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LILIES AND ORCHIDS

LILIES AND ORCHIDS

A SERIES OF DRAWINGS IN COLOR OF
SOME OF THE MORE INTERESTING AND
BEAUTIFUL SPECIES OF THESE FAMILIES
TOGETHER WITH DESCRIPTIVE TEXT

BY

ROSINA C. BOARDMAN



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MDCDVI

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FOREWORD

In this little book, I have endeavored to set forth an informal sketch of three flower families growing in the United States, east of the Rocky Mountains, and in Canada, together with a few stray relatives from the Pacific slope, illustrated by faithful color studies of the more prominent examples.

R. C. B.

NEW YORK,
1916.

LILIES AND ORCHIDS

PLATE I

WOOD LILY

Lilium Philadelphicum

LILIES

THE Family of Lilies is one of the most interesting and one of the handsomest flower groups which we possess. At first it was very large, for many closely connected species were included; but it swelled to such dimensions that the botanists were forced to subdivide it more and more, until now it is comparatively small. The latest division (which every one has not yet adopted) is the grouping of the Bellworts, Hellebore, Blazing-Star and a few others in the Bunch-Flower Family; the Green-Briers and their climbing relatives in the Smilax Family; and the Asparagus, Solomon's Seal and those similar in the Lily-of-the-Valley Family. At present it is only with the latter and with the Lily Family Proper that we will concern ourselves.

THE LILY FAMILY

The Lily Family Proper is made up of leafy-stemmed herbs, growing from bulbs or corms. The leaves are always parallel-veined and simple. The flowers are regular and generally perfect, having a perianth of six even segments, sometimes connected; six stamens, with two-celled anthers, growing from the bases of the segments; and a three-celled pistil, with a generally three-lobed stigma, at the end of a long style. The fruit is an oblong capsule. The seed differs according to the variety.

PLATE I

WOOD LILY, RED LILY, *Lilium Philadelphicum*.
Root.—A bulb of fleshy scales. **Stem.**—Simple, 1^o-3^o high. **Leaves.**—Narrow, pointed, in whorls. **Flowers.**—Large, showy, erect, 1-5, terminal, scarlet and orange. **Perianth.**—Of broad segments, narrowing below, purple-dotted within. **Stamens** (*a*).—Dark red. **Pistil** (*b*).—With a head-like stigma. **Seeds.**—Long, with narrow wings.

This is one of our most showy and beautiful flowers. It grows in dry woods and salt marshes, from Canada to North Carolina, from June to August. I have found very small specimens, not over 5' high, on Nantucket Island.



PLATE I. Petals labeled from Life Size

Wood Lily *Lilium Filiculis*

PLATE II

WILD MEADOW LILY

Lilium Canadense

WESTERN RED LILY, *L. umbellatum*, is much like the Wood Lily, but smaller and more slender, with linear leaves. It blooms in dry soil during June and July, from Ohio to Northwest Territory and south to Arkansas.

SOUTHERN RED LILY, *L. Catesbaei*, is much the same, with slender, small, alternate leaves and recurved, pointed segments. It grows in wet ground in summer, from North Carolina to Florida.

PLATE II

WILD YELLOW LILY, FIELD LILY, CANADA LILY, *Lilium Canadense*. **Root.**—Bulbous. **Stem.**—Simple, 2°-5° high, stout. **Leaves.**—Lanceolate, in whorls. **Flowers.**—Terminal, 1-16, drooping on long recurved stalks, bright yellow and orange, purple-dotted. **Perianth.**—With recurved segments (not narrowing below). **Stamens** (*a*).—Red-brown. **Pistil** (*b*).—With a three-lobed, head-shaped stigma. **Seeds.**—Flat, horizontal, numerous.

These gorgeous flowers bloom in early summer, in fields and swamps, from Nova Scotia to Alabama and west to the Mississippi. They might indeed be "the lilies of the field" of the New Testament, for the glory of Solomon would pale beside them. To see a field of them waving their golden bells above the tall grasses is a sight to be remembered. There are many such fields in the Berkshire Hills.

Lest we come to think that the brilliant lilia are the only important members of this family, we will stop here to mention four small genera.

LEUCOCRINUM, *Leucocrinum montanum*, is a low Western herb, with long, grass-like inner leaves and scale-like outer ones, all from the root. The flowers are white, tube-shaped below, divided and salver-shaped above. The anthers are coiled. It blooms in late spring.

ANDROSTEPHIUM, *Androstephium coeruleum*, is somewhat the same, with blue flowers in an umbel, on a long scape. The anthers are straight. It grows on prairies, from Kansas southward, in early spring.



PLATE II. — *Lilium Canadense*. From Life Size.

Canada Lily. *Lilium Canadense*.

PLATE III
TURK'S CAP LILY
Lilium superbum

WILD HYACINTH, *Quamasia hyacinthina*, is an herb, with grass-like root-leaves and a tall scape of blue or white, racemed flowers, with narrow, separate segments. It grows along streams, from Pennsylvania to Alabama and west to Minnesota, in spring.

STAR-OF-BETHLEHEM, *Ornithogalum unbellatum*, is somewhat the same, with flowers, white within and green without, clustered in a corymb. The leaves have a light midrib.

DROOPING STAR-OF-BETHLEHEM, *O. nutans*, has nodding, white, racemed flowers.

These both bloom in late spring and are Europeans escaped from gardens.

PLATE III

TURK'S-CAP LILY, *Lilium superbum*. **Root.**—A globe-like bulb. **Stem.**—Simple, stout, 3°-8° high. **Leaves.**—Lanceolate, in whorls or alternate. **Flowers.**—Terminal, 3-40, nodding on long flower-stalks, large, showy, orange-red, purple-dotted. **Perianth.**—Of lanceolate segments, strongly recurved. **Stamens (a).**—Burnt-orange-red. **Pistil (b).**—With a head-like stigma. **Seeds.**—Flat, numerous, horizontal.

This giant among flowering herbs gives to a midsummer meadow or marsh a truly regal splendor. It is much more beautiful than the Tiger-Lily, which it resembles, for it is much more elegant in line and color. Authorities disagree about the color. I have always found it red. It ranges from Maine to North Carolina and west to Minnesota.

