2 pericarpal placenta, placentas of large capsule; flower syncarpous, sympetalous, hypogynous, irregular
1. Corolla tubular, blue; flowers solitary or in clusters
2. Corolla wheel-shaped, green; flowers in a large panicle

Gentiana—Gentian
(Named for King Gentian of Egypt)
1. Corolla lobes fringed; flower open
2. Corolla lobes not fringed; flower closed
Frásera—Frasera  
(Named for the botanist Fraser)  
*F. speciosa*

**Apocynáceae—Dogbane Family**

Herbs or shrubs, usually with milky juice, and with opposite simple leaves; sepals 5, united, petals 5, united, stamens 5, ovaries 2, the styles or at least the stigmas united, fruit a follicle; flower apocarpous, sympetalous, hypogynous, regular.

1. Shrubs; leaves somewhat whorled, leathery
2. Herbs, or woody at base; leaves opposite

**Nérium—Oleander, Rose Bay**  
(Gr. nerion, oleander)  
*Nerium*

Flowers rose to white, in terminal clusters

**Vinca—Periwinkle**  
(Lat. vincio, to bind, from the cord-like stems)  
*Vinca*

Leaves oblong, veiny, shining; flowers salverform, rose to white

**Scrophulariales**  
**Snapdragon Order**

**Scrophulariáceae—Snapdragon Family**

Herbs with mostly simple leaves; sepals united, the calyx often 2-lipped, petals usually 5, and united into an irregular or 2-lipped corolla, rarely 4 and regular, stamens 4, rarely 2 or 5, ovary 2-celled, stigma 1, entire or 2-lobed, fruit a capsule; flower syncarpous, sympetalous, hypogynous, typically irregular.

1. Stamens, or the anther-bearing ones, only 2
   a. Corolla 2-lipped
      (1) Leaves opposite; both corolla lips sac-like  
      (2) Leaves alternate; one lip slightly sac-like
   b. Corolla not 2-lipped, often nearly regular
2. Anther-bearing stamens 4
   a. Fifth stamen present as a sterile filament
      (1) Corolla strongly 2-lipped  
      (a) Corolla wide open; sterile filament conspicuous  
      (b) Corolla nearly closed; sterile filament shorter than others  
      (2) Corolla not 2-lipped, somewhat irregular
   b. Fifth stamen entirely lacking
      (1) Base of the corolla with a spur or sack  
      (a) Corolla spurred  
      (b) Corolla with a sack at base  
      (2) Corolla without spur or sack  
      (a) Corolla salverform, not 2-lipped  
      (b) Corolla more or less tubular and 2-lipped
         x. Climbing by coiling leaf stalks
         y. Not climbing
            (x) Leaves alternate; flowers terminal  
            (y) Leaves opposite; flowers axillary
               m. Calyx 2-lipped; corolla 4-lobed
               n. Calyx 5-toothed; corolla 2-lipped
3. Stamens with anthers 5, corolla wheel-shaped

**Calceolária—Calceolaria**  
(Lat. calceolus, slipper, from the form of the flower)  
1. Leaves simple; flower yellow, with red-orange dots  
2. Leaves pinnate; flower yellow

**Schizánthus—Butterfly Flower**  
(Gr. schizos, split, anthos, flower, from the lobed petals)  
Petals much lobed, the lower sack-like, varicolored

*Calceolaria*  
*Schizanthus*  
*Veronica*  
*Linaria*  
*Antirrinum*  
*Browallia*  
*Maurandia*  
*Digitalis*  
*Torenia*  
*Minimus*  
*Verbascum*  
*C. pendula*  
*C. pinnata*  
*S. pinnata*
Veronica—Speedwell
(Or doubtful origin and meaning)
1. Leaves in whorls; flowers white to blue, in terminal spikes
2. Leaves opposite or alternate; flowers blue, axillary

Pentstemon—Beard Tongue
(Gr. pente, five, stemon, stamen, from the sterile stamen)
1. Flowers pink to red, narrow; leaves linear to lanceolate
2. Flowers white; leaves ovate to oblong

Chelone—Turtle-head, Balmony
(Gr. chelone, turtle, from the form of the corolla)
Leaves lanceolate to oblong; flowers white to pale purple

Salpiglossis—Garden Trumpet
(Gr. salpingos, trumpet, glossa, tongue; incorrectly formed)
Leaves lanceolate, entire to pinnatifid; flowers varicolored

Linaria—Butter-and-Eggs
(Lat. linum, flax, from the resemblance)
1. Plant creeping; leaves round; flowers blue
2. Plant erect; leaves linear or lance-linear
   a. Flowers blue
   b. Flowers yellow

Antirrhinum—Snapdragon
(Gr. anti-, like, rhinos, nose, from the form of the flower)
1. Plant erect; leaves linear to oblong
   a. Flowers 3-5 cm. long; leaves lanceolate to oblong
   b. Flowers 1-2 cm. long; leaves linear
2. Plant climbing by coiling petioles; leaves halberd-like

Browallia—Browallia
(Named for a Swedish botanist, Browall)
Leaves ovate, cuneate or rounded; flowers varicolored

Maurandia—Maurandia
(Named for the botanist Maurandy)
Stem and leaves smooth; corolla purple

Digitális—Foxglove
(Lat. digitalis, finger-like, from the form of the corona)
1. Flowers yellowish
2. Flowers purple

Torénia—Torenia
(Named for the Swedish botanist, Toren)
1. Corolla yellow
2. Corolla blue to white
   a. Corolla 4-lobed
   b. Corolla 2-lipped

Miníllus—Monkey Flower
(Gr. mimos, Lat. mimus, comic actor, from the grinning corona)
1. Flowers yellow; cultivated
   a. Creeping, hairy, musk-scented
   b. Erect, smooth
2. Flowers red-purple; native
ACANTHACEAE—BIGNONIACEAE

Verbascum—Mullein
(Lat. verbascum, mullein)
1. Leaves woolly, white to gray
   a. Leaves densely woolly, decurrent on the stem
   b. Leaves thinly woolly, not decurrent
2. Leaves smooth, green

V. thápsus
V. lychnitis
V. blattária

Acantháceae—Acanthus Family
Herbs with opposite simple leaves; sepals 5, united, petals 5, united, stamens 4 or 2, ovary 2-celled, stigma 1 or 2, fruit a capsule; flower syncarpous, sympetalous, hypogynous, usually irregular.
1. Leaves pinnatifid; corolla of one 3-lobed lip
   Acanthus
2. Leaves arrow-shaped; corolla 5-lobed, nearly regular
   Thunbergia

A. spinósus
A. mollís

Thunbér gia—Thunbergia
More or less climbing; flowers varicolored

Gesneráceae—Gesnera Family
Herbs with simple leaves; sepals 5, united, petals 5, united, ovary 1-celled with 2 parietal placentae, stigma entire or 2-lobed, fruit a capsule; flower syncarpous, sympetalous, hypogynous, regular or irregular.
1. Stems leafless
   a. Stamens 4
   b. Stamens, at least the anther-bearing, 2
2. Stems leafy

Sinningia
Streptocarpus

Sinningia—Gloxinia
(Named for the botanist, Sinning)
Leaves spatulate to rounded; flowers varicolored

Streptocárpus—Streptocarpus
(Gr. streptós, twisted, kárpos, fruit, from the twisted pods)
1. Leaf single, basal; flowers several on each scape
   S. polyántha
2. Leaves several to many; flowers usually single
   S. Rétzii

Achiménes—Achimenes
(Gr. acheimenes, not disturbed by winter, i.e., blooming late)
1. Flowers violet blue
   A. longifíóra
2. Flowers reddish
   A. grandifíóra

Bignoníaceae—Catalpa Family
Herbs, or woody plants with simple or compound leaves, sepals united, petals 5, united mostly into a 2-lipped corolla, stamens 4 or 2, ovary 1-4-celled, stigma 2-lobed; fruit a capsule or siliqua; flower syncarpous, sympetalous, hypogynous, irregular.
1. Leaves pinnate; flowers on a scape, rose
   Incarvilléa
2. Leaves simple; flowers on the leafy stem, whitish
   Martynia

Incarvilléa—Incarvilléa
(Named for Incarville, a French missionary)
1. Leaflets entire or toothed
   a. Leaflets toothed or nearly so
   b. Leaflets toothed throughout
2. Leaflets cleft

I. álgae
I. Delaváyi
I. variábilis

Martýnia—Unicorn Plant
(Named for the English botanist, Martyn)
Leaves heart-shaped, entire, hairy; flowers whitish to lilac or yellowish

M. proboscídea
Lamiales Mint Order

Verbenaceae—Verbena Family

Herbs or shrubs with simple opposite or whorled leaves; sepals 5, united, usually irregular, to an irregular corolla, stamens 4, ovary 1-celled, stigma single, after fruit 2-valved, seed 1-valved, or dry and then usually separating into 4 nutlets; flowers usually axillary, sometimes terminal.

1. Shrubs; corolla 4-lobed
2. Herbs; corolla 5-lobed or 2-lipped
   a. Calyx 2-lipped, with spiny teeth; corolla 2-lipped; native
   b. Calyx not 2-lipped and spiny; corolla irregularly 5-lobed

Lantana—Lantana

(Only one species of uncertain origin and meaning)

Flowers yellow, then orange and finally reddish; leaves ovate

Phryma—Lopseed

(Only one species of uncertain origin and meaning)

Leaves ovate; flowers small, in a loose spike; fruits spiny

Verbena—Verbena, Vervain

(Lat. verbena, a sacred plant)

1. Native weeds
   a. Plant spreading; bracts longer than the flowers
   b. Plant tall, erect; bracts shorter than the flowers
      (1) Flowers white; spike very narrow
      (2) Flowers blue; spike broader
         (a) Leaves lanceolate, somewhat hairy
         (b) Leaves ovate, very hairy

2. Garden plants, extensively hybridized and known as

Lamiaceae—Mint Family

Herbs, mostly aromatic, usually with opposite leaves and 4 angled stems, rarely 1, arising from the ground.

5. united, usually irregular, stamens 4 or 2, ovary 4-lobed, i.e., the two pairs divided

1. Corolla regular or nearly so
   a. Calyx 5-toothed; corolla 4-cleft
   b. Calyx 2-lipped in fruit; corolla 5-cleft

2. Corolla irregular, usually 2-lipped
   a. Stamens 2
      (1) Herbs
         (a) Flowers in racemes or spikes; calyx 2-lipped
         (b) Flowers in heads; calyx 5-toothed
      (2) Shrubs
   b. Stamens 4
      (1) Calyx 2-lipped
         (a) Calyx cup-shaped, lips entire
         (b) Calyx lips toothed
            x. Flower bracts large, round, purplish
            y. Flower bracts neither round nor purple
               (x) Corolla apparently with one long lip
               (y) Corolla clearly 2-lipped
                  m. Corolla yellowish to white
                  n. Corolla purple or blue
      (2) Calyx more or less equally 4-5-toothed, rarely 10-toothed
         (a) Calyx 10-toothed; leaves white woolly
         (b) Calyx 4.5-toothed
            x. Upper tooth much larger than the others
               (x) Corolla with upper lip 4-lobed, lower 1-lobed
m. Leaves green; filaments separate
n. Leaves colored; filaments united
(y) Corolla with upper lip 2-lobed, lower 3-lobed
m. Native herb; leaves lanceolate to ovate
n. Hoary undershrub, cultivated; leaves lance-linear
y. Teeth equal in size or nearly so
(x) Calyx swollen in fruit
(y) Calyx not swollen
m. Calyx teeth rigid, spiny
n. Calyx teeth not spiny
(m) Flowers in heads
(n) Flowers not in heads
r. Stamens projecting, at least 2 of them
(r) Leaves linear to oblong; bracts green
(s) Leaves ovate; bracts purple
s. Stamens not projecting
(r) Lower or outer stamens shorter than the inner
h. Anther halves parallel
i. Anther halves spreading
(s) Lower or outer stamens longer than the inner
h. Upper lip of the corolla flat, erect
i. Upper lip hooded or concave
(h) Calyx 5-nerved
(i) Calyx 10-nerved

Méntha—Mint
(Gr. mintha, Lat. mentha, mint)

1. Leaves sessile
2. Leaves petioloed
   a. Flowers mostly in terminal spikes
      (1) Leaves lanceolate
      (2) Leaves ovate
   b. Flowers in axillary whorls

Perilla—Perilla
(From the native name in India)
Leaves ovate, bronze-purple, fragrant; flowers rose or whitish

Sálvia—Sage
(Lat. from salvis, well, referring to its medical use)

1. Flowers blue
   a. Tall; leaves green; flowers large, 2-3 cm.
   b. Low; leaves white-woolly; flowers 1-2 cm.
2. Flowers red
   a. Floral leaves and calyx green
   b. Floral leaves and calyx red

Monárda—Balm, Horse-mint
(Named for Monardez, a Spanish writer on medical plants)

1. Corolla red
2. Corolla rose-purple to white

Rosmarínus—Rosemary
(Lat. ros, dew, marinus, of the sea)
Shrub with evergreen linear leaves, hoary beneath; flowers blue

Ocimum
Coleus
Dracocephalum
Lavandula
Physostegia
Leonurus
Koellia
Hyssopus
Origanum
Lopanthus
Nepeta
Satureia
Lamium
Stachys
M. spicáta: spearmint
M. piperíta: peppermint
M. citrátá: bergamot mint
M. canadénsis: wild mint
P. crispá
S. azúrea: blue sage
S. officindális: garden sage
S. fúlgens
S. spílándens: red sage
M. didýma: Oswego tea
M. fistulósa: wild bergamot
R. officindális
LAMIACEAE

Scutellaria—Skullcap
(Lat. scutella, flat dish, referring to the calyx)
1. Leaves sessile; flowers 2-3 cm. long, solitary
2. Leaves petioled; flowers 6-8 mm. long, in racemes

Prunella—Heal-all, Self-heal
(of uncertain origin)
Leaves oblong to ovate; bracts round; flowers blue-purple

Teucrium—Germander
(Gr. teucrion, germander, perhaps named for Teucer, first king of Troy)
Leaves lance-ovate, serrate; flowers purplish