TIGER-LILY, *L. tigrinum*, is like the Turk's-Cap, but yellower and coarser. Its stem is stout and almost black, with bulblets growing in the axils of the leaves. It is a native of China and Japan, escaping from gardens in this country and blooming in summer.

CAROLINA LILY, *L. Carolinianum*, is also like the Turk's-Cap, with orange-red, nodding flowers and recurved, pointed segments. It is smaller and more slender, and blooms south of Virginia in August.

Although I am not speaking of many far Western flowers, I cannot refrain from picturing two charming Californians, the Yosemite Tiger-Lily and the Washington Lily.



PLATE III - Reduced about 1/4 from Life Size

Turk's Cap Lily, *Lilium apertum*

PLATE IV

YOSMITE TIGER-LILY

Lilium parvum

PLATE IV

YOSEMITE TIGER LILY, *Lilium parvum* (Kellogg).
Root.—Bulbous and fibrous. **Stem.**—Simple, 3^o-8^o
 high. **Leaves.**—Ovate, pale green, thinner than other
 lilies, in whorls or alternate above. **Flowers.**—Small,
 $\frac{3}{4}$ '-1' long, several-flowered, on long, undulating flower-
 stalks, scarlet and orange, purple-dotted. **Perianth.**—
 Of oval segments, slightly recurved. **Stamens** (*a*).—
 Dark red. **Pistil** (*b*).—With a head-like stigma.
Seeds.—Flat.

The small, gem-like flowers of this beautiful little lily,
 waving on their long stalks, are particularly attractive.
 I found them in early August on the upper trails of the
 Yosemite Valley, growing amid tall grasses and small
 shrubs.

ASA GRAY'S LILY, *L. Grayi*, seems to be rather like the
 last, with larger flowers and stiffer leaves. It blooms in
 July and August, on the peaks of Virginia and North
 Carolina.

Two genera, not immediately recognisable as lilies,
 follow:

GRAPE-HYACINTH, *Muscari botryoides*, is an herb
 with long, grass-like leaves from the root, and a short,
 thick raceme of very small, blue, slightly fragrant flowers.
 The flowers have a globular, one-pieced perianth, with
 six small teeth. The clusters much resemble a bunch
 of grapes, hence the name.

STARCH GRAPE-HYACINTH, *M. racemosum*, is similar,
 with narrower leaves and oblong, starch-scented flowers.

Both these plants are Europeans escaped from gardens,
 and bloom in spring.

STAR GRASS, COLIC-ROOT, *Alectris farinosa*, has a
 rosette of pale, lanceolate leaves at the root and a tall
 scape topped by a long raceme of small, floury-looking,
 bell-shaped flowers, erect, roughish, and white, with a six-
 toothed, one-pieced perianth. This plant grows east of
 the Mississippi in early summer. A yellow form of it
 sometimes appears South.

YELLOW COLIC-ROOT, *A. aurca*, is similar. It has
 shorter leaves and shorter yellow flowers. It blooms
 south from New York in early summer.



PLATE V

WASHINGTON, D. C.

Lilium Washin. goniana

PLATE V

WASHINGTON LILY, *Lilium Washingtoniana*. **Root.**—As other lilies. **Stem.**—Simple, 4^o–8^o high. **Leaves.**—Small, in whorls or alternate above. **Flowers.**—Large, in a terminal cluster, white, finely dotted with purple and pink. **Perianth.**—Of narrowly oblong, blunt segments, somewhat recurved. **Stamens** (*a*). **Pistil** (*b*).—With a head-like stigma.

These charming white flowers on their tall, stiff stems are as much more delicate than the Bermuda lilies as the Turk's-Caps are than the Tiger-Lilies. I found them growing in the primeval forests of the Mariposa, in California, in July.

DAY-LILY, *Hemerocallis julva*, together with the YELLOW DAY-LILY, *H. flava*, are summer foreigners escaped from our gardens. They have large, grass-like, channelled root-leaves and tawny-orange or yellow flowers, growing several on a scape.

The GARLICS or ONIONS also belong to the Lily Family. They all have round or oval, odorous bulbs, root-leaves, and small, separate-segmented flowers growing at the summit of a scape in a many-flowered umbel. Beneath are 2–3 membranous bracts. They are not attractive plants.

WILD LEEK, *Allium tricoccum*, has elliptic, early fading leaves and white flowers. It blooms in early summer, east of the Mississippi and north of North Carolina.

CHIVES, *A. Schoenoprasum*, is a Northern variety, with hollow, linear leaves and pink flowers.

NODDING WILD ONION, *A. cernuum*, has nodding, white, rose or purple flowers and flat, channelled, linear leaves. It ranges over most of the United States and Canada.

PRAIRIE WILD ONION, *A. stellatum*, is much the same, with rose-colored, erect flowers. It blooms in summer, on the Western plains.

WILD GARLIC, FIELD GARLIC, CROW GARLIC, *A. vineale*, is a troublesome weed from Europe, naturalized in the Middle States. It has hollow leaves and purple and green flowers, sometimes replaced by bulblets, tipped with a long hair-like appendage.

PLATE VI

YELLOW ADDER'S TONGUE
Erythronium Americanum

MEADOW GARLIC, *A. Canadense*, is similar, with white or pink flowers and a fibrous bulb, as have those following. This blooms east of the Mississippi.

WILD ONION, *A. mutabile*, has flat, linear leaves and white or pink flowers without bulblets. It grows South and West in early summer.

NUTTALL'S WILD ONION, *A. Nuttallii*, has very narrow, short leaves and white or rose flowers. It grows in spring, on the Western prairies.

FRASER'S WILD ONION, *A. reticulatum*, is similar. It blooms in summer, west of the Mississippi.

YELLOW FALSE GARLIC, *Nothoscordum bivalve*, is much like the Alliums, but lacks their scent, and has yellow flowers. It blooms South and West in early spring and summer.

PLATE VI

YELLOW ADDER'S-TONGUE, DOG'S-TOOTH VIOLET, *Erythronium Americanum*. **Root.**—A corm. **Stem.**—Simple, 6'-1° high. **Leaves.**—Oblanceolate, smooth, generally mottled with brown, 2, opposite, or 1 on the flowerless plants. **Flowers.**—Large, solitary, terminal, pale yellow, rarely purplish or white, dotted. **Perianth.**—Of linear, slightly recurved segments. **Stamens** (*a*). **Pistil** (*b*).—With a three-lobed stigma.

This dainty little lily, with its drooping flower and mottled leaves, carpets acres of moist woodland, from Nova Scotia to Florida and west to Arkansas, from March to May. The name Dog's-Tooth Violet is particularly inappropriate.

WHITE ADDER'S-TONGUE, *E. albidum*, is similar, with white, bluish or purplish flowers. It flourishes west of the Mississippi, but is not common East.

MIDLAND ADDER'S-TONGUE, *E. mesachorum*, grows with the last. It has narrower leaves, not mottled, and lavender flowers.

MINNESOTA ADDER'S-TONGUE, *E. propullans*, blooms in May. It has smaller pink blossoms and slightly mottled leaves.

PURPLE FRITILLARIA, *Fritillaria atropurpurea*, is a lily with alternate, linear leaves and bell-shaped, nodding,



PLATE VI. Life size

Yellow Adonis *Erythronium americanum*

PLATE VII

A

NUTTALL'S MARIPOSA LHY

Calochortus Nuttallii

B

GUNNISON'S MARIPOSA LHY

Calochortus Gunnisoni

purple or purplish-green flowers with separate segments. It blooms in early summer, from North Dakota and Wyoming westward.

PLATE VII, A

NUTTALL'S MARIPOSA LILY, *Calochortus Nuttallii*. **Root.**—A corm. **Stem.**—Branched, slender, 3'-15' high. **Leaves.**—Grass-like, alternate. **Flowers.**—Large, showy, white. **Perianth.**—The three outer segments (or sepals) are lanceolate, greenish-white; the three inner (or petals) are rather wedge-shaped and recurved, white or lavender, with a yellowish base, above which is a purple spot. **Stamens** (*c*).—Arrow-shaped. **Pistil** (*d*).—With a three-lobed stigma.

So graceful and ethereal is this fair flower, swaying on its slender stalk among the tall grasses, that it seems almost unearthly. It blooms from South Dakota west to California, from June to August.

PLATE VII, B

GUNNISON'S MARIPOSA LILY, *C. Gunnisoni*. **Root.**—A corm. **Stem.**—Often simple, as above. **Leaves.**—As above, with incurved edges. **Flowers.**—Large, showy, white. **Perianth.**—The sepals as above, the petals white or lavender, with a purple band across the centre within, yellowish and hairy below. **Stamens** (*a*).—With oval anthers. **Pistil** (*b*).—With a three-lobed stigma.

This plant is much like its Mariposa sister. It grows as far south as New Mexico and blooms in midsummer, as does the other. I found it in a meadow in the Canyon of the Grand, near Glenwood Springs, Colorado.

Another Western genus is the *Yucca*, which has hollow, spike-like leaves, with fibrous threads hanging from their margins. The flowers are large, creamy-white, have separate segments, and droop from a tall, dense, terminal cluster. They bloom in spring and early summer.

SPANISH BAYONET, *Yucca baccata*, is the largest. It is sometimes 8° high. Its flowers are very large and its fruit edible.



FIG. 1. *Mariposa lily* (Liliaceae).

A. Nuttall's Mariposa Lily, *C. nuttallii* (Nutt.)

B. Gunnison's Mariposa Lily, *C. gunnisonii* (Gray) Wats.

PLATE VIII

YELLOW CLINTONIA

Clintonia borealis.

BEAR-GRASS, *Y. glauca*, is smaller and much shorter.

These plants both grow on the dry Western prairies.

ADAM'S NEEDLE, *Y. filamentosa*, has lanceolate, flat leaves. It is cultivated, and has escaped in places. It grows wild in Florida, Louisiana, and Tennessee.

LILIES-OF-THE-VALLEY

THE Lily-of-the-Valley Family grows from rootstocks, never from bulbs or corms. The leaves are simple, parallel-veined and broad, except in the Asparagus and its allies, where they are reduced to short, thread-like scales with tiny branchlets in the axils. The flowers grow in racemes, umbels, panicles or are solitary; they are regular and perfect. The perianth is either divided into four to six segments, or is in one piece, with six lobes or teeth. The stamens grow from the perianth. The pistil has a two to three-celled ovary, and a style with a generally three-lobed stigma. The fruit is a fleshy berry with few or numerous seeds.

Several members of this group so much resemble the Lily Family Proper, that at first sight it is difficult to distinguish them.

PLATE VIII

YELLOW CLINTONIA, *Clintonia borealis*. **Root.**—A slender rootstock. **Stem.**—A simple scape, 6'-15' high. **Leaves.**—Large, 2-5, oval, smooth. **Flowers.**—Lily-like, 3-6 in an umbel, drooping, greenish-yellow. **Perianth.**—Of six recurved segments. **Stamens** (*a*).—Six. **Pistil** (*b*).—With a two-celled ovary. **Fruit.**—A bright-blue berry.

The pale-yellow bells and bright leaves of the Clintonia decorate many moist woodlands, from Newfoundland south to North Carolina and west to Minnesota, during May and June. Sometimes a flower is borne on the scape, below the umbel.

WHITE CLINTONIA, *C. umbellulata*, is rather taller



PLATE 1. 1900. *St. ...*

... ..

and woolly, with smaller, white, purple-dotted, erect, odorous flowers, a small leaf on the scape, and black, round berries. It ranges from New York to Georgia in May and June.

ASPARAGUS, *Asparagus officinalis*, is a native of Europe, escaped from cultivation in various parts of the country. The young shoots make the delicious vegetable, which we all know. The small, thread-like leaves of the plant do not look like the lily tribe, but the bell-like, drooping, greenish flowers, with their six small segments, point the way. The fruit is a scarlet berry. The plant blooms in early summer and again in autumn.