Melissa—Bee-balm
(Gr. melissa, bee, referring to its attractiveness for bees)
Leaves ovate, crenate; flowers yellowish or white

Thymus—Thyme
(Gr. thymon, thyme, from its fragrance)
1. Creeping, leaves petioled; flowers axillary
2. Erect; leaves sessile; flowers in terminal spikes

Marrubium—Hearse-plant
(Lat. name from the Hebrew word for bitter)
Leaves ovate-rounded, crenate; flowers small, white

Dracocéphalum—Dragon-head
(Gr. drakon, dragon, kephale, head)
Leaves lanceolate to oblong, toothed; flowers light blue

Ocimum—Sweet Basil
(Gr. ocimon, an aromatic plant, basil)
Leaves ovate, toothed; flowers bluish-white

Coleus—Foliage-plant
(Gr. koleos, sheath, referring to the sheath-like leaf)
Leaves ovate, toothed, colored; flowers blue

Lavandula—Lavender
(Lat. lavandus, for washing, referring to its use in lavender water)
Leaves lance-linear; flowers blue

Physostégia—Dragon-head
(Gr. physa, bladder, stége, roof, referring to the fringed calyx)
1. Corolla pale purple or rose, 2-3 cm. long
2. Corolla purple, 1-1⅔ cm. long

Leonurus—Motherwort
(Gr. leόn, lion, oura, tail, in no evident application)
Leaves palmately cleft; calyx spiny; corolla pink to white

Koélia—Mountain Mint
(Named for a German botanist, Köél, at the 19th century)
Leaves lance-linear, sessile; flowers white in round heads

Hyssopus—Hyssop
(Gr. hyssópos, an aromatic plant)
Leaves lance-linear, entire; flowers blue

Origanum—Marjoram
(Gr. name of a plant resembling origanum)
1. Leaves broadly ovate; bracts colored, calyx of 5 equal lobes
2. Leaves oblong-ovate; bracts green; calyx 2 lipped
**ROSACEAE**

**Lopánthus—Giant Hyssop**  
(Gr. ιοφός, crest, anítnos, flower)  
1. Corolla yellowish; calyx nearly equalling corolla  
2. Corolla blue or purple  
   a. Leaves white beneath, anise scented  
   b. Leaves green beneath, not anise-scented

**Népeta—Catnip, Gill**  
(Lat. name of the catnip)  
1. Erect; leaves oblong; flowers whitish  
2. Creeping; leaves round; flowers blue  
   a. Leaves white beneath, anise-scented  
   b. Leaves green beneath, not anise-scented

**Saturéia—Savory**  
(Lat. name of the savory, Gr. satyrion)  
Leaves oblong-linear; flowers small, purplish

**Lámiium—Dead-nettle, Henbit**  
(Gr. lámia, throat, referring to the gaping corolla)  
1. Corolla red or purplish; upper leaves sessile  
2. Corolla white; leaves petioled

**Stáchys—Hedge Nettle**  
(Gr. stáchnys, spike, referring to the flower cluster)  
1. Leaves sessile or short-petioled  
2. Leaves distinctly petioled

**Rosales  Rose Order**

**Rosáceae—Rose Family**

Herbs or woody plants, with alternate leaves; sepals usually 5, sometimes 4 or apparently twice the number, petals usually 5, stamens 4-many, pistils separate, 1-many, or 2-5, united, fruit various; flower apocarpous or syncarpous, apopetalous, or apetalous, perigynous, regular.

1. Flowers large, 3-many cm. wide; shrubs with pinnate leaves  
   1. Potentilla  
   2. Fragaria  
2. Flowers small to medium, 1-3 cm. wide  
   a. Petals present  
      1. Geum  
      2. Potentilla  
   b. Petals absent; calyx lobes petal-like  
      1. Spiraea  
      2. Potentilla

**Kósa—Rose**  
(Lat. rosa, Gr. rhodon, rose)  
Leaflets thick, wrinkled; stem densely prickly  
   R. rugosa

**Géum—Avens**  
(Gr. geóma, taste, perhaps from the root)  
Stem leaves 3-parted; flowers panicled, red  
   G. coccineum

**Potentilla—Potentilla, Cinqfoil, Five-finger**  
(Lat. poténs, powerful, from reputed medical properties)  
1. Shrubs; leaflets 5-7, hairy; flowers 1½-3 cm. wide  
2. Herbs; flowers ½-1½ cm. wide  
   a. Leaflets 5, silvery white below; plants spreading  
   b. Leaflets 3, hairy on both sides, not silvery; erect

**Fragária—Strawberry**  
(Lat. fragum, strawberry)  
Leaves thick, hairy; flower stalks shorter than the leaves  
   F. virginiana
Spiráca—Spiraea, Meadowsweet. Bridal Wreath

1. Flowers white, in simple umbels
2. Flowers pink
   a. Flowers in umbels or corymbs
   b. Flowers in dense panicles

Potérium—Burnet

Leaves of 7-19 small leaflets; flowers green to purplish, in heads

Fabaceae—Pea Family

Herbs or woody plants, with alternate usually compound leaves, petals typically 5, and of three different forms, standard, wings and keel, not or some same more or less similar, stamens 5-many, pistil single, simple, fruit typically a legume sometimes achenes, flower apocarpous, apopetalous, hypogynous, irregular.

1. Leaves compound
   a. Leaflets digitate or apparently so, 2-15
      (1) Leaflets 2
      (2) Leaflets more than 3
      (3) Leaflets 3
         (a) Leaflets toothed
            x. Flowers in slender racemes
            y. Flowers in spikes or heads
               (x) Flowers blue or yellow
               (y) Flowers red or white
         (b) Leaflets entire
            x. Fruit a legume; mostly climbers
               (x) Calyx 5-toothed; cultivated
               (y) Calyx 4-toothed; native
            y. Fruit a loment or achene; erect herbs
               (x) Fruit a 1-seeded achene
               (y) Fruit a loment with 2-several seeds
   b. Leaflets pinnate, 4-many, or when fewer, tendril-bearing
      (1) Climbers or twiners, usually with tendrils
         (a) Leaves odd-pinnate; flowers brown-purple
         (b) Leaves even-pinnate, tendril-bearing as a rule
            x. Style bearded down one face
            y. Style bearded at tip only
      (2) Erect herbs; tendrils mere remnants when present
         (a) Leaflets 4; flowers yellow; cultivated
         (b) Leaflets 5 or more
            x. Leaves sensitive, closing and drooping at touch
            y. Leaves not sensitive to touch
               (x) Flowers pea-like
                  m. Leaves 2.14
                  n. Leaves 15-21
               (y) Flowers not pea-like
                  m. Flowers tiny, 4-6 mm. wide, in dense clusters
                     (m) Stamens 5
                     (n) Stamens 10
                  n. Flowers 2-3 cm. wide, yellow, single

2. Leaves simple; flowers yellow; shrubby

Lupinus—Lupine

Leaflets 13-15, lanceolate; flowers blue to white
Melilotus—Sweet Clover
(Gr. meli, honey, lotus, clover, from the fragrant leaves)
1. Flowers white; stem 1-3 m. tall; leaflets notched at tip
2. Flowers yellow; stem 1½-1 m. tall; leaflets blunt

Medicago—Alfalfa, Nonesuch
(Gr. medike, alfalfa, Lat. -ago, like)
1. Flowers blue; perennial
2. Flowers yellow; annual
   a. Leaves oval to rounded; pod smooth, black, 1-seeded
   b. Leaves cuneate, spotted; pod spiny, coiled, several seeded

Trifolium—Clover, Alsike
(Lat. tri-, three, folium, leaf)
1. Heads round or nearly so
   a. Flowers red, rarely white
   b. Flowers white to pinkish
      (1) Stems erect or ascending, 3-6 dm. high
      (2) Stems creeping, 1-2 dm. high
2. Heads oblong to cylindric
   a. Heads 3-6 cm. long; red corolla exceeding calyx
   b. Heads 1-2 cm. long; whitish corolla shorter than calyx

Phascolus—Bean
(Gr. phaselus, string-bean)
1. Flower clusters longer than the leaf; flowers usually red
2. Flower clusters shorter than the leaf; flowers not red
   a. Flowers greenish-white; pod broad; seeds flat
   b. Flowers white to purplish; pod narrow; seeds swollen
      (1) Twining
      (2) Bushy, not twining

Falcata—Wild Peanut
(Lat. falcatus, sickle-like, from the form of the keel)
Leaflets ovate; flowers purplish to white; pods both aerial and subterranean

Lespedeza—Bush Clover
(Named for Lespedez, a Spanish governor of Florida)
1. Flowers in heads, creamy or white; native
2. Flowers in racemes, red-purple; cultivated

Desmodium—Tick-Trefoil, Telegraph Plant
(Gr. desmos, bond, chain, from the loment)
Leaflets 3; end leaflet large, lateral ones small, moving up and down

Apios—Groundnut
(Gr. apios, pear, from shape of the tubers)
Flowers purple-brown, fragrant; stems from strings of starchy tubers

Lathyrus—Sweet Pea, Everlasting Pea
(Gr. lathyros, a kind of pulse)
1. Peduncles 2-4-flowered; flowers fragrant; annual
2. Peduncles many-flowered; flowers scentless; perennial
SAXIFRAGACEAE—CRASSULACEAE

Vicia—Vetch, Tare (Lat. vicia, vetch)
1. Climbing; leaflets 20-24; flowers blue, small, reflexed
2. Erect; flowers large, not reflexed
   a. Leaflets 10-14; flowers in 2's, purplish
   b. Leaflets 2-6; flowers clustered, white

Arachis—Peanut (Gr. arakos, a pea-like plant)
Leaflets 4, oblong; flowers yellow, the pod forming below ground

Mimosa—Sensitive Plant (Gr. mimosos, actor, from its sensitivity)
Leaves digitate on the common petiole, leaflets many; flowers rose, in heads

Coronilla—Purple Coronilla (Lat. corona, crown, -illa, small)
Leaflets 15-21; flowers pink to white, in head-like umbels

Petalostémon—Prairie Clover (Gr. petalon, petal, stemon, stamen, from the petals borne on the flower base)
Leaflets 5, linear; flowers in a short spike, rose-purple

Dalea—Dalea (Named for the English botanist Dale)
Leaflets 15-40, linear-oblong; flowers white to pink in an oblong spike

Cassia—Senna, Partridge Pea (Gr. cassia, a spice-bearing plant)
Leaflets 20-30, oblong; flower nearly regular, large, yellow

Genista—Genista, Whin (Celtic, meaning little bush)
Leaves lanceolate; flowers in racemes, small, yellow

Saxifragaceae—Saxifrage Family
Herbs with simple or compound leaves; sepals 4-5, sometimes united; petals 3 or more, usually 5.
Fruit an achene; flower typically syncarpous and apocarpous, hypogynous, regular.

1. Leaves simple
   a. Stamens 4-5
   b. Stamens 8-10

2. Leaves 3-ternate; flowers white, in panicles

Heuchera—Alum-root (Named for the German botanist Heucher)
Leaves rounded, lobed; flowers red

Saxifraga—Saxifrage (Lat. saxum, rock, frango, to break, from its grip)
Leaves heart-shaped, toothed, with long runners; flowers triangular, 3 petals
   small, rose, 2 large, white

Astilbe—Astilbe (Gr. a-sti-fbe, without, stipe, stem. bright-speed)
Leaflets oblong to lance-ovate; flowers small in a dense panicle

Crassulaceae—Stonecrop Family
Herbs with fleshy leaves; sepals 3-5, petals 3-5, or more, usually 5, in some annuals 3 or more; fruit an achenes, hypogynous, regular.

1. Petals separate
2. Petals united at the very base
   a. Flower in 5's
   b. Flower in 4's

Sédum—Stonecrop
   (Lat. sedo, to sit, from the habit of growing on walls and rocks)
1. Creeping; leaves 4-6 mm. long; flowers yellow
2. Erect; leaves 2-5 cm. long; flowers pink to white

Cotyledon—Cotyledon
   (Gr. kotyledon, 'cup, from the form of the corolla)
Leaves basal, wedge-shaped, glaucous; flowers red

Bryophyllum—Bryophyllum
   (Gr. bryon, bud, phyllon, leaf, from the buds which form on the leaf)
Leaves ovate, simple or ternate; flowers large, greenish, hanging

Hamamelidaceae—Witch-Hazel Family
Shrubs or trees, with simple alternate leaves; sepals 4, petals 4, stamens 8, 4 more or less imperfect, ovary 2-celled, styles 2, fruit a capsule; flower syncarpous, apopetalous, hypogynous, regular.