PLATE IX, A

FALSE SOLOMON'S SEAL, WILD SPIKENARD, *Vagnera racemosa* (*Smilacina racemosa*). **Root.**—A thick, scarred rootstock. **Stem.**—Curved, simple, 1°-3° high. **Leaves.**—Oval, sessile, alternate, finely woolly. **Flowers (a).**—In a densely flowered, terminal panicle, small, creamy-white. **Perianth.**—Of six oblong segments. **Stamens (b).**—Six. **Pistil (c).**—White. **Fruit.**—A red berry speckled with purple.

These feathery tassels of creamy flowers grow profusely, from May to July in rich woods or thickets, across the continent.

V. amplexicaulis is similar, with clasping leaves and a longer style. It grows westward.

PLATE IX, B

STAR-FLOWERED SOLOMON'S SEAL, *V. stellata*. **Root.**—A stout, fleshy rootstock. **Stem.**—Stout, erect, 8'-20' high. **Leaves.**—Veiny, sessile, somewhat clasping, oblong lanceolate. **Flowers (d).**—In a few-flowered, terminal raceme, star-shaped, larger than *V. racemosa*, white. **Perianth.**—Of six oblong segments. **Stamens (e).**—Six. **Pistil (f).**—White. **Fruit.**—A black or green berry with six black stripes.

This plant is stouter and less graceful than its sister, *V. racemosa*, but its star-like flowers are more attractive.



PLATE 200

A. 1899

B. 1899 (A. 1899)

PLATE X
SOLOMON'S SEAL
Polygonatum biflorum

It has much the same range as the other, but it blooms in moist soil.

Unifolium liliaceum may be a distinct species. It is similar and has conspicuously folded leaves, and ranges west from the Black Hills.

THREE-LEAVED SOLOMON'S SEAL, *Vagnera trifolia*, is smooth, small and slender, with 2-4 leaves and a few-flowered raceme of larger white flowers. It ranges from Newfoundland, south to Pennsylvania and west to Michigan, in bogs and wet woods.

These plants all flower in May or June.

PLATE X

SOLOMON'S SEAL, *Polygonatum biflorum*. **Root.**—A fleshy rootstock, with round scars from last year's growth. **Stem.**—Simple, arched, 8'-3° high. **Leaves.**—Oval, alternate, woolly beneath. **Flowers.**—Drooping, in clusters of 1-4, from the axils of the leaves, yellowish or greenish-white. **Perianth.**—In one bell-shaped piece, six-toothed. **Stamens (a).**—Six, growing on the perianth. **Pistil (b).**—With a head-like stigma. **Fruit.**—A dark blue or black berry.

The rootstock gives the Solomon's Seal its quaint name; for the round scars, left from last season's growth, look somewhat like the imprint of a seal. This graceful plant is found in woods from New Brunswick to Florida and west to Michigan. It blooms in spring.

SMOOTH SOLOMON'S SEAL, *P. commutatum* (*P. giganteum*), is similar, but smooth and generally much larger, sometimes reaching 8° in height. The clusters have generally more blossoms. It blooms somewhat later than the other, in moist woods, all over the country.

CLASPING-LEAVED TWISTED-STALK, *Streptopus amplexifolius*, rather resembles the Solomon's Seals. It has a twisted branching stem and alternate, clasping, oval leaves. The flowers are bell-shaped, with separate segments, greenish-white, and droop singly or in pairs, from the axils of the leaves. The fruit is a red berry. It blooms in moist woods, across the continent.

SESSILE-LEAVED TWISTED-STALK, *S. roseus*, is much the same, save that the leaves are not clasping and the



PLATE XI

INDIAN CUCUMBER ROOT

Melotha Virginiana

flowers are pink. This plant ranges with its sister. They both bloom in early summer.

HAIKY DISPORUM, *Disporum lanuginosum*, resembles the last. It is a finely hairy herb, with 1-3 terminal, greenish, erect flowers and an oval, red berry. It grows in the woods, through Ontario and the Eastern-coast States, and blooms in late spring.

ROUGH-FRUITED DISPORUM, *D. trachycarpum*, is similar, with roughish, leathery fruit and yellowish-white flowers. It blooms from May to August across Canada and west of the Mississippi.

FALSE LILY-OF-THE-VALLEY, *Unifolium Canadense* (*Maianthemum Canadense*), is a smooth little plant with 1-3 oval, alternate, shining leaves and a terminal raceme of small, creamy-white flowers with four segments and four stamens. It has an odor rather like the true Lily-of-the-Valley, but fainter. The berry is pale red and speckled. It blooms in late spring, from Newfoundland to North Carolina and west to South Dakota.

Convallaria majalis is the true **LILY-OF-THE-VALLEY**. It has the 2-4 oblong leaves from near the root and the scape of bell-shaped, six-lobed, white, fragrant flowers with which we are so familiar. It grows wild on high mountains in Virginia and the Carolinas and is common in cultivation. It blooms in May and June.

PLATE XI

INDIAN CUCUMBER ROOT, *Medeola Virginiana*. **Root**.—A short, fleshy rootstock. **Stem**.—Simple, 1°-2½° high. **Leaves**.—Broadly lanceolate, in two whorls; the lower at the middle of the stem and the upper at the apex just beneath the flowers. **Flowers**.—In a terminal, few-flowered umbel, on stalks which are bent for the flower and erect for the fruit. **Perianth** (*a*).—Of six greenish yellow oval segments. **Stamens** (*b*).—Six, with orange anthers. **Pistil** (*c*).—With three long recurved reddish-brown, thread-like stigmas. **Fruit**.—A dark-purple berry.

This odd-looking plant grows in moist woods from Nova Scotia to Florida and west to Minnesota. It blooms in early summer. Its berries are more showy



PLATE XI. Reduced $\frac{1}{2}$ from Life Size

Indian Cucumber Root, *Medeola Virginiana*

PLATE XII

WHITE IRILLIUM

Trillium grandiflorum

than its flowers. The long stigmas of the latter give them an insect-like appearance.