Hamamélis—Witch Hazel
   (Gr. hamamelis, a kind of tree)
Tall shrub with obovate leaves; flowers yellow, appearing in autumn just before leaf-fall

Sapindales Maple Order
Sapindáceae—Soapberry Family

Cardiospermum—Balloon-Vine, Heart-Seed
   (Gr. kardia, heart, sperma, seed, from the heart-shaped seed scale)
Leaves 2-ternate, alternate; flower clusters with hook-like tendrils; flowers white; seed with a heart-shaped scale

Lythrales Loosestrife Order
Lythráceae—Loosestrife Family

Lythrum—Loosestrife
   (Gr. lythron, blood, from the color)
Leaves lanceolate; flowers with 6-7 pink petals

Cuphea—Cigar Plant
   (Gr. kuphos, hump, from the spur)
Leaves lance-ovate, glossy; flowers bright red

Onagráceae—Evening-Primrose Family
Herbs or shrubs with simple leaves; sepals 2-6, united and grown to the ovary, petals 2-6, mostly 4, stamens 2-12, mostly 8, ovary usually 2-4 celled, stigma one, often 4-lobed; fruit a capsule or berry; flower syncarpous, apopetalous, epigynous, regular, rarely irregular.
1. Flowers regular
   a. Herbs; calyx not brightly colored
      (1) Seeds hairy; flowers rose purple in a long spike
      (2) Seeds not hairy; flowers yellow, white or rosy
   b. Shrubs; calyx bright-colored, spreading
2. Flowers irregular; petals apparently 5; stamen 1

Chamaenerium—Fireweed
(Gr. chamae—ground, menion, root bay)
Leaves lanceolate, entire; flowers 2.3 cm. wide

Onopordum—Evening Primrose, Goatsbeard
(Gr. oinothera, a plant which grows by fountains)
1. Flowers yellow
   a. Capsule winged
      (1) Plant low, almost trailing; leaves petioled
      (2) Plant erect, 3-10 dm. high; leaves sessile
   b. Capsule 4-angled, not winged
      (1) Petals about 2 cm. long; native weed
      (2) Petals 3-7 cm. long; cultivated
2. Flowers white to pink or red
   a. Stemless
      (1) Blooming by day
      (2) Blooming at nightfall
   b. Stemmed
      (1) Flowers white; capsule winged
      (2) Flowers rose to purple

Fuchsia—Fuchsia
(Named for the German botanist Fuchs)
1. Flowers hanging
   a. Tube of calyx shorter than lobes
   b. Tube of calyx 2.5 times longer than the lobes
2. Flowers erect
   a. Erect shrub; flowers in a panicle
   b. Trailing; flowers solitary

Lopezia—Lopezia
(Named for an early Spanish naturalist, Lopez)
Leaves lance-oblong to ovate; flowers rose, 5-6 mm. wide

Cactales—Cactus Order

Cucurbitáceae—Gourd Family

Herbs, usually with tendrils and alternate lobed leaves; sepals 5, united with each other and with the ovary, petals usually 5, united, stamens usually 3, ovary 1-3-lobed, stigma lobes 2-3; fruit a capsule or achene; flower syncarpous, monocious or dioecious; syncarp, syncarpous; flower regular.
1. Flowers large, 3-15 cm, mostly yellow or yellowish
   a. Staminate flowers solitary
      (1) Flowers white
      (2) Flowers yellow
         (a) Flowers bright yellow, bell shaped; stigma lobes 6
         (b) Flowers pale yellow, shallow; stigma lobes 3
   b. Staminate flowers clustered
      (1) Tendrils present; fruit 3.6 dm. long
      (2) Tendrils lacking; fruit 3.5 cm. long, bristly, spiny
2. Flowers small, 0.2-2 cm., white or greenish
   a. Leaves compound; leaflets 3-7
b. Leaves simple, lobed
   (1) Ovary and fruit 1-seeded
   (2) Ovary and fruit several-seeded

Lagenária—Gourd, Calabash
(Lat. lagena, bottle, from the fruit)
Leaves rounded; the fruit club- or flask-shaped

Cucúrbita—Pumpkin, Squash
(Lat. cucuba, squash)
1. Leaves lobed; fruit stalks strongly ridged
2. Leaves not lobed; fruit stalks scarcely ridged

Cucumis—Cucumber, Muskmelon
(Lat. cucumis, cucumber)
1. Leaves lobed
2. Leaves rounded, not lobed

Luffa—Dishcloth Gourd, Vegetable Sponge
(The Arabic name)
Leaves round, many-lobed; flowers yellowish

Ecballium—Squirting Cucumber
(Gr. ekballo, to cast out, from the fruit)
Leaves ovate, heart-shaped at base; flowers yellow

Cyclanthéra—Cyclanthera
(Gr. kyklos, circle, anthera, anther)
Leaflets oval, toothed or lobed; fruit ovoid, spiny

Sicyos—Star Cucumber
(Gr. sikyos, cucumber)
Leaves with shallow lobes; fruits yellowish, spiny, clustered

Micrampelis—Wild Cucumber, Mock Apple
(Gr. mikros, small, ampelis, vine, from the climbing habit)
Leaves deeply 3-7-lobed; flowers fragrant; fruit bladdery, spiny

Begoniáceae—Begonia Family
Herbs with alternate simple leaves; sepals 2, petals 2-5, stamens many, ovary 2-4-celled, styles 2-4, fruit a triangular capsule; flower syncarpous, monoeocious, apetalous, epigynous, often irregular.

Begónia—Begonia, Elephant’s Ear
(Named for Begon, a governor of Santo Domingo)
The species and varieties are numerous and closely related; see Bailey’s Cyclopaedia of Horticulture, 1:143.

Apiáceae—Carrot Family
Herbs, with alternate mostly compound leaves; sepals united and completely fused with the ovary, the calyx usually appearing absent as a consequence, petals 5, stamens 5, ovary 2-celled, styles 2, fruit of twin achenes; flower syncarpous, apetalous, epigynous, usually regular, the flowers typically in umbels.
1. Flowers in umbels; leaves not prickly
   a. Flowers white or cream-colored
      (1) Leaves simple, lobed, 2-4 dm. wide; umbels 1-2 dm. wide
      (2) Leaves compound
         (a) Fruits prickly
         (b) Fruits smooth
      Heracleum
      Daucus
      Apium

Sicyos
Micrampelis
L. vulgäris
C. pépo: pumpkin
C. máxima: squash
C. sativa: cucumber
C. mélo: melon
L. aegyptiaca
C. dissécta
S. angulátus

BEGONIACEAE—APIACEAE
b. Flowers yellow, yellowish or greenish
   (1) Flowers yellow
      (a) Leaf divisions thread-like
      (b) Leaf divisions broad
   (2) Flowers yellowish or greenish
      (a) Leaf divisions thread-like
      (b) Leaf divisions wedge-shaped, lobed

2. Flowers in heads

**Héracleum—Cow Parsnip**
(Gr. *Heracleion*, of Hercules, from the great size)
Tall, 1-3 m. high; leaves very hairy

**Daucus—Carrot**
(Gr. *daukos*, carrot)
Leaves finely cut; fruiting umbel cup-shaped

**Apium—Celery**
(Lat. *apium*, parsley)
Leaves 3-7-pinnately divided; umbels small; in one variety, the root is turnip-like

**Foeniculum—Fennel**
(Lat. *foenum*, hay)
Smooth, 1-2 m. high; sweet aromatic

**Pastináca—Parsnip**
(Lat. *pastus*, food)
Leaflets coarse, toothed or lobed; poisonous when wild

**Anéthum—Dill**
(Gr. *anethon*, anise, dill)
Stem smooth, about 1 m. high; petals falling quickly

**Cárum—Parsley**
(Gr. *karon*, parsley, caraway)
Flowers greenish; cultivated

**Eryngium—Sea Holly**
(Gr. *éryngion*, name of a plant)
1. Bracts below the head 7-8
2. Bracts below the head 10-20

**Rubiales** 
**Madder Order**

**Rubiaceae—Madder Family**

Herbs or shrubs with opposite or whorled leaves; sepals united, completely united with the ovary, or with 4-5 free lobes, petals 4-5 or more united, stamens 4-5, ovary 2-celled, ovules 2. Fruit a 2-seeded capsule; flower syncarpous, sympetalous, epigynous, regular

1. Leaves whorled; flowers tiny, 4-parted
2. Leaves opposite; flowers large
   a. Flowers solitary, fragrant; corolla 5-9-lobed
   b. Flowers clustered; corolla 4-lobed

**Gálium—Bedstraw**
(Gr. *galion*, bed-straw, gaia, milk, from the curdling effect of cows' milk)
Leaves lance-linear, in 4's; flowers white, in a panicle

**Gardénia—Gardenia, Cape Jasmine**
(Named for Dr. Garden, an American correspondent of Linnaeus)
Leaves oblong, bright green; flowers large, white, often yellow

**Bonvárda—Bonvardia**
(Named for Bonvárda, a French botanist)
Leaves opposite, ovate-acuminate; flowers white
CAPRIFOLOIACEAE—DIPSACEAE

**Caprifoliaceae—Honeysuckle Family**

Shrubs or vines, rarely herbs, with mostly simple opposite leaves; sepals united, more or less completely fused with the ovary, petals 5, united, ovary 2-5 celled, stigma 1-3, fruit a capsule or berry; flower syncarpous, sympetalous, epigynous, regular or irregular.

**Lonicera—Honeysuckle**
(Named for the German herbalist, Lonitor)
Leaves oblong, united in pairs above; flowers trumpet-like, red or yellow;

*I. sempervirens*: trumpet

**Campanulaceae—Bluebell Order**

**Campanulaceae—Bluebell Family**

Herbs with alternate leaves and milky juice; sepals 5, united, petals 5, united, stamens 5, ovary 2-5 celled, stigmas 2-5, fruit a capsule; flower syncarpous, sympetalous, epigynous, regular or irregular.

1. Flowers regular
   a. Flowers bell-shaped
   b. Flowers cup- or saucer-shaped
2. Flowers irregular, the tube slit

**Lobelia—Lobelia**
(Named for the herbalist Lobelius)
Stems tufted, 4-6 in. high; leaves lanceolate; flowers blue

**Valerianaceae—Valerian Family**

1. Stigmas 3; calyx without appendages
   a. Native; flowers nodding; leaves linear
   b. Cultivated
      (1) Flowers solitary; leaves ovoid, petioled
      (2) Flowers in a raceme; leaves lance-ovate, sessile
2. Stigmas 5; calyx with leafy appendages

**Dipsaeceae—Teasel Family**

Herbs with opposite leaves; calyx tube forming a border above the ovary, corolla 4-5 lobed, stamens 4, ovary 1-celled, stigma 1, fruit an achene; flower syncarpous, sympetalous, epigynous, regular or irregular.
1. Flowers in an oblong prickly head
2. Flowers in a flat head, without prickles

**Dipsacus—Teasel**

*Gr. dipsakos, thready*

Leaves lance-oblong; flowers bluish

**Scabiosa—Sweet Scabious**

*flat. scabies, itch, from its reputed medicinal properties*

1. Flowers purple, red or white
2. Flowers light blue

**Asteraceae—Aster Family**

Herbs with flowers in dense involucrate heads; sepals (pappus) 5, in tube or round, scales, etc., or wanting, petals 5, stamens 5 or 0, united by their anthers; corolla tubular, hooked, 2-cleft, stigmas 2; flower syncarpous, sympetalous, regular or irregular, epigynous. The flowers of the head may be all tube-shaped, or the outer row or so may be ribbonshaped, or all may be ribbon-shaped. The receptacle is flat or more or less conical, naked (i.e., bearing none of the flowers) or bearing scales among the flowers. The head is surrounded by 1 or more rows of oblong or bristly scales.

**Key to the Genera**

1. Flowers tube-shaped, no ray or ribbon-like flowers present

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**Tubular heads of Lactuca long section and tube-shaped flowers**

a. Flowers bright-colored; heads conspicuous
   (1) Leaves or involucral spiny
      (a) Leaves spiny
         x. Pappus of plummy bristles
            (x) Involucral scales thick and fleshy, exserted
            (y) Involucral scales not thick and fleshy, exserted
         y. Pappus none
      (b) Involucral spiny with hooked spines
    (2) Leaf and involucral without spines
       (a) Heads in long spikes
(b) Heads in flat-topped clusters, or single
  x. Involucral scales dry and papery, yellow to white or red
  (x) Leaves white-cottony, extending along the stem as wings
  (y) Leaves not white-cottony, stem not winged
  y. Involucral scales not papery, usually green
  (x) Heads white, yellowish or purplish; native
     m. Heads white, pink or purplish
     n. Heads yellowish
  (y) Heads deep purple or blue
     m. Heads deep purple; native
     n. Heads blue, rarely white; cultivated

b. Flowers greenish; heads inconspicuous
   (1) Leaves broad, ovate, not deeply lobed
      (a) Involucre forming a hooked bur
      (b) Involucre not hooked
   (2) Leaves narrow or deeply lobed
      (a) Leaves strong-scented
      x. Pappus a short crown

Ammobium
Helichrysum
Eupatorium
Kuhnia
Vernonia
Ageratum
Xanthium
Iva
Tanacetum

Radiate head of Cosmos with long section, ray flower and tubular or disk flower.
y. Pappus none
   (x) Receptacle smooth
   (y) Receptacle chaffy
(b) Leaves not strong-scented
  x. Pappus a crown, or none
  y. Pappus of two or more barbed awns

2. Flowers of two kinds, tubular and ray, or all ray in doubled form
   a. Heads with chaff, i.e., each flower with a scale
      (1) Ray flowers trumpet-shaped
      (2) Ray flowers flat, ribbon- or strap-shaped
         (a) Rays white
             x. Leaves pinnately dissected, strong-scented
             y. Leaves not dissected or strong-scented
         (b) Rays yellow or purple
             x. Disk globose to cylindrical
                (x) Chaff stout or spiny; rays white, red or purple
                   m. Chaff equaling the disk flowers
                   n. Chaff much longer than the disk flowers
                (y) Chaff soft; rays yellow
                   m. Disk globose; achenes 4-angled
                   n. Disk oblong to cylindrical; achenes wing-margined
      y. Disk flat or slightly convex
         (x) Bracts of the involucre united, at least one series
            m. Chaff broad; achenes flat, winged-margined
            n. Chaff linear or long-pointed; achenes not flat or winged
               (m) Rays white to pink or red
               (n) Rays yellow to maroon
               r. Pappus teeth barbed upward or downward
                  s. Pappus teeth smooth or lacking
         (y) Bracts not united, or somewhat so at base
            m. Achenes broad, winged
               (m) Rays in 2-3 rows; disk flowers sterile
               (n) Rays in 1 row; disk flowers fertile
            n. Achenes not winged
               (m) Rays neutral, deciduous
               r. Pappus of two triangular awns; achenes 4-angled
                  s. Pappus of two awns and small scales; achenes flat
                     (n) Rays pistillate, persistent; pappus crown-like
    b. Heads without chaff; the receptacle slightly bristly in one or two cases
      (1) Pappus of capillary bristles
         (a) Rays yellow
            x. Heads small, 2-8 mm.
               y. Heads larger, 1-3 cm.
         (b) Rays white to blue or purple
            x. Heads single, on short scapes
               y. Heads several-many
               (x) Rays narrow and many; bracts in 1-3 rows
               (y) Rays broader and fewer; bracts in 3-5 rows
                  m. Pappus double; cultivated annual
                  n. Pappus single; native
                     (m) Heads in a panicle
                     (n) Heads in a cymose cluster
      (2) Pappus none, or of 5-12 scales or bristles
         (a) Pappus none
            x. Achenes of disk small and aborted
y. Achenes of disk normal
   (x) Achenes flat
   (y) Achenes 4-angled
(b) Pappus present
x. Rays white
   (x) Pappus of bristles and awns
   (y) Pappus a short-toothed crown
      m. Receptacle nearly flat
      n. Receptacle conic or ovoid
y. Rays yellow or orange
   (x) Bracts united into a deep cup
      m. Leaves finely cut; heads very small
      n. Leaves coarsely cut; heads large
   (y) Bracts not united
      m. Bracts squarrose-spreading
      n. Bracts not squarrose-spreading
      (m) Leaves typically lobed; achenes densely hairy
      (n) Leaves not lobed; achenes smooth or nearly so

3. Flowers strap-shaped, all alike

Ligulate head of dandelion, Taraxacum: showing the habit of the plant, long section of the head, a ligulate or strap-shaped flower, and a parachute fruit.
ASTERACEAE

a. Heads on a scape
b. Heads on a leafy stem
   (1) Pappus branches united by hairs
   (2) Pappus branches not so united
      (a) Pappus capillary
         x. Achenes flattened
         (x) Achenes blunt
         (y) Achenes beaked
      y. Achenes cylindric or angled
         (x) Flowers yellow or orange
         m. Pappus brown or brownish
         n. Pappus white
      (y) Flowers white or cream-colored
     (b) Pappus of blunt scales; flowers blue

Cynara—Artichoke, Cardoon
   (Gr. kinara, artichoke)
   1. Leaves woolly below; head smooth
   2. Leaves smooth; heads prickly

Carduus—Thistle
   (Lat. carduus, thistle)
   1. Heads less than 3 cm.
   2. Heads more than 3 cm.
      a. Lower surface of leaf brown hairy
      b. Lower surface of leaf densely white woolly
         (1) Leaves usually lobed or dentate
         (2) Leaves typically pinnatifid
            (a) Leaves white woolly above
            (b) Leaves green above

Carthamus—Safflower, False Saffron
   (Ar. qartama, paint, because of the yellow dye it yields)
   Leaves oblong-ovate; flowers orange

Arctium—Burdock
   (Gr. arktion, a plant, from arktos, bear, referring to the bur)
   A biennial weed with large ovate leaves

Laciniaria—Blazing Star
   (Lat. lacinia, tear, fringe, referring to the heads)
   1. Bracts pointed
      a. Heads 15-60-flowered
         (1) Tips of bracts rigid and spreading
         (2) Tips closely appressed
      b. Heads 3-6-flowered
         (1) Heads crowded in a long spike; bract tips spreading
         (2) Heads loose in a short spike; bracts appressed
   2. Bracts obtuse, not pointed
      a. Heads 10.25 mm., 15-45-flowered
      b. Heads 4.8 mm., 5-15-flowered

Ammophium—Everlasting
   (Gr. ammos, sand; bios, living)
   Leaves lanceolate, cottony, extending down the stem as wings on heads while
**ASTERACEAE**

**Helichrysum—Everlasting**  
(Gr. helios, sun, chrysoς, gold, referring to the golden heads of some varieties)  
Leaves lance-oblong, entire; scales papery, yellow, white or pink  
*H. bracteatum*

**Eupatorium—Eupatorium**  
(Gr. eupatorion, a kind of medicinal plant)  
1. Leaves petioled  
   a. Leaves in whorls of 3-6  
      (1) Leaves hairy and wrinkled  
      (2) Leaves smooth  
   b. Leaves opposite  
2. Leaves sessile, opposite as a rule  
   a. Leaves narrowed at base  
   b. Leaves clasping, perfolliate

**Kühnia—Kühnia**  
(Named for Dr. Kuhn, a botanical collector of the 18th century)  
Leaves lanceolate; heads cream-colored  
*K. eupatorioides*

**Vernonia—Ironweed**  
(Named for Vernon, an English botanist)  
1. Bracts with long spreading awns  
2. Bracts merely acute  
*A. mexicana*

**Ageratum—Ageratum**  
(Gr. ageraton, everlasting)  
Leaves ovate or cordate; flowers blue, rarely white  
*A. mexicana*

**Xanthium—Cocklebur**  
(Gr. name of a plant yielding a yellow dye; xanthos, yellow)  
Leaves ovate; involucre with hooked spines  
*X. canadensis*

**Iva—Marsh Elder**  
(Of doubtful meaning)  
Leaves ovate, white below; involucre smooth  
*I. xanthifolia*

**Tanacetum—Tansy**  
(From tansy, everlasting, from Gr. athanasia, immortality)  
Leaves twice pinnatifid, strong-scented; flowers greenish yellow  
*T. vulgare*

**Artemisia—Wormwood**  
(From Artemisia, wife of Mausolus)  
1. Leaves entire or lobed at tip  
   a. Leaves glabrous, linear  
   b. Leaves densely hairy or woolly  
      (1) Leaves linear  
      (2) Leaves oblong to lanceolate  
2. Leaves divided  
   a. Heads erect  
      (1) Leaves typically hairy; perennial  
      (2) Leaves glabrous; annual or biennial  
   b. Heads drooping  
      (1) Leaves silvery  
         (a) Leaf segments linear  
         (b) Leaf segments broad, ovoid  
      (2) Leaves green

**Ambrosia—Ragweed, Kinghead**  
(Gr. name of a plant)  
1. Leaves palmately divided; tall  
*A. trifida*
2. Leaves pinnately divided
   a. Annual; fertile heads clustered; involucre spiny
   b. Perennial; fertile heads solitary; involucre naked or warty

Bidens—Bidens, Beggar-ticks
   (Lat. bi-, two, dens, tooth, from the awned achenes)

1. Heads yellow
   a. Heads nodding after flowering
   b. Heads always erect
      (1) Rays conspicuous; heads 4-6 cm. wide
      (2) Rays small or wanting; heads 1-4 cm. wide
         (a) Leaves not divided
            x. Outer bracts 2-4 times longer than head
            y. Outer bracts not longer than head
         (b) Leaves pinnately 3-5-divided

2. Heads red

Centauréa—Bachelor’s Button, Bluebottle
   (Gr. name of the centaury)
ANTHEMIS—Chamomile, Mayweed
(Gr. anthemis, flower, perhaps referring to the many flowers)
1. Rays white
   a. Rays pistillate
      (1) Chaff acute or pointed
      (2) Chaff blunt or rounded
   b. Rays without pistils
2. Rays yellow

GALINSÓGA—Galinsoga
(Named for Galinsoga, a Spanish botanist)
Low weed, with inconspicuous rays and broad leaves

ZINNIA—Zinnia
(Named for Zinn, a German botanist)
Cultivated annuals, generally with double or partly double flower heads of various shades of dull yellow, orange, red and purple

ECHINÁCEA—Purple Coneflower
(Gr. echinos, hedgehog, referring to the bristly head)
1. Leaves dentate; rays 15-20, dull purple
2. Leaves entire; rays 12-15, rose-purple

RUDBECKIA—Coneflower
(Named for the Swedish botanists, Rudbeck)
1. Heads single
   a. Leaves entire or nearly so; disk purple-brown
   b. Leaves deeply cut, except the upper; disk yellow
2. Heads doubled

RATIBIDA—Coneflower
(Of doubtful meaning)
1. Disk cylindric, yellow
2. Disk oblong, brown

DÁHLIA—Dahlia
(Named for Dahl, a Swedish botanist)
Roots tuberous, fascicled; leaves pinnate; flowers white to red

CÓSMOS—Cosmos
(Gr. kosmos, order, world)
Leaves twice pinnatifid; flowers white to red, rarely yellow

COREÓPSIS—Coreopsis, Tickseed
(Gr. koris, bug, opsis, likeness)
1. Leaves 2-pinnate; rays often maroon
2. Leaves 1-pinnate or simple
   a. Annual; leaves or leaflets oval
   b. Perennial; leaves or leaflets lanceolate
      (1) Leaves with 3, sometimes 5, leaflets
      (2) Leaves simple
3. Leaves palmately 3-lobed

SILPHIUM—Silphium
(Gr. name of a resinous plant)
1. Leaves simple, united at base into a cup
2. Leaves very large, deeply pinnatifid

VERBÉSINA
(Of doubtful meaning)
Tall cultivated perennial with rough lanceolate leaves and yellow flowers; disk flowers large, campanulate
ASTERACEAE

Helianthus—Sunflower

(Gr. helios, sun, anthos, flower, referring to the golden yellow)

1. Disk brown or purplish
   a. Leaves opposite, thick, lanceolate; perennial
   b. Leaves mostly alternate, thinner, ovate; annual; heads either double
      in the cultivated forms

2. Disk yellow
   a. Leaves long, mostly lance-shaped
      (1) Leaves petioled; stem glaucous
      (2) Leaves sessile
         (a) Stem smooth
         (b) Stem rough
            x. Leaves mostly entire, usually folded
            y. Leaves toothed, flat
   b. Leaves ovoid
      (1) Stem smooth or soft hairy
      (2) Stem rough or bristly hairy

Helianthélla—Alpine Sunflower

(A Greek-Latin hybrid, meaning little sunflower)

Leaves opposite, very long; heads 5-10 cm. wide, yellow

Heliópsis—Oxeye

(Gr. helios, sun, opsis, look, from the yellow rays)

Leaves ovate; rays pistillate, yellow

Solidago—Golden-rod

(Lat. solidus, whole, from its reputed healing properties)

1. Heads in a flat-topped cluster
   a. Rays fewer than the disk flowers
      (1) Leaves ovate to oblong, rough
      (2) Leaves long, lanceolate, smooth
   b. Rays more numerous than the disk flowers; leaves linear

2. Heads in a terminal much-branched conical cluster
   a. Stem and leaves glabrous or nearly so
      (1) Heads in a compact rounded thyrsce
      (2) Heads in one-sided spreading clusters
         (a) Leaves 3-nerved
            x. Tall, 1-2 m. high; along streams and in meadows
            y. Low, ½ m. high; on prairies and plains
         (b) Leaves without a strong pair of lateral veins
            x. Racemes few; heads 4-6 mm. high
            y. Racemes many; heads 3-4 mm. high
   b. Stems and leaves hairy
      (1) Leaves lanceolate, serrate, long pointed
      (2) Leaves oblanceolate to broadly spatulate
         (a) Leaves green, rough on both sides
         (b) Leaves gray or ashy
            x. Leaves faintly 3-nerved
            y. Leaves strongly 3-nerved

3. Heads mostly in axillary clusters
   a. Rays white; leaves hairy, blunt
   b. Rays yellow; leaves smooth, long-pointed

Chrysópsis—Chrysópsis

(Gr. chrysos, gold, opsis, look, from the yellow)

Leaves hairy, oblong; heads yellow
ASTERACEAE

Béllis—English Daisy
   (Lat. bellis, daisy, from bellus, beautiful)
Leaves basal, spatulate; heads usually double, white to pink  
   B. perennis

Erigeron—Daisy
   (Gr. eri-, very, geron, old man, referring to the hoary heads)
1. Heads 2-3 mm. wide; rays inconspicuous  
   E. canadensis
2. Heads 5-20 mm. wide; rays conspicuous
   a. Rays 40-70  
   b. Rays 100-150  
   E. ánnuus  
   E. philadelphicus

Callistephus—Garden Aster
   (Gr. kalli-, beautiful, stephos, wreath)
Double asters of the garden
   C. chinénsis

Áster—Aster
   (Gr. aster, star, in reference to the head)
1. Lower leaves heart-shaped, petioled
   a. Rays white, violet or pink
      (1) Rays white, 6-10  
      (2) Rays violet, 5-16
   b. Rays blue to purple
      (1) Leaves entire
      (2) Leaves toothed
         (a) Stem smooth
            x. Heads 4-6 mm. high; leaves hairy
            y. Heads 6-10 mm. high; leaves smooth
         (b) Stem finely hairy
   A. divaricádus
   A. macrophylus
   A. azúreus
   A. cordifólius
   A. sagittifólius
   A. Drummondii
2. Lower leaves not petioled and heart-shaped
   a. Stem leaves clasping by a heart-shaped base
      (1) Stem smooth or nearly so
         (a) Leaves entire
            x. Leaves oblong to ovate
            y. Leaves linear or lance-linear
               (x) Bracts of the involucre in 3-4 rows
               (y) Bracts of the involucre in 1-2 rows
         (b) Leaves toothed
      (2) Stem rough or hairy
         (a) Leaves entire
            x. Stem rough
            y. Stem hairy
         (b) Leaves toothed
   A. lévis
   A. júnceus
   A. longifólius
   A. levis
   A. pátens
   A. novae-ángliae
   A. punicus
   A. sericeus
   A. ptarmacoides
   A. multifórus
   A. ericoides
   A. oblongifólius
   A. Tradescánti
   A. salicifólius
   (incl. A. paniculátus)

Doellingera—Doellingera
   (Named for Doellinger, a botanical explorer)
Leaves lanceolate; rays small, white
   D. umbellátá
ASTERACEAE

Achilléa—Yarrow, Milfoil
(Named for Achilles)

1. Heads white
   a. Heads single; leaves finely dissected
   b. Heads double; leaves simple
2. Heads yellow

Chrysánthemum—Chrysanthemum, Daisy
(Gr. chrysos, gold, anthemon, flower)

1. Heads large, few or solitary
   a. Heads with a single row of white rays
      (1) Leaves spatulate
         (a) Weed with narrow, deeply cut leaves
         (b) Cultivated plant with thick crenate leaves
      (2) Leaves lance-ovate, toothed; cultivated
   b. Heads variously colored, usually with many rows of rays
      (1) The various showy “chrysanthemums” are hybrids of C. inulíum
          and C. morífolium
      (2) Heads rose or pink, single garden form
2. Heads small, numerous, often double; leaves deeply cut pinnatifid

Matricáriá—Chamomile
(From its use in medicine; cfr. Lat. matrix)

Annual, with smooth aromatic deeply cut leaves and small white heads, single
   or double

Bóltonia—Boltonia
(Named for Bolton, an English botanist of the 18th century)

Leaves entire; rays white to purplish

Tagétes—Marigold
(Gr. chrysos, gold, anthemon, flower)