PLATE XII

WHITE TRILLIUM, *Trillium grandiflorum*. **Root.**—A short, scarred rootstock. **Stem.**—Simple, stout, 8'–18' high. **Leaves.**—Broadly ovate, three in a whorl at the centre of the stem. **Flower.**—Solitary, large, erect, white or purplish-pink. **Perianth.**—Of three green, lanceolate sepals and three white, oblanceolate, erect, spreading petals. **Stamens (a).**—Six, with anthers longer than the filaments. **Pistil (b).**—With a three-angled ovary and three stigmatic styles. **Fruit.**—A round, black berry.

The large, triangular blossoms of these trilliums brighten many acres of woodland, shining like stars among the Bellworts and Solomon's Seals, in May or June, east of the Mississippi. A monstrous form of this, with only two leaves, was found in Michigan.

NODDING TRILLIUM, *T. cernuum*, is similar, with a smaller, white, nodding flower. It blooms over the same range a little earlier.

PAINTED TRILLIUM, *T. undulatum* (or *T. erythrocarpum*), is slightly larger and blooms over the same time and range as the last. It has an erect, white flower streaked with purple or red.

EARLY TRILLIUM, *T. nivale*, is much smaller, with petioled leaves and an erect, white flower. It appears in early spring, from Pennsylvania to Minnesota and south to Kentucky.

PRAIRIE TRILLIUM, *T. recurvatum*, is a little larger, having a sessile, erect flower, with recurved sepals and frequently blotched leaves. It ranges south from Minnesota through the Middle States.

SESSILE-FLOWERED TRILLIUM, *T. sessile*, has sessile leaves and flowers. The leaves are often blotched, and the flowers are purple or green and fragrant. It ranges from Pennsylvania south and west to the Mississippi.

WAKE-ROBIN, BIRTH ROOT, *T. erectum*, has a purple-red or pink or greenish, unpleasantly scented flower on a stalk rising above the sessile leaves. It ranges east of the Mississippi.



PLATE XIII

CORAL ROOT

Crataegus corallorhiza

THE ORCHIS FAMILY

THE orchids are more nearly related to the lilies than to any other family. In fact, their roots, stems, and leaves might often be mistaken for that tribe. The leaves are always parallel-veined, never compound, frequently grass-like, and are sometimes reduced to scales.

The form of the flower is the distinctive feature of the orchid. The calyx and corolla are very irregular and it is often difficult to distinguish them. They are divided into six segments, three sepals, and three petals. One of the petals is called the *Lip* and is generally more showy than the others. Sometimes this lip is cut or fringed, sometimes it is furnished with a spur, and often it is most grotesque in form or color. The most characteristic thing about the flower, however, is the *Column*. This is the ovary, surmounted by the style, bearing the stigma and the one or two anthers (or pollen sacs of the stamen) balanced each side of the stigma, or just above or below it. The pollen of the orchid grows in sticky masses. When disturbed by an insect, it is removed in one piece and deposited on the stigma of a neighboring blossom. The ovary is long and generally twisted and the seeds are very numerous and dust-like. The orchid is especially adapted to cross-fertilization.

PLATE XIII

CORAL ROOT, *Corallorhiza corallorhiza*. Root.—Fleshy, coral-like. **Stem.**—4-12', simple. **Leaves.**—Reduced to 2-5 scales. **Flowers.**—Greenish or dull purple, small, in racemes 1'-3' long, 3-12 flowered. **Perianth.**—Of five narrow sepals and petals and a short, whitish lip with a short spur. **Column (1).**—Incurved, winged above. The anthers (*a*) above the stigma (*b*). Ovary (*c*).

This insignificant little herb ranges over most of the United States. It blooms from May to June.

WISTER'S CORAL ROOT, *C. Wisteriana*, MANY-FLOWERED CORAL ROOT, *C. multiflora*, and STRIPED CORAL ROOT, *C. striata*, are much the same, but larger, with slightly more showy lips.



PLATE X. II. (continued)

Coniferous, *Conifer*, *Pinus*, *Pinus*

PLATE XIV

A
LEAF'S TRESSES

Gyrostachys cornuta (*Spiranthes cornuta*)

B

GRASS LEAF LEAF'S TRESSES

Gyrostachys praecox

SMALL-FLOWERED CORAL ROOT, *C. odorhiza*, is much smaller.

CRESTED CORAL ROOT, *Hexaletris aphyllus*, is a large Southern, purple-brown genus much like these last.

LARGE TWAYBLADE, *Leptochis liliifolia*, an early summer orchid, has showy, purplish-green flowers, in a terminal raceme, with two large, bright leaves from the root. It flourishes east of the Mississippi.

LOESEL'S TWAYBLADE, *L. Loeselii*, is a smaller, more Northern species.

BROAD-LIPPED TWAYBLADE, *Listera convallarioides*, HEART-LEAVED TWAYBLADE, *L. cordata*, and SOUTHERN TWAYBLADE, *L. australis*, have small flowers with lips, long in proportion, and bear their two leaves opposite at the centre of their stems. They grow in woods and bogs from the Northern States southward.

PLATE XIV, A

LADIES' TRESSES, *Gyrostachys cernua* (*Spiranthes cernua*). **Root.**—Fleshy, forked. **Stem.**—6'-25' high, simple. **Leaves.**—Grass-like, turning above to pointed bracts. **Flowers.**—White or yellowish, fragrant; deflexed in a twisted, terminal, bracted spike. **Perianth.**—Of four divisions. The upper sepal connected with the two arching petals. The lip crinkled. **Column (c).**—Arched, bearing the anthers (*a*) at the back. The stigma (*s*) has a beak which covers the anther. Ovary (*o*).

A dainty little plant blooming in meadows and swamps, from August to October, east of the Mississippi. It has a lily-of-the-valley like fragrance. Its plaited appearance gives it its common name.

PLATE XIV, B

GRASS-LEAVED LADIES' TRESSES, *G. praecox*. **Root, Stem, Leaves.**—Much as above, but smaller and more slender. **Flowers.**—Like *G. cernua*, but smaller and in a more spiral spike. **Perianth and Column.**—As above.