Leaves pinnate; head single or double; rays yellow or orange

Grindélia—Grindelia
(Named for Grindel, a Russian botanist)

Leaves simple, toothed; heads yellow, sticky

Helénium—Oxeye, Sneezeweed
(Gr. helénon, name of a plant)

1. Stems winged; heads 2-4 cm. wide
2. Stems not winged; heads 6-8 cm. wide

Gaillárdia—Gaillardia
(Named for the botanist, Gaillard)

1. Annual; rays brown-purple, yellow at tip
2. Perennial; rays yellow, or brown-purple at base

Caléndula—Marigold
(Lat. kalendae, months, referring to its persistent blooming)

Leaves oblong, sessile; heads single or double

Taráxacum—Dandelion
(Gr. tarassó, to disturb)

Leaves lobed or dissected; heads yellow

Dysódia—Dysodia
(Gr. dysodes, ill-smelling; referring to the strongly-scented plant)

Leaves deeply pinnatifid; heads small, yellow

Tragopógón—Salsify, Oyster plant, Goatsbeard
(Gr. tragos, goat, pogan, beard, referring to the beard)

1. Heads yellow; bracts not longer than the rays
2. Heads purple; bracts much longer than rays
ASTERACEAE

Sonchus—Sow-thistle
(Gr. name of the sow-thistle)
1. Perennial; heads 2-3 cm. wide
   S. arvensis
2. Annual
   a. Achenes wrinkled crosswise; ears of leaves acute
   S. oleráceus
   b. Achenes 3-striate on each side; ears rounded
   S. ásper

Lactúca—Lettuce
(Lat. lactúca, lettuce, from lac, milk, referring to the milky juice)
1. Pappus white
   a. Flowers blue
   L. pulchélía
   b. Flowers yellow or cream-colored
   (1) Cultivated
   L. satíva
   (2) Native
   a. Leaves twisted into a vertical position, midrib spiny
   L. scariósa
   b. Leaves normal, pinnatifid; margin spiny
   L. ludoviciana
   L. spédiá

Hierácium— Hawkweed
(Gr. hieráciurn, hawkweed, from hierax, hawk)
1. Leaves and stem with hairs 2-3 cm. long; achene long-beaked
   Hieráciurn longípilm
2. Leaves and stem with short stout hairs; achenes truncate
   Hieráciurn scdrbrum

Crépis—Hawksbeard
(Gr. krepis, boot, base, perhaps from the basal rosette)
Leaves lanceolate, pinnatifid; heads yellow
Crépis tectórum

Nábalus—Nabalus
(Latinized form of the Indian name)
1. Pappus dark brown
   Nabalus díbus
2. Pappus straw-color
   a. Involucre hairy
   Nabalus ásper
   b. Involucre smooth
   Nabalus alissimus

Cichórium—Chicory
(Latinized form of the Arabic name)
Leaves lobed; heads blue
Cichórium intýbus

Monocotyledons

Alismales   Arrowhead Order
Alismáceae—Arrow-head Family
Aquatic and marsh herbs, with fibrous roots, flowers in clusters; sepals 3, not petal-like, petals 3, stamens 6-many, pistils several-many; flowers apocarpous, apopetalous, hypogynous, regular.
1. Each pistil 1-seeded
   a. Flowers perfect; pistils in a ring
   Alísmá
   b. Pistillate and staminate flowers separate; pistils covering a convex receptacle
   Sagíttária
2. Each pistil many-seeded
   a. Stamens 9, fertile
   Butomus
   b. Numerous fertile and sterile stamens
   Hydrocleis

Alísmá—Water-plantain
(Gr. alísmá, a water plant)
Native plant with ovate leaves, and many small flowers in an upright panicle A. plantago-aquática

Sagíttária—Arrow-head
(Lat. sagíitta, arrow, from the shape of the leaves)
Several species, mostly blooming in midsummer
1. Leaves arrow-shaped; pistillate flowers obviously stalked
   Sagíttária latífólía
2. Leaves linear, ovate, or rarely arrow-shaped; pistillate flowers not stalked
   Sagíttária rigída
HYDROCHARITACEAE—ARACEAE

Butinum
(Gr. bous, ox, tomus, cut. from the many flowers)
A single European species sometimes cultivated.

Hydrocleis—Water penny
(Gr. hydro-, water, kleis, key)
A single tropical species: often cultivated; plant floating, flowers large, yellow

Hydronema

Hydronema is a single European species sometimes cultivated.

Hydrocharitaceae—Water-weed Family

Hydrocharitaceae—Water-weed Order

3-9-parted, ovary 1-9-celled; flower syncarpous, apopetalous, apetalous, or regular, usually dioecious.
1. Stems elongated, branched; leaves small, in whorls of 3; flowers with a thread-like tube
2. Stems undeveloped; leaves long, grass-like

Hydrales Water Weed Order

Philotria—Water-weed
(Gr. philos, loving, tria, three)
Small native submerged aquatic, often cultivated in aquaria; pistillate flowers with a long, thread-like perianth-tube

Vallisneria—Eel-grass
(Named for Vallisneri, an Italian botanist)
Submerged grass-like aquatic; pistillate flowers on long coiled stalks

Arales Arum Order

Araceae—Arum Family

Herbs, or somewhat shrubby, with flowers in a dense fleshy spike (spadix) which is subtended or surrounded by a spathe; sepals 4-6 or 0, petals 0, stamens 4-7, ovary 1-9-celled; flowers syncar- pous, apetalous, ovary sunk in the fleshy axis. The autumn and winter flowering ones are all cultivated greenhouse plants.
1. Spadix covered with flowers to the tip
a. Stem thick, elongated; leaves perforated
b. Stem not appearing above ground; spathe expanded, white
2. End of spadix without flowers
a. Spathe hood-like; leaves simple, entire
b. Spathe expanded, ill-smelling, preceding the large compound leaf

Monstera
(Of uncertain origin)
Half-climbing plant with aerial roots and edible fruit

Zantedeschia—Calla
(Named for Zantedesch, an Italian botanist)
Commonly cultivated plant with arrow-shaped leaves and large white spadix on long stalks

Arum
(The Greek name)
Flowers on lower part of spadix, the staminate and pistillate flowers separated by fringe-like sterile flowers

Amorphophallus
Flowers on lower part of spadix; spathe brownish, ill-smelling
COMMELINACEAE—LILIACEAE

Liliaceae  Lily Order

Commelináceae—Spiderwort Family

Upright or trailing herbs with fleshy leaves of moderate thickness; mucilaginous sap; sepals 3 or 0, petals 3, stamens 3 or 6, pistil 1, ovary 2-3-celled; flower syncarpous, apopetalous or sympetalous, hypogynous, regular or irregular; sepals not petal-like, petals usually withering in one day.

1. Flowers regular; stamens 6
   a. Petals separate
   b. Base of petals united to form a tube

2. Flowers irregular; fertile stamens 3

Tradescántia—Spiderwort, Wandering Jew

Named for Tradescant, an English gardener)

1. Native species with linear leaves; flowers chiefly in early summer
   a. Sepals and pedicels smooth
   b. Sepals glandular pubescent
      (1) Leaves and bracts 5-10 mm. wide
      (2) Leaves and bracts 1-2 cm. wide

2. Cultivated species with ovate or lanceolate leaves
   a. Creeping plant, rooting at the joints; leaves green or white striped; flowers white
   b. Plant half prostrate, not widely creeping; flowers rose-colored

Zebrina—Wandering Jew

(From zebra, referring to the striped leaves)

Creeping plant with variegated leaves, purple beneath

Commelina—Day Flower

Named for the brothers Commelin, Dutch botanists)

Branching annual weed with bright blue flowers

Liliáceae—Lily Family

Herbaceous plants with scapes or leafy stems growing from bulbs, corms or rootstocks, rarely shrubby; sepals 3, petals 3, stamens 6, pistil 1, ovary 3-celled, superior; flowers syncarpous, apopetalous or sympetalous, hypogynous, regular or nearly so; sepals usually petal-like.

1. Plants with evident above-ground stems bearing the leaves, or leaf-like twigs
   a. Plants with true leaves
      (1) Leaves thick and fleshy; flowers small, numerous, in elongated leafless spikes or racemes
         (a) Perianth tubular, with scarcely any limb
         (b) Tips of petals and sepals free, spreading, irregular
      (2) Leaves not thick and fleshy; flowers large, solitary or in loose leafy clusters
         (a) Flower solitary; stem bearing 1-2 leaves
         (b) Flowers usually several; stem bearing many leaves
   b. True leaves reduced to minute scales, foliage consisting of needle-like or leaf-like twigs in the axils of the scale-leaves
      (1) Herbaceous; flowers and fruit borne on ordinary twigs
      (2) Shrubby; flowers and fruit borne on the leaf-like twigs

2. Stemless plants
   a. Flowers borne on erect leafless scapes, usually in clusters
      (1) Leaves ovate to lanceolate
         (a) Flowers trumpet-shaped, each lasting one day
         (b) Flowers bell-shaped, persistent
      (2) Leaves linear, each flower lasting several days
         (a) Plants with thickened roots and no true bulb
            x. Flowers in umbels, blue or white

Tradescantia
Zebrina
Commelina
T. refléxa
T. occidentális
T. bractéolata
T. fluminénsis
T. micrántha
Z. pénzula
C. commúnis
Aloe
Haworthia
Tulipa
Lilium
Asparagus
Ruscus
Funkia
Convallaria
Agapanthus
y. Flowers in an elongated spike, orange red
z. Flowers in a branched panicle, white
(b) Plants with true bulbs
x. Flowers with an involucre
   (x) Flower solitary
   (y) Flowers in a cluster
y. Flower cluster without an involucre
   (x) Petals and sepals separate
      m. Petals and sepals white or greenish, many-veined
      n. Petals and sepals blue (rarely white), one-veined
   (y) Petals and sepals united at the base into a tube
b. Flowers solitary, borne directly on the underground stem
   (1) Plant with a corn; flower conspicuous
   (2) Plant with a creeping rootstock; flowers inconspicuous

Aloe—Aloe
(The Greek name)
Fleshy greenhouse plants; the leaves usually spiny
1. Leaves many-ranked
   a. Stem obvious, branching; leaves 3-7 dm. long with sheathing bases
   b. Stems short, covered with the small warty leaves
2. Leaves 3-ranked, warty and mottled

Haworthia
(Named for Haworth, an English botanist)
Fleshy greenhouse plant with short stem, and small whitish flowers

Tulipa—Tulip
(N. L. tulipa, turban, from the form of the flower)
Spring-flowering bulbs, often forced into winter blooming. The cultivated forms are generally considered as forming the two species:
1. Early flowering, pubescent
2. Late flowering, smooth

Lilium—Lily
(Lat. name of the lily, Gr. leonion)
1. Autumn-blooming species, sometimes delayed for indoor winter flowering; flowers usually spotted or striped on a white ground
   a. Flower flat; petals reflexed from the base
   b. Flower open bell-shaped; petals reflexed only at the tips, usually with a broad central stripe
2. Early summer-blooming species, often forced; flowers white
   a. Basal leaves broad; flower open bell-shaped
   b. Leaves all narrow lanceolate; flower trumpet-shaped

Asparagus—Asparagus
(The Greek name)
1. Foliage twigs thread-like
   a. Hardy vegetable with upright stems
   b. Greenhouse twiner
2. Foliage twigs broader, leaf-like
   a. Foliage twigs linear; branches drooping
   b. Foliage twigs ovate lanceolate; stems twining

Ruscus—Butcher’s Broom
(The Latin name)
Foliage twigs leathery, ovate lanceolate
Fúnkia—Day Lily
(Named for Funck, a German botanist)
Garden plants with trumpet-shaped flowers
1. Flowers white, fragrant
2. Flowers bluish
   a. Leaves broad ovate; flowers deep blue
   b. Leaves narrow ovate to lanceolate; flowers pale lilac

Convallária—Lily-of-the-valley
(Lat. convallis, a deep valley)
Spring-blooming hardy plant with racemes of fragrant bell-shaped flowers; often forced for winter blooming

Agapánthus
(Gr. agape, love, anthos, flower)
Large half-hardy pot plant with umbels of blue or white trumpet-shaped flowers

Kníphófia—Red-hot Poker
(Named for Kniphof, a German botanist)
Half-hardy plant with an elongated spike of tubular scarlet and yellow flowers

Chloróphytum
(Gr. chloros, green, phyton, plant)
Pot plant with stolons, and loose panicles of white flowers

Tritélia
(Gr. tri-, three, teleos, complete)
Bulbous plant with solitary whitish flowers, spring-blooming but forced in late winter

Állium—Onion
(Lat. name of the onion)
Bulbous plant with umbels of small white flowers, often forced in greenhouses

Ornithógánum
(Gr. ornis, ornithos, bird, gala, milk)
1. Flowers over 2 cm. across, white with a black pistil
2. Flowers less than 2 cm. across, white with green stripes

Scilla
(Lat. scilla, Gr. skilla, sea-onion)
Very early spring-blooming bulbs, sometimes forced; flowers bright blue

Hyacinthus—Hyacinth
(The Greek name)
Spring-blooming bulbous plant, often forced in winter; fragrant flowers in a dense raceme

Colchícum
(Greek name of some poisonous plant)
Flowers in autumn without leaves or stems, pink-purple, crocus-like

Aspidistra
Pot plant with large leathery lanceolate leaves (sometimes variegated) from a creeping rootstock; flowers fleshy, almost concealed in the earth, their parts in 4's

Pontederiáceae—Pickerel-weed Family
Aquatic and marsh plants; flower clusters subtended by leaf-like spathes; sepals 3, petals 3, stamens 6, pistil 1, ovary 3-celled or 1-celled; flower syncarpous, sympetalous, hypogynous, irregular; sepals and petals similar, united, and forming a 2-lipped perianth.
CYPERACEAE

Pontederia—Pickerel weed
(Named for Pontedera, an Italian botanist)
A single native species growing in edges of ponds; flowers blue,

Poales  Grass Order

Cyperaceae—Sedge Family

Grass-like herbs, annual or perennial; stems mostly solid and triangular, leaves mostly long and narrow, with closed sheaths, 3-ranked on the stem; flowers in spike-like spikelets), each flower in the axil of a scale (glume, bract), without a calyx or corolla; hairs sometimes long, barbed bristles or hairs, scales 2-ranked or spirally arranged, stamens 1-3, anthers linear or ovoid, attached at the base; pistil with 2-3-cleft style, ovary bicarpell, seed 1, levis; fruit of beaked or triangular nutlet or achene.

Key to the Genera

1. Flowers perfect, spikes (spikelets) all of one sort
   a. Spikes cone-shaped; scales very numerous and spirally incrassated
      (1) Achene crowned by a cap or tubercle
      (2) Achene without a cap or tubercle
   b. Spikes (spikelets) flattened; scales 2-ranked
      (1) Flowers without bristles, achene beakless
      (2) Flowers with 6-10 bristles, achene beaked

2. Flowers monoecious, in the same or in separate spikes, or dioecious; achene enclosed in a sack

Heleocharis—Spike Rush
(Gr. helos, marsh, chairo, delight in, referring to its hull)
1. Plants tufted, without conspicuous rootstocks
2. Plants not tufted, perennial from an elongated rootstock

Scirpus—Bulrush, Club Rush
(Lat. scirpus, bulrush)
1. Tall aquatic rush, inflorescence without leafy involucre
2. Swamp or wood plants, involucre leafy
   a. Style 3-cleft, achene 3-angled, bristles 6
   b. Style 2-cleft, achene plano-convex, bristles 4
GRAMINACEAE

Cyperus—Cyperus
(Gr. kypeiros, a sedge)

1. Styles 2-cleft, achene lenticular, not 3-angled
   a. Stamens 2, style much exserted, scales dull
   b. Stamens 3, style scarcely exserted, scales shining
2. Styles 3-cleft, achene 3-angled
   a. Spikelets in heads
   b. Spikelets in spikes
      (1) Spikelets flat, linear, falling away from the spikes
      (2) Spikelets thicker, oblong-linear, scales falling away from the spikelets

Dulichium—Dulichium
(Of doubtful origin and meaning)

A single species

Cárex—Sedge
(Lat. carex, sedge, i.e., that which cuts)

A large and difficult genus. Most of the species ripen and shed the fruit before the middle of

Cárex festucacea
Cluster of spikelets and fruit
Pistillate and staminate spikes and fruit
September and are not in condition to be identified subsequent to that time. The following swamp
species retain the fruit longer and may be looked for through October.

1. Spikes 2-5, stalked and pendulous
2. Spikes 2 (1-3), sessile or very short-stalked

Cárex lurida
Cárex comósá
Cárex intumésceus

Gramínaceae—Grass Family

Annual or perennial herbs (shrubs and trees in the Bambuseae); stems usually hollow, with
nodes and internodes; leaves narrow, 2-ranked, with sheathing base split on the side opposite the
blade; flowers in spikelets, in paniculate, racemose or spicate inflorescences; spikelets consisting of
2-many, 2-ranked bracts, the two lower of which are empty, the succeeding ones, called lemmas (1-
many), each bear a naked, usually perfect flower; the flower is subtended on the inside by a thin scale
called the palet; stamens 3, rarely 1, 2, or 6; filaments very slender, anthers long, attached at the
middle; pistil 1, styles 2, rarely 1-3, stigmas feathery, fruit a 1-seeded grain or caryopsis, usually
inclosed at maturity by the lemma and palet.

KEY TO THE TRIBES

1. Plants with herbaceous stems
   1. Spikelets all monoecious
      a. Spikelets in different inflorescences, the staminate in tassels, pistillate in
      ears

Zea in Maydeae
b. Spikelets in the same inflorescence
   (1) Pistillate spikelets below, surrounded by an ivory-like involucre
   (2) Pistillate spikelets above, without ivory-like involucre
2. Spikelets all perfect or of two kinds, perfect and staminate or rudimentary
   a. Spikelets in different inflorescences, the staminate in tassels, pistillate in the other imperfect and stalked
   b. Spikelets all alike
      (1) Glumes 3-4
         (a) Glumes shorter than the fertile lemma and pale, both lemma and pale indurated in fruit
         (b) Outer glumes enclosing the lemma and pale, lemma only indurated in fruit; third and fourth glumes small or rudimentary and hair-like
      (2) Glumes 2
         (a) Spikelets in one-sided spikes
         (b) Spikelets not in one-sided spikes
            x. Spikelets 1-flowered
               (x) Glumes small or minute
               (y) Glumes variable, mostly as long or longer than lemma
            y. Spikelets 2-many-flowered
               (x) Spikelets sessile on the main zig-zag axis
               (y) Spikelets more or less stalked, main axis not zig-zag
               m. Glumes enclosing the spikelet, lemma usually awned on the back
               n. Glumes not enclosing the spikelet, lemma awnless or awned at the top
      (3) Glumes none
II. Plants with tall woody stems or canes

Artificial Key

I. Spikelets in panicles (or cylindric spikes)
   1. Spikelets one-flowered
      a. Three or four empty glumes

   ![Image of Agrostis vulgaris, panicle and spikelet]

   Agrostis vulgaris, panicle and spikelet

   b. Two empty glumes
      (1) Flowers naked at base, or with one hairy bristle
      (2) Flowers with two scales or bristles at base
   c. No empty glumes

   ![Image of Paniceae]

   Paniceae
2. Spikelets more than one-flowered
   a. Empty glumes longer than the spikelet; lemma awned on the back
   b. Empty glumes shorter than the spikelet, lemma awned at the tip
      (1) Herbs
      (2) Tall reeds

II. Spikelets not in panicles
1. Spikelets monoecious
2. Spikelets in one-sided spikes
3. Spikelets in pairs (one sessile, the other stalked)

4. Spikelets on a zig-zag axis

**Maydeae—Corn Tribe**

1. Staminate and pistillate spikelet in different inflorescences, tassels and ears
2. Staminate and pistillate spikelets in the same inflorescences, the pistillate enclosed by a bead-like involucre
Zéa—Corn, Maize
(Gr. zeia, a kind of coarse grain)
Z. mays

A single cultivated species

Cóix—Job’s Tears
(Gr. koix, a kind of palm)
C. lachryma

A single cultivated species

ANDROPOGÓNEAE—BLUESTEM TRIBE

1. Spikelets in many-jointed, spike-like hairy racemes

2. Spikelets in a panicle
   a. Panicle very hairy, golden, stalked spikelets reduced to 1 or 2 hairy pedicels
   b. Panicle smooth or nearly so, brownish, stalked spikelets 1-2, staminate or empty

Andropógon—Bluestem, Beard Grass
(Gr. aner, andros, man, pogon, beard, referring to the hairy axis)
1. Racemes solitary, stems 4-8 dm. high
   A. scopdrius
2. Racemes in clusters, stems 10-15 dm. high
   A. furcátus

Chrysopógon—Goldstem, Goldbeard
(Gr. chrysos, gold, pogon, beard, referring to the hairy pedicels)
A single species
C. nátans

Sórghum—Sórghum
(Of doubtful origin and meaning)
S. vulgáris

PANÍCEAE—MILLET TRIBE

1. Spikelets inclosed in a spiny bur

2. Spikelets not inclosed in a spiny bur
   a. Spikelets borne in more or less one-sided spikes
      (1) Spikes long and slender, in a digitate cluster; glumes not awned
      Digitária
      (2) Spikes shorter, in a panicle; glumes more or less awned
      Echinochloa
   b. Spikelets not in one-sided spikes
      (1) Spikelets subtended by bristles, in a cylindrical spike
      Setária
      (2) Spikelets not subtended by bristles, in a panicle
      Panicum

Cénchurus—Sandbur
(Gr. name of a kind of millet)
C. carolinidnus

A single species

Digitária—Finger Grass
(Lat. digitus, finger, referring to the flower cluster)
1. Axis of spikes flat, broadly winged; stems spreading
   a. Spikelets with 3 glumes, 2-3 mm. long
   D. sanguindlis
   b. Spikelets with 2 glumes, 2 mm. long
   D. humifúsá
   c. Spikelets with 1 glume
   D. filiformis
2. Axis of spikes not winged, 3-angled, stems erect

Echinochloa—Barnyard Grass
(Gr. echinos, hedgehog, chloe, grass, referring to the bristly spikelets)
A single species with awned spikelets, awn very variable in length
E. crusgálli

Setária—Foxtail, Pigeon Grass
(Lat. seta, bristle, referring to the awns)
1. Bristles five or more below each spikelet
   S. gláduca
2. Bristles 1-3 below each spikelet
   a. Spikes thick and dense, 1-2 dm. long, spikelets 3 mm. long
   S. itálica
   b. Spike slender, 3-10 cm. long, spikelets 2 mm. long
   S. víridis
GRAMINACEAE

Panicum—Panic Grass
(Lat. panicum, millet, from panis, bread)
1. Plants glabrous throughout, 8–20 dm. high, erect
2. Plants bristly pubescent at least on the sheaths, more or less ascending or spreading, 3–10 dm. high
   a. Annual, panicle ample, branches long and slender
   b. Perennial, panicle short, less than 10 cm.

Phalarideae—Canary Grass Tribe
A single genus (in late season)

Phalaris—Canary Grass
(Gr. name of this grass, from phalos, shining)
1. Panicle very dense, spike-like; glumes winged on keel
2. Panicle branched; glumes not winged on the keel
   a. Leaves green
   b. Leaves striped with white

Oryzeae—Rice Tribe
1. Cultivated grass; glumes present, small
2. Native grasses; spikelets monoecious, or perfect and staminate; glumes lacking
   a. Tall aquatic grass, pistillate spikelets at the summit of the panicle
   b. Low marsh grass with closely crowded spikelets, the perfect more or less inclosed in the sheaths

Oryza—Rice
(Gr. oryza, rice)
A single cultivated species

Zizania—Wild Rice, Indian Rice
(Gr. zizanion, a weedy grass)
1. Stems 2.3 m. high; panicle open
2. Stems about 1 m. high; panicle more appressed

Leersia—Cut-grass, White Grass
(Named for the German botanist, Leers)
1. Panicle simple, branches stiffly spreading; spikelets 2.3 mm long
2. Panicle twice branched; spikelets 4.5 mm long

Chlorideae—Grama Tribe
1. Tall marsh grass with long, sharp-edged leaves
2. Prairie grass with short blunt-edged leaves

Spartina—Slough Grass
(Gr. spartine, cord, referring to the leaves)
A single species
1. Spikes 15 or more, pendant
2. Spikes 1-4 usually curved, horizontal or ascending
   a. Leaves smooth
   b. Leaves hairy
AGROSTÍDEAE—REDTOP TRIBE

1. Spikelets in a cylindrical spike
   a. Lemma without an awn; glumes awn-pointed or aristate
   Phleum
   b. Lemma awned; glumes not aristate
   Alopecurus

2. Spikelets in a panicle or spike-like panicle
   a. Spikelets in a dense spike-like panicle
   Muhlenbergia
   b. Spikelets in an open panicle (1)
   Phleum

   (1) Lemma firm and hard at maturity, closely enveloping the grain
   Oryzopsis
   (2) Lemma thin or membranous at maturity, glumes coarse, grain loose
   Agrostis

   x. Lemma without a tuft of hairs at its base
   Calamagrois
   y. Lemma with a tuft of hairs at its base
   Calamovilfa
   (x) Rachilla prolonged behind the palet, bristle-like
   Sporobolus
   (y) Rachilla not prolonged behind the palet
   Cinna

Phléum—Timothy
(Gr. phleos, a kind of reed)
A single cultivated species
P. praténsae

Alopecúrus—Foxtail Grass
(Gr. alopex, fox, cura, tail, referring to the spike)
A single species
A. geniculátus

Muhlenbérgia—Muhlenbergia
(Named for Muhlenberg, an American botanist of the 18th century)
1. Glumes equaling the lemma
   M. mexicánda
   M. racemósae
2. Glumes much longer than the lemma

Oryzópsis—Mountain Rice
(Gr. oryza, rice, opsis, likeness; of little meaning)
A single species (at this season)
O. melanocárpa

Calamagróstis—Bluejoint Grass
(Gr. kalamos, reed, agrostis, grass)
A single species
C. canadénis

Calamovilfa—Reed Grass
(A hybrid name of doubtful meaning)
A single species
C. longifólia

Agróstis—Red Top
(Gr. agros, field, from its home)
1. Palet at least one-half as long as the lemma, 2-nerved
   A. alba
   A. hiémális
2. Palet minute and nerveless or wanting

Sporóbolus—Rush-grass, Drop-seed
(Gr. spora, seed, bolos, throwing)
1. Slender plants, the spike-like panicle exserted beyond the upper leaf sheath
   S. cuspidátus
   S. cryptándrus
2. Coarse wiry plant, the much branched panicle more or less inclosed by the upper leaf sheath

Cinna—Wood Reed-grass
(Gr. kinna, a kind of grass)
A single species
C. arundínácea

AVÉNEAE—OAT TRIBE

A single genus
Avena
1. Lemma with a ring of hairs at the base, awn 3 cm. long
2. Lemma without a ring of hairs, awn less than 3 cm. or lacking

**FESTUCEAE**—**BLUEGRASS TRIBE**

1. Tall reed-like swamp grass, spikelets with long silky hairs
2. Lower meadow or woodland grasses
   a. Spikelets 8-12 mm. wide, about as long as broad
   b. Spikelets less than 8 mm. wide, longer than broad
      (1) Panicle dense and spike-like, shining
      (2) Panicle open, not shining
         (a) Spikelets in one-sided, capitate clusters
         (b) Spikelets not collected into one-sided clusters, spikelets usually large
            x. Lemmas more than 6 mm. long, 2 toothed at apex, often awned near the apex
            y. Spikelets smaller; lemmas less than 6 mm. long, awnless or awned at the apex
            (x) Spikelets 3-5-flowered
               m. Glumes compressed and keeled; lemma mostly with wavy hairs at the base, awnless
               n. Glumes rounded, at least at the base; lemma without hairs, mostly awned at the apex
            (y) Spikelets 5-30-flowered, much flattened