This plant grows, in late summer, from New York southward.

HOODED LADIES' TRESSES, *G. romanzoffiana*, WIDE-LEAVED LADIES' TRESSES, *G. plantaginea*, and FRAGRANT



PLATE XIV. Reduced about $\frac{1}{2}$ from Life Size.

- A Ladies' Tresses, *Gyrostachys cernua*
B Grass-leaved Ladies' Tresses, *Gyrostachys fragilis*



PLATE XV

ARTEUSA

Arthusa bulbosa

LADIES' TRESSES, *G. odorata*, are described by their names.

LITTLE LADIES' TRESSES, *G. simplex*, and SLENDER LADIES' TRESSES, *G. gracilis*, are smaller and have 2-3 early fading root-leaves and later only bracts.

CALYPSO, *Calypto bulbosa*. **Root.**—A bulb. **Stem.**—Simple, 3'-6' high. **Leaves.**—One, roundish with a heart-shaped base. **Flower.**—Solitary, terminal, showy, variegated purple, pink and yellow. **Perianth.**—Of linear, erect or spreading sepals and petals, the lip sac-shaped, drooping, with a patch of yellow wool. **Column.**—Petal-like above, with a lid-like anther above the stigma.

A fascinating little nymph who appears in early summer, in bogs, from Labrador to Vermont and west to California and Arizona. At first sight it resembles a small lady's-slipper.

PLATE XV

ARETHUSA, *Arethusa bulbosa*. **Root.**—A bulb. **Stem.**—Simple, 5'-10' high, rather stout, set with bracts. **Leaves.**—Solitary, linear, appearing after the flower. **Flower.**—Solitary, terminal, large, showy, rose-purple. **Perianth.**—Of oval sepals and petals, erect or arched over the column. The lip is notched, fringed, streaked, and crested with yellow or white, hairy ridges. **Column (C).**—Petal-like, winged and curved above with the anther (*a*) and stigma (*s*), which are borne on its lower face. Ovary (*o*).

This dainty orchid, surprised in its native bogs, in May or June, reminds one of a startled fawn, by its two erect, ear-like sepals. It ranges from Newfoundland to South Carolina and west to Indiana; but owing to its inveterate enemy, the flower-picker, it has become rather rare.

HELLEBORINE, *Epipactis viridiflora*, is a stout herb, 1°-2° high, with ovate, clasping leaves and a bracted raceme of greenish-purple or yellow flowers. It has an undulating lip and pointed sepals and petals. It blooms near Toronto and in western New York in July and August.

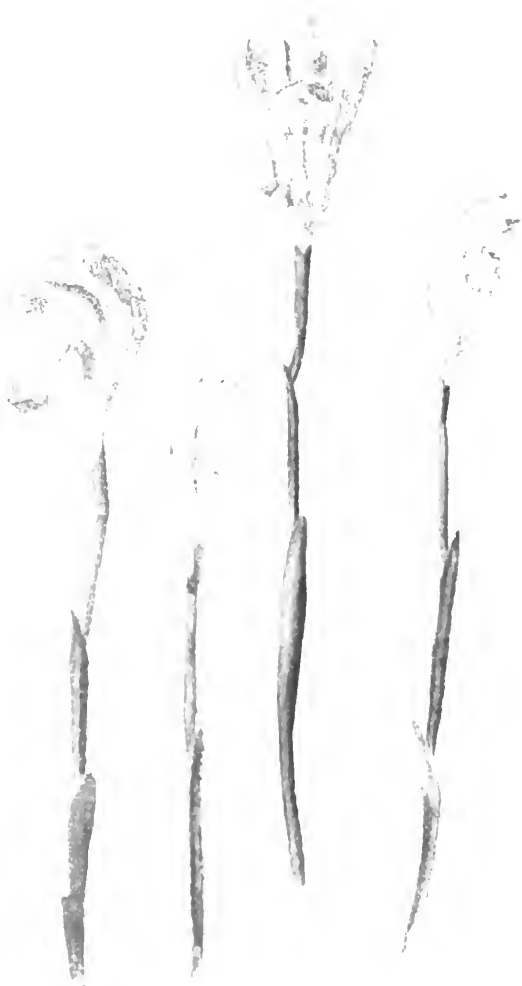


PLATE XVI

GRASS PINK

Limonium tuberosum (= *Calopogon pulchellus*)

CRANE-FLY ORCHIS, *Tipularia unifolia*, is a rather rare little summer orchid, with purplish-green, long-spurred, racemed blossoms. It bears one leaf after the flowers.

PUTTY-ROOT, ADAM AND EVE, *Aplectrum spicatum*, is a Western spring orchid, with rather large, yellowish-brown and purple flowers and an autumnal leaf.

PLATE XVI

GRASS PINK, CALOPOGON, *Limnorum tuberosum* (*Calopogon pulchellus*). **Root.**—A round, solid bulb. **Stem.**—Slender, simple, 1° - $1\frac{1}{2}^{\circ}$ high. **Leaf.**—One, grass-like. **Flowers.**—Showy, in a few-flowered, terminal raceme, rose-purple. **Perianth.**—Of ovate sepals and petals, and an erect, pale-pink lip, with a tuft of yellow wool. **Column** (*A*).—Petal-like above, winged, spreading horizontally. The anther (*a*) is attached to the back of the column. The stigma (*s*) is beneath. Ovary (*o*).

This dainty plant waves its blossoms among the tall grasses of the wet marshes, in June and July, from Newfoundland to Florida and west to Minnesota. This orchid's peculiarity is an ovary which is not twisted, so consequently, the lip is on the upper instead of on the lower side of the flower.

RATTLESNAKE PLANTAIN, *Pteridium repens* (*Goodyera repens*), is a small orchid, with a rosette of ovate, green and white blotched leaves at the base of the stem, and a one-sided spike of small, greenish-white flowers, with a sac-shaped lip.

DOWNY RATTLESNAKE PLANTAIN, *P. pubescens*, is woolly, with a thicker spike (not one-sided).