**Phragmites**—Reed-grass
(Gr. *phragmites*, growing in hedges; of doubtful application)
A single swamp species, 4-8 feet tall

**Briza**—Quaking Grass
(Gr. *briza*, a kind of grass)
A single cultivated species

**Koeleria**—Koeleria
(Named for Koeler, a German writer on grasses)
A single species

**Dactylis**—Orchard Grass
(Gr. *daktylos*, finger, of doubtful application)
A single introduced species

**Bromus**
(Gr. *bromos*, a kind of oats)

1. Spikelets densely silky-hairy all over
2. Spikelets not densely silky-hairy all over
   a. Lemma awned, awn over 1 cm. long
   b. Lemma awnless or with an awn less than 1 cm. long
      (1) Lemma awnless or merely awn-pointed
      (2) Lemma with a short straight awn

**Poa**—Bluegrass
(Gr. *poa*, grass)
1. Low, spreading annual, less than 2 dm. high
2. Perennials; stem erect, over 3 dm. high
   a. Stems not tufted, from extensively creeping rootstock
   b. Stems tufted
      (1) Panicle crowded; stems much exceeding the leaves in length
      (2) Panicle open and spreading; stems scarcely exceeding the leaves
1. Leaves narrow and involute; lemma awned
2. Leaves flat; lemma not awned

Eragrostis—Eragrostis
(Gr. era, ground, agrostis, grass, from the spreading habit)
1. Perennial, reddish; branches of panicle long and stiff
   a. Spikelets 2-8 mm. long
   b. Spikelets 5-16 mm. long

Eragrostis—Eragrostis
(Gr. era, ground, agrostis, grass, from the spreading habit)
1. Spikelets 1 at each joint of the zigzag axis
   a. Spikelets with edge turned towards the axis
   b. Spikelets with flat side turned towards axis
      (1) Native perennials
      (2) Cultivated annuals
         (a) Spikelets 2-several-flowered, glumes broadly ovate
         (b) Spikelets 2-flowered, glumes acute
2. Spikelets 2-several (sometimes 1 or more rudimentary) at each joint of the zigzag axis
   a. Spikelets 1-flowered, in 3’s at each joint, the lateral reduced
   b. Spikelets 2-6 flowered
      (1) Spikelets ascending, glumes about the same size as lemmas
      (2) Spikelets spreading horizontally, glumes very small or lacking

Lolium—Darnel
(Lat. name of the darnel)
A single introduced species

Agropyrum—Wheat Grass
(Gr. agros, field, pyros, wheat)
1. Stems tufted, no creeping rootstocks or stolons; lemma awned
   a. Awn about twice the length of the lemma; spike thick
   b. Awn shorter than the lemma; spike slender
2. Stems solitary or few, from creeping rootstocks; lemma mostly awnless or awn-pointed

Triticum—Wheat
(The Latin name)
1. Grain remaining within the glumes when ripe
2. Grain easily falling out when ripe

Secale—Rye
(NL. from seco, cut)
A single cultivated species

Hordeum—Barley
(Lat. name of the barley)
1. Cultivated; glumes short, not awn-like
2. Native weed; glumes long and awn-like

Elymus—Rye Grass, Wild Rye
(Gr. elymos, a kind of grass, from eleyo, roll up)
1. Spike erect, awns shorter than the spikelet
2. Spike more or less nodding, awns longer than spikelet
   a. Glumes narrowly awl-shaped; spike slender
b. Glumes linear lanceolate; spike stouter

(1) Spike loosely flowered, nodding at the summit, free from the upper leaf sheath

(2) Spike densely flowered, compact and strict, its base usually noded in the upper leaf sheath

Hystrix—Bottlebrush
(Gr. hystrix, porcupine, referring to the long awn)
A single woodland species

BAMBUSAE—BAMBOO TRIBE
A single cultivated genus and species

Iridales Iris Order

Amaryllidaceae—Amaryllis Family

Herbaceous plants, usually with scapes or leafy stems from bulbs, or corms, rarely rhizomatous; sepals 3, petals 3, stamens 6, pistil 1, ovary 3-celled, inferior; flowers sympetalous, epigynous or rarely apopetalous, epigynous, regular or somewhat irregular; sepals petal-like, the perianth often bearing a conspicuous crown within the petals.

1. Flowers with a crown-like appendage within the perianth
2. Flowers without a crown-like appendage
   a. Stems leafy; flowers white
   b. Bulbous plants with scapes; flowers pink to red
      (1) Scales present at the base of the stamens
          (a) Flowers in an umbel, regular
          (b) Flower solitary, irregular
      (2) No scales at base of the stamens
          (a) Sepals and petals distinctly united below
          (b) Sepals and petals scarcely united
             x. Flowers pink or whitish
             y. Flowers orange

Narcissus
(The Greek name)
Spring-blooming bulbous plants often forced in winter
1. Crown as long as the petals and sepals; flowers solitary
2. Crown small; flowers in clusters
   a. Leaves 10-30 mm. wide
   b. Leaves 3-5 mm. wide

Polianthes—Tuberosa
(Gr. polios, white, anthos, flower)
Autumn-flowering garden plant often with double flowers

Hippeastrum—“Amaryllis”—Johnsonian Lily
(Gr. hippos, horse, astron, star from the marking of the corolla)
The house and greenhouse forms are largely hybrids of

Sprekelia—Jacobean Lily
(Named for Sprekelien, a German botanist)
Bulbous greenhouse plant with solitary irregular scarlet flowers

Amaryllis—Belladonna Lily
(Named for the sleeplessness, Amaryllis)
Half-hardy bulbous plant with umbel of lily-like pink or whitish flowers

Clivia
1. Leaves acute, flowers upright, funnel-shaped
2. Leaves obtuse, flowers pendulous, bell shaped
IRIDACEAE

Nerine
(Gr. nereis, a sea-nymph)
1. Flowers scarlet; stamens straight
   N. curvispīlia
2. Flowers pale pink; stamens curved
   N. flexuōsa
3. Flowers bright pink (hybrid of 1. and 2.)
   N. Mansellici

Iridáceae—Iris Family

Herbaceous plants with bulbs, corms, or rootstocks, from which come the solitary flowers, scapes, or leafy stems; sepals 3, petals 3, stamens 3, pistil 1, ovary 3-celled, inferior, style with three branches; flower syncarpous, sympetalous or apopetalous, epigynous, regular or somewhat irregular; sepals petal-like, but sometimes differing considerably from the petals.
1. Style branches petal-like, concealing the stamens
   a. Perianth-tube present; plants with bulbs or creeping rootstocks
   Iris
   b. Sepals and petals separate to the base; plants with corms
   Moraea
2. Style branches not petal-like; stamens obvious
   a. Stemless; flowers rising directly from the corm
   Crocus
   b. Leafy stemmed; flowers in spikes or racemes
   (1) Style branches cleft into 2 thread-like subdivisions
   Freesia
   (2) Style branches not cleft
   (a) Flowers regular, salver-shaped
   Ixia
   (b) Flowers somewhat irregular, funnel-shaped
   x. Bracts leafy; flowers decidedly irregular
   Gladiolus
   y. Bracts papery; flowers slightly irregular
   Tritonia

Iris—Iris
(Gr. iris, rainbow)
1. Garden plants with creeping rootstocks, blooming in early summer, often
   with a few autumn flowers
   a. Flowers lavender; leaves about 2 dm. long
   I. cenuālti
   b. Flowers dark purple; leaves 3-4 dm. long
   I. germānica
2. Bulbous spring-blooming plants, sometimes forced into winter blooming
   a. Stemless, blue, flowering in the greenhouse in early winter
   I. alāta
   b. Long stemmed, variously colored, flowering in late winter
   I. xiphium

Moraea—Peacock Iris
(Named for Moræas, father-in-law of Linné)
Slender plant with white and blue iris-like flowers
M. patōnía

Cròcus—Crocus
(The Greek name)
Spring flowering plants often forced into winter blooming
1. Flowers yellow
   a. Anthers orange; sepals brownish on outside
   C. sustānis
   b. Anthers pale; sepals clear yellow
   C. moesidecuś
   C. vērnus

Frēesia
Greenhouse bulbous plants with fragrant flowers in irregular racemes
1. Flowers whitish-green and purple
2. Flowers pure white
3. Flowers yellow and orange

Íxia
(Gr. ixōs, birdlime, from the sticky sap)
Greenhouse bulbous plants with flowers in spikes
1. Flowers white or yellow with a dark eye
   I. maculāta
2. Flowers purplish with a dark eye
   I. colomellāris

Gladiolus
(Lat. gladiolus, small sword, from the shape of the leaf)
Various garden hybrids of G. cardinalis, G. psittacinus, and other species.
BROMELIAEAE—ORCHIDACEAE

Tritonia—Montbretia

(From the sea-god, Tritonia)

1. Perianth-tube longer than the slightly spreading sepals and petals.
2. Perianth-tube about the length of the widely spreading sepals and petals.

The latter is a garden hybrid of T. Pottsii and Cratylia purpurea.

Bromeliaceae—Pineapple Family

Herbs, many of them epiphytic; leaves usually gray and scales; spadix 3, petals 6, stamens 6, ovary 3-celled; flowers syncarpous, apopetalous or sympetalous, hypogynous to epigynous, regular or somewhat irregular; sepals not petal-like, usually papery. The following genera are tropical or subtropical plants, sometimes grown in greenhouses.

Ananas—Pineapple

(Brazilian name of the pineapple)

Plant with a fleshy multiple fruit, surmounted by a crown of leaves.

Tillandsia—Spanish Moss, Tillandsia

Named for Tillands, a Swedish botanist.

1. Plant hanging in festoons; stem branched, thread-like; flowers solitary (Spanish Moss)
2. Plant with a tuft of erect leaves; flowers in a cluster
   a. Stamens shorter than the petals; flowers few, blue
   b. Stamens longer than the petals
      (1) Base of plant bulb-like; leaves about 1 dm. long
      (2) Base of plant not bulb-like
         a) Leaves awl-shaped, about 15 cm. long
         b) Leaves 1 cm. or more wide, 5 dm. long

Scitaminales Canna Order

Cannaceae—Canna Family

Large herbs, with rootstocks and leafy stems; flowers in clusters, sepals 3, petals 3, sterile stamens 3-4, fertile stamen 1, pistil 1, ovary 3-celled, inferior; flower syncarpous, sympetalous, epigynous, irregular; sterile stamens petal-like and larger than the petals, one different from the others, fertile stamen petal-like with the anther along one edge, style flat, ovary with a few large seeds.

One genus

Canna—Canna

(Lat. canna, reed, cane)

The garden Cannas are hybrids of numerous wild species from the southeastern United States, West Indies, South America, and northern India.

Orchidales Orchid Order

Orchidaceae—Orchid Family

Herbaceous plants with rootstocks, corms, or solid thickened stem bases; many of them air-plants; sepals 3, or apparently 2 as a result of union, petals 3, stamens usually 3, sterile stamens 1 or 2, pistil 1, ovary 1-celled (rarely 3-celled), inferior, usually (usually 2-lobed); flowers sympetalous, apopetalous or sympetalous, epigynous, irregular; sepals and petals usually similar in size, one sterile stamens variable, the pollen of the fertile stamen usually in sticky masses (pollinia), usually bent or twisted so as to insert the flower, fruit with indehiscent papery seeds.

Many tropical and subtropical forms are cultivated in greenhouses, and others are also numerous native plants of this family, nearly all of which bloom in spring or summer.

1. Fertile stamens 2; lip slipper-like
2. Fertile stamen solitary, the 2 anther-sacs sometimes widely separated
   a. Native plants with small and inconspicuous flowers
      (1) Stems leafy; lip not sack-like, appended at base
         *Spiranthes*
      (2) Leaves all basal; lip sack-like
         *Epipactis*
   b. Greenhouse plants of tropical origin; flowers large and conspicuous; mostly growing with little earth, and having thick leaves, aerial roots, and thickened tuberous stems (pseudo-bulbs).
      (1) Flower clusters terminal upon the pseudo-bulbs; chambers of anther distinct
         (a) Lip flat and spreading; pollen masses 4; flower clusters usually many-flowered
            *Epidendrum*
         (b) Lip rolled about the base of the column; flower clusters few-flowered
            x. Pollen masses 4
            y. Pollen masses 8
      (2) Flower clusters not terminal upon the pseudo-bulbs
         (a) Flowers borne singly or in small clusters upon the sides of the pseudo-bulbs
            *Dendrobium*
         (b) Flowering shoots springing from the base of the pseudo-bulbs; chambers of anther confluent
            x. Base of lip parallel with the column, often adhering to it
            y. Lip spreading from the base of the column
      (a) *Cattleya*  
      (b) *Laelia*

**Cypripédium**
(Gr. *Kypris*, Venus, *pedion*, slipper, from the slipper-like lip)
A genus compromising our native "Mocassin flowers" as well as many exotic forms.
Flowers green, brown, and white
*C. insigne*

**Spiránthes**
(Gr. *speira*, spiral, *anthos*, flower, from the spiral cluster)
1. Sepals and petals forming a hood-like structure
   *S. romanzoffiana*
2. Sepals and petals spreading
   *S. cernua*

**Epipáctis**
(Gr. name of a plant)
Leaves white netted; lip sack-like
*E. pubescens*

**Epidéndrum**
(Gr. *epi-*, upon, *dendron*, tree, from its habit)
1. Base of lip slightly joined to the column; flowers red and orange
   *E. vitellinum*
2. Base of lip completely joined to the column; flowers pink, green, and chocolate
   *E. venosum*

**Cáttleya**
(Named for Cattley, an English collector)
1. Pseudo-bulbs 1-leaved; flowers 15 cm. in diameter
   *C. labiata*
2. Pseudo-bulbs 2-3-leaved; flowers about 10 cm. in diameter
   *C. Skinneri*

**Láelia**
(Named for Laelius, a Roman statesman)
1. Pseudo-bulbs compressed and margined; sepals and petals with a green line along the outside of the midrib
   *L. ánceps*
2. Pseudo-bulbs not compressed or margined; sepals and petals not marked with a green line
   *L. autumnális*