These two range on the Atlantic coast and west to Minnesota.

MENZIES' RATTLESNAKE PLANTAIN, *P. Menziesii*, is sometimes without the white mottling. It has a swelling, pointed lip (not sac-shaped), and the spike is somewhat one-sided. It grows in Canada and on the Western coast.

These all bloom in July and August and are insignificant except for their showy leaves.

SHOWY ORCHIS, *Orchis spectabilis*. **Root.**—Fibrous. **Stem.**—Stout, five-angled, $4'$ - $12'$ high. **Leaves.**—Large,



PLATE XVI. *Rhodod. ...* (from Life)

Grass pink, *Zinnia ...*

PLATE XVII

ROSE-POGONIA

Pogonia aphroglossoides

two from near the base of the stem, obovate, clammy. **Flowers.**—Showy, in a 3-6 flowered, terminal raceme, violet-purple, pink and white. **Perianth.**—Sepals joined in an arch, petals beneath, lip whitish and spurred. **Column.**—Violet at the back, with the stigma between the two anthers.

This is the earliest of the orchids. It grows in rich woods in the eastern half of the continent.

SMALL ROUND-LEAVED ORCHIS, *O. rotundifolia*, is more slender, with smaller rose-colored and white flowers and one oval leaf. It blooms in early summer, in the damp woods of Canada and the Northern States.

WHITE ADDER'S MOUTH, *Achroanthes monophylla*, and **GREEN ADDER'S MOUTH, *A. unijolia*,** are two small orchids with insignificant flowers and one roundish leaf. They bloom in woods in July. Usually the first in the North, the second in the South also.

PLATE XVII

ROSE POGONIA, SNAKE-MOUTH, *Pogonia ophioglossoides*. **Root.**—Branching. **Stem.**—Simple, 8'-15' high. **Leaves.**—1-2, pale, lanceolate, erect. **Flowers.**—Large, solitary or in pairs, terminal, nodding, having a leaf-like bract beneath, pale rose-pink. **Perianth.**—With oval, equal sepals and petals. The lip fringed, crested, and streaked with yellow and purple. **Column (A and B).**—Club-shaped, with a lid-like anther (*a*) capping the stigma (*s*). Ovary (*o*).

A dainty, fragrant flower growing in swamps and meadows with the wild Cranberry and the Calopogon. It blooms in June or July.

SPREADING POGONIA, *P. divaricata*, is somewhat the same, but larger; the sepals are linear and dark-colored and longer than the flesh-colored, lanceolate petals. We find it in swamps in July.

NODDING POGONIA, *P. trianthophora*, is smaller, with little, ovate, alternate leaves and pale-purple, drooping, axillary flowers. It appears in late summer.

WHORLED POGONIA, *P. verticillata*, bears its leaves in a whorl, above which is the drooping flower, with its



PLATE III. R. 100. O. 7. *Temple's*

Rose Pogon... *Pogon* *phloglossoides*

PLATE XVIII

A

LONG BRACLED ORCHIS

Habenaria bracteata

B

TALL FLAWY GREEN ORCHIS

Habenaria hyperborea

C

INTERMEDIATE BOG ORCHIS

Habenaria media

long, dark-purple sepals and oval, greenish-yellow petals. This appears in May or June.

These four varieties range east of the Mississippi.

SMALLER WHORLED POGONIA, *P. affinis*, is similar, but smaller, frequently with two greenish-yellow flowers, with equal sepals and petals. It is a rare local plant, blooming in June in Connecticut, New York, and New Jersey.

PLATE XVIII, A

LONG-BRACTED ORCHIS, *Habenaria bracteata*. **Root.**—Fibrous. **Stem.**—Simple, 6'-2° high. **Leaves.**—Lanceolate or oval, alternate, turning to long bracts beneath each flower. **Flowers** (*a*).—Small, greenish, in a loose-flowered, terminal raceme. **Perianth.**—With oval spreading sepals and narrow petals. A much longer lip, with a small spur. **Column** (*b*).—With two anthers (*s*) above the stigma (*p*).

None of the green orchids are showy. This is one of the least insignificant. It grows in woods and meadows from New Brunswick to the Rockies and south to North Carolina. We find it all summer.

PLATE XVIII, B

TALL LEAFY GREEN ORCHIS, *H. hyperborea*. **Root.**—Fibrous. **Stem.**—Simple, 8'-3° high. **Leaves.**—Lanceolate, alternate. **Flowers** (*d*).—Small, in a terminal raceme, yellowish-green. **Perianth.**—With ovate sepals and petals, and a lanceolate lip, with a spur of the same length. **Column.**—Anthers above the stigma.

This little orchid grows across the continent, north from New Jersey, Colorado and Oregon, from May to August. I found it in the Yellowstone Park.

PLATE XVIII, C

INTERMEDIATE BOG ORCHIS, *H. media*. **Root.**—Fleshy. **Stem.**—Simple. **Leaves.**—Lanceolate, acute. **Flowers** (*c*).—Small, in a densely flowered terminal raceme, greenish or purplish. **Perianth.**—Like the last, only the spur is much longer than the lip. **Column.**—As above.

This orchid resembles *H. hyperborea*. It ranges from

- A. Long bracted Orchis (*Habenaria longibractea*)
B. Tall Leafy Green Orchis (*Habenaria longibractea*)
C. Intermediate Bog Orchis (*Habenaria longibractea*)

PLATE XIX

A

GREEN WOOD ORCHIS

Habenaria dilatata *Habenaria tridentata*

B

RAGGED-FRINGED ORCHIS

Habenaria lasca

June to August from Quebec to New York (according to Miss Niles). I found it in the Yosemite Valley, California.

TALL WHITE BOG ORCHIS, *H. dilatata*, is much like these, save that the flowers are white. It grows all summer in the northern half of the United States and Canada.

Three more Northern summer orchids are: First, ROUND-LEAVED ORCHIS, *H. orbiculata*, with its greenish-white, recurved sepals. Second, HOOKER'S ORCHIS, *H. Hookeriana*, with its lanceolate, greenish-yellow, drooping sepals. Both have long racemed scapes, springing from two round, flat leaves. Third, SMALL BOG ORCHIS, *H. obtusata*, with yellowish-green flowers and a single leaf.