**Dendróbium**
(Gr. *dendron*, tree, *bios*, living, from its habitat)
1. Pseudobulbs black-hairy; flowers white, marked with yellow
   *D. formósum*
2. Pseudobulbs not black-hairy; flowers white, pink, and crimson
   *D. nóbile*
Odontoglossum
(Gr. odontos, tooth; glossa, tongue, from the form of the lip)
Flowers few, large, yellow with red-brown markings; sepals lanceolate; lip
rounded

Oncidium
(Gr. oncidion, a little hook)

1. Lip yellow
   a. Lip 4-lobed; other petals and sepals very small, rounded, greenish
      brown
   b. Lip round, obturate; other petals and sepals lanceolate, brown

2. Flower soft purple-rose
Glossary

Achene A dry, one-seeded fruit
Acuminate Gradually tapering to a point
Acute Sharp-pointed
Alternate Not opposite; with a single leaf at each place of attachment
Annual Lasting only one growing season
Anther The upper part of the stamen, containing the pollen; the pollen pouch
Apetalous Without petals
Apex Tip or upper end
Apocarpous Having or consisting of separate carpels
Apopetalous Having or consisting of separate petals
Appressed Lying close to or against another organ
Aquatic Growing in the water
Aristate Drawn out into a long needle-like point
Ascending Growing obliquely upward
Awl-shaped Narrowed upward from the base to a slender, rigid point
Awn A slender bristle-like structure
Awn-pointed Tipped with an awn
Axil The angle between leaf and stem
Axillary Borne in the axils of leaves
Axis A term generally applied to that portion of a branch which bears the flowers or the parts of a flower
Barbed Having a tip like a fish-hook
Basal Arising from the base
Beak An elongated tapering structure
Beaked Bearing a beak
Bearded With hairs limited more or less to a certain area of an organ
Berry A fruit in which the seeds are imbedded in a soft or fleshy substance
Bitenate Twice ternate
Blade The flat, expanded part of a leaf
Bract A leaf, usually small, standing below a flower or a flower-cluster
Bracteole A small leaf or scale on the pedicel below the flower
Bristle A stiff hair or any similar outgrowth
Bulb A short stem with fleshy scales, usually subterranean
Bulbets Small bulbs
Bulbous Like a bulb; bearing bulbs
Capsule A dry fruit consisting of two or more carpels
Carpel A simple pistil, or one member or division of a compound pistil
Catkin An elongated axis covered with scales all around that bear either stamens or pistils
Cell A cavity or chamber in an ovary
Chaff Thin scales between the disk flowers of composite heads
Ciliate Provided with marginal hairs
Claw Applied to the much narrowed lower portion of a petal
Cleft Cut about half way to the middle
Climbing Growing upon a support of some kind
Compound Composed of two or more similar parts united into one whole
GLOSSARY

Compound leaf One divided into separate leaflets
Cone An elongated axis bearing stamens or thickened scales with naked ovules, the flower and fruit of conifers
Convolute Rolled up lengthwise
Cordate Heart-shaped
Corm A swollen fleshy base of a stem
Corymb A flat-topped or convex open flower cluster
Creeping Growing along the ground
Crenate Scallop ed; with rounded, shallow teeth
Crenate-toothed With rounded teeth somewhat flat
Cyme A flower cluster in which the terminal or middle flower blossoms before the remainder
Deciduous Falling off at the close of the growing period
Declined Bent down
Decurrent Applied to leaf bases, running down the stem
Dentate Toothed, with outwardly projecting teeth
Denticulate With small teeth
Depressed Vertically flattened
Dioecious Bearing pistils and stamens on different plants
Disk An enlargement of the axis of a flower around the base of the pistil; the group of tubular flowers in the Asteraceae
Dissected Cut or divided into numerous segments
Divided Lobed to the base
Entire Without lobes, divisions, or teeth
Epigynous Applied to a flower with the parts upon the ovary
Erect Standing upright
Exserted Projecting beyond the surrounding parts
Fascicle A dense cluster
Fascicled Borne in dense clusters
Fertile Bearing seeds, or bearing pollen
Filament The stalk bearing the anther
Fleshy Soft, containing more or less sap
Fruit An axis bearing stamens or pistils or both; generally sepals and petals are associated with these
Glabrous Without hairs
Gland A secreting surface or structure; any small appendage or protuberance bearing the appearance of such an organ
Glandular With glands or gland-like
Glaucous Covered with a bluish or white, fine, mealy substance, a bloom
Globose Spherical or nearly so
Glume The small scale of the spikelets of grasses and sedges
Hastate Arrow-shaped but with the basal lobes diverging
Head A dense cluster of sessile or nearly sessile flowers on a very short stalk
Herb A non-woody plant which dies down to the ground annually
Herbaceous Of the nature of herbs
Hirsute With somewhat coarse, stiff hairs
Hispid With bristly stiff hairs
Hypogynous Applied to a flower with the other parts below the ovary
Included Not projecting beyond the surrounding parts
Indehiscent Applied to fruits that do not open or split to let out the seeds
Inferior Applied to an organ situated below another one
Inflorescence  The portion of a plant bearing the flowers; mode of arrangement of flowers
Integument  A protecting layer or coat, as the covering of a seed
Internode  The part of the stem between two successive nodes
Involucre  A group of leaves or scale-like leaves borne just underneath a flower or a close cluster of flowers
Involucral  Of an involucre
Irregular  Applied to a flower in which the petals, or other parts, are unlike
Keel  The two fused lower petals of the flower of the Pea Family
Keeled  Ridged, like the keel of a boat
Lanceolate  Shaped like a lance
Lemma  The outer scale of a grass flower
Lenticular  Shaped like a lens
Ligule  A strap-shaped organ, as the rays in the Asteraceae
Ligulate  In the form of a strap
Linear  Long and narrow with sides nearly parallel
Linear-lanceolate  Narrowly lance-shaped
Lip  Each of the main upper and lower divisions of a zygomorphic corolla or calyx; the peculiar modified petal of an orchid flower
Lipped  Having a lip
Monoecious  Bearing stamens and pistils on the same plant but in different flowers
Nerve  One of the lines or ridges running through a leaf
Net-veined  Veins running in various directions and connecting with each other
Netted-veined  Veins running in various directions and connecting with each other
Nodding  Hanging on a bent pedicel
Node  The part of the stem which normally bears a leaf
Nut  A dry, one-seeded, indehiscent fruit with a stony shell or covering
Nutlet  A diminutive nut
Obcordate  Inversely heart-shaped
Obblanceolate  Inverse of lanceolate
Oblong  Somewhat longer than broad, with the sides nearly parallel
Oblong-lanceolate  Broadly lance-shaped
Obtuse  Rounded or blunt
Opposite  Applied to organs inserted at the same level but 180 degrees apart
Orbicular  Circular
Ovary  The part of the pistil in which the young seeds are borne
Ovate  Shaped like the outline of an egg
Ovule  A young seed
Palet  The inner scale of a grass flower
Palmate  Radiately lobed or divided
Palmately  In a palmate manner
Panicle  A compound flower-cluster, the lower branches longest and blossoming first
Pappus  The bristles, hairs, awns and like structures which are borne upon the fruit in the Chicory and Aster Families
Parasitic  Growing upon and getting its nourishment from some other plant
Parted  Deeply cleft
Peduncle  The stalk of a flower or of a flower-cluster
Pedicel  The stalk of a flower in a flower-cluster
Peltate  Shaped like a shield with a stalk attached in the middle below
Perennial  Lasting from year to year
Perfect  A flower having both stamens and pistils
Perfoliate  Leaves appearing to be pierced by the stem
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tr>
<td>Perianth</td>
<td>Applied to the leaves of the flower where not clearly divided into sepals or corolla.</td>
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<tr>
<td>Perigynium</td>
<td>The sack-like membrane enclosing the ovary or the calyx in the grass.</td>
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<td>Carex</td>
<td>Perigynous Applied to a flower in which the parts are united into a cup around the ovary.</td>
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<tr>
<td>Persistent</td>
<td>Organs that remain attached after the growing season.</td>
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<tr>
<td>Petal</td>
<td>One of the inner set of flower leaves, usually brightly colored, or a corolla.</td>
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<tr>
<td>Petaloid</td>
<td>Resembling a petal, especially as to color.</td>
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<tr>
<td>Petiole</td>
<td>The stalk of a leaf.</td>
</tr>
<tr>
<td>Pilose</td>
<td>With long soft hairs.</td>
</tr>
<tr>
<td>Pinnate</td>
<td>Leaves divided into leaflets or segments along a common stalk.</td>
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<tr>
<td>Pinnately</td>
<td>In a pinnate manner.</td>
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<tr>
<td>Pinnatifid</td>
<td>Pinnately cleft to the middle or beyond.</td>
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<tr>
<td>Pistil</td>
<td>The central or terminal organ in a flower, containing the young seeds.</td>
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<tr>
<td>Pistillate</td>
<td>With pistils but without stamens.</td>
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<td>Plumose</td>
<td>Having fine hairs on each side like a feather.</td>
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<td>Plumy</td>
<td>Feathery</td>
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<td>Pod</td>
<td>A dry fruit made up of one carpel and splitting along two sides.</td>
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<td>Pollen</td>
<td>The minute grains found in the anther.</td>
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<td>Puberulent</td>
<td>With very short hairs.</td>
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<td>Pubescent</td>
<td>With hairs</td>
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<td>Raceme</td>
<td>A more or less elongated axis bearing flowers with about equal pedicels.</td>
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<tr>
<td>Rachilla</td>
<td>The axis of a spikelet.</td>
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<tr>
<td>Rachis</td>
<td>The axis of a spike.</td>
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<td>Ray</td>
<td>One of the marginal flowers in the Asteraceae.</td>
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<td>Receptacle</td>
<td>The end of a flower stalk or axis bearing the floral organs, in the Asteraceae bearing flowers.</td>
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<td>Recurved</td>
<td>Bent back</td>
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<tr>
<td>Regular</td>
<td>Having the members of each part alike in size and shape.</td>
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<td>Reniform</td>
<td>Kidney-shaped</td>
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<tr>
<td>Resious</td>
<td>Bearing resin</td>
</tr>
<tr>
<td>Retrorse</td>
<td>Turned downward or backward</td>
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<td>Rhombic</td>
<td>In outline like a rhombus; obliquely four-sided.</td>
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<tr>
<td>Rootstock</td>
<td>An underground stem</td>
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<td>Rotate</td>
<td>Flat and circular in outline; wheel-shaped</td>
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<td>Rush-like</td>
<td>Resembling a rush</td>
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<td>Salverform</td>
<td>Having a slender tube, abruptly expanded into a flat limb</td>
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<td>Samara</td>
<td>A winged fruit</td>
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<td>Scabrous</td>
<td>Rough</td>
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<tr>
<td>Scale</td>
<td>A minute or much reduced leaf</td>
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<td>Scape</td>
<td>A leafless or nearly leafless stalk bearing a flower or a cluster of flowers and arising from the underground portion of a plant.</td>
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<td>Scuffy</td>
<td>With small bran-like scales on the epidermis</td>
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<td>Segment</td>
<td>One of the parts of a leaf or similar organ that is cleft or divided.</td>
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<td>Sepal</td>
<td>One of the outer set of flower leaves, usually green</td>
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<td>Serrate</td>
<td>With teeth projecting forward</td>
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<tr>
<td>Serrulate</td>
<td>Finely serrate</td>
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<td>Sessile</td>
<td>Without a stalk or pedicel</td>
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<tr>
<td>Sheath</td>
<td>The part of a leaf or leaf base which clasps or enucleates the stem.</td>
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<tr>
<td>Sheathing</td>
<td>A term applied to the manner in which the base of a leaf wraps the stem.</td>
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<tr>
<td>Shrub</td>
<td>A woody plant; smaller than a tree</td>
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<td>Simple</td>
<td>Of one piece, not compound</td>
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<tr>
<td>Sinuate</td>
<td>With strongly wavy margins</td>
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<tr>
<td>Spadix</td>
<td>A fleshy axis bearing sessile flowers</td>
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</table>
Spathe  A leaf-like structure standing below an inflorescence
Spatulate  Spoon-shaped, shaped like a spatula
Spike  An axis bearing sessile flowers
Spikelet  A small few-flowered spike, the flower cluster of grasses and sedges
Spine  A sharp, woody or rigid outgrowth from the stem
Spiny  Provided with spines
Spur  A hollow projection from the sepal or petal of a flower
Stamen  The organ of a flower which bears the pollen
Staminate  With stamens but without pistils
Staminoids  A stirele stamen
Standard  The large upper petal of the flower of the Pea Family
Stigma  The top of the pistil to which pollen grains become attached
Stipule  Outgrowths of, or appendages to, the base of a petiole
Strap-shaped  Long and narrow in outline
Style  The narrowed or pointed part of the pistil, bearing on its top the stigma
Stylopodium  A disk-like expansion at the base of the style, as in the Apiaceae
Submerged  Under water
Subtend  To stand below on the axis
Superior  Applied to an organ situated above another one
Sympetalous  Having or consisting of united petals
Syncarpous  Having or consisting of carpels joined together
Teeth  The regular projections along the margin of a leaf
Tendril  A slender coiling organ
Ternate  Consisting of three leaflets
Terrestrial  Growing on the ground
Thorn  A stiff sharp-pointed outgrowth from the bark or rind
Tomentose  Covered with dense, matted, wool-like hairs
Trailing  Creeping along the ground
Trifoliate  Having three leaflets
Truncate  Terminated by a nearly straight edge or surface
Twining  Winding spirally about a support
Umbel  A flower-cluster with all the pedicels arising from the same point
Umbellate  Borne in umbels
Unarmed  Without spines, thorns, or prickles
Valve  One of the portions into which some dry fruits split; a trapdoor-like opening in the pollen chambers of some anthers
Vestigial  Reduced almost to disappearance
Villous  With long soft hairs not matted together
Webby  With a tuft of slender, curly hairs
Whorl  A group of three or more similar organs, as leaves, radiating from the place of attachment
Whorled  Borne in a whorl
Wing  One of the two lateral petals of the flower of the Pea Family
Zygomorphic  Applied to a flower with petals of different form
## Index to Common Names

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