Two small Southern summer orchids are: SOUTHERN WHITE ORCHIS, *H. nivea*, with long spurred flowers and glass-like leaves; and SOUTHERN YELLOW ORCHIS, *H. integra*, with dense spikes of orange-yellow flowers and lanceolate leaves.

PLATE XIX, A

GREEN WOOD ORCHIS, *H. clavellata* (*H. tridentata*). **Stem.**—Angled, 8'–18' high. **Leaves.**—One, large, oblanceolate, several bracts above. **Flowers.**—Small, in short, loose racemes, greenish. **Perianth.**—Of ovate sepals and petals, with a three-toothed lip and a very long, incurved, club-shaped spur. **Column.**—Anthers (*a*) above the stigma (*s*), which has three club-like appendages.

This very insignificant flower is perhaps the most common of the genus. It blooms east of the Mississippi in July and August.

Another much like this, with a shorter spur and more leafy stem, is TUBERCLED ORCHIS, *H. flava* (*H. virescens*).

The names of many of these orchids have been changed so often, and they seem so much alike, that it is rather difficult to identify them. The insignificance of these flowers causes the layman to exclaim, when told that they are orchids; as the general idea, of this family, seems to be a gorgeous air-plant.



PLATE XIX. *Habenaria* (cont.)

- A. Green Wood Orchis, *Habenaria corymbosa*
- B. Ragged Fringe-leaf Orchis, *Habenaria lacera*

PLATE XX

A

WHITE-RINGED ORCHIS

Habenaria leucophaea

B

YELLOW-RINGED ORCHIS

Habenaria ciliaris

PLATE XIX, B

RAGGED FRINGED ORCHIS, *H. lacera*. **Stem**.—Simple, 1°-2° high. **Leaves**.—Lanceolate, alternate, becoming smaller above. **Flowers**.—Small, in a terminal raceme, greenish-yellow. **Perianth**.—The sepals ovate, the upper one being round. The petals linear. The lip showy, three-parted, deeply fringed, with a short spur. **Column**.—The anthers (*a*) divided by the stigma (*c*). Ovary (*b*).

This is the prettiest of the green orchids, the deeply fringed lips giving the raceme a peculiarly feathery effect. It blooms east of the Mississippi in June and July.

PLATE XX, A

WHITE FRINGED ORCHIS, *H. blephariglottis*. **Root**.—Small, fibrous. **Stem**.—1°-2½° high. **Leaves**.—Lanceolate, the upper ones smaller. **Flowers**.—Pure white, showy, in a terminal raceme. **Perianth**.—Sepals round. Petals smaller, toothed. Lip lanceolate, fringed, with a very long spur. **Column (C)**.—The stigma (*s*) dividing the anthers (*a*). Ovary (*o*).

The loveliness of this flower almost takes away one's breath. It frequents midsummer marshes, ranging from Newfoundland south to North Carolina and west to Minnesota.

CREAM FRINGED ORCHIS, *H. holopetala*, is much the same, but pale yellow, with a less fringed lip and entire petals. It is probably a hybrid of the foregoing and following varieties.

PLATE XX, B

YELLOW FRINGED ORCHIS, *H. ciliaris*. **Root, Stem, Leaves**.—The same as in *H. blephariglottis*. **Flowers**.—A little larger than the White-Fringed Orchis, with a more deeply fringed lip and of a bright orange-yellow. Very showy. **Perianth** and **Column (C)**.—As above.

This gorgeous flower grows in swamps with the White-Fringed Orchis. Its flaming torches doubtless attract the necessary insects, but unfortunately, they also guide the ruthless flower-picker, to the inevitable doom of the variety.



50000. — 1/16. — 1/16. Size.

- A. White Fringed Orchid, *Habenaria leucophaea*
B. Yellow Fringed Orchid, *Habenaria ciliaris*

PLATE XXI

THE LARGE PURPLE-FRINGED ORCHIS

Habenaria grandiflora

CRESTED YELLOW ORCHIS, *H. cristata*, is much the same, but smaller, with deep-orange flowers.

PRAIRIE WHITE FRINGED ORCHIS, *H. leucophaca*, is a larger variety, with fragrant, white flowers sometimes tinged with green. The lip is divided in three parts and is much fringed. It blooms on moist prairies in July from western New York to the Mississippi. It is very showy and beautiful.

The flowers of this group remind one of tiny dancers poised for the ballet, or a swarm of fairies ready for flight.

PLATE XXI

LARGE PURPLE FRINGED ORCHIS, *H. grandiflora*.
Root.—Fleshy, fibrous. **Stem.**—Stout, 1^o–5^o high.
Leaves.—Oval or lanceolate. **Flowers.**—In a long, terminal, thickly flowered raceme, very showy, white, pale pink, or deep rose-purple. **Perianth.**—Upper sepals and petals connected, erect. Petals more or less toothed. Lip divided in three fan-shaped parts, deeply fringed. **Column A.**—Anthers (*a*) divided by the stigma (*b*).

The largest and most beautiful of all this genus is the Purple-Fringed Orchis. It grows in rich woods and meadows through Canada west to Michigan and south to North Carolina. When we surprise a group shining through our dark, Northern woods in July or August, their feathery loveliness is like a touch of the tropics. If we could be content to admire them there and leave them untouched, we might have them with us for many generations to come.

SMALLER PURPLE FRINGED ORCHIS, *H. psycodes*, is much the same, with shorter fringe. It blooms with the larger variety, but slightly later.

FRINGELESS PURPLE ORCHIS, *H. peramoena*, is another near relative, with a toothed instead of a fringed lip. It ranges in summer, from New York south to Virginia and west to Illinois.

ANDREW'S ROSE-PURPLE ORCHIS, *H. Andrewscii*, has sepals and petals much like the White-Fringed, and a lip like the Purple-Fringed Orchis, parted and more deeply cut. It appears in summer, in Massachusetts and Vermont. This is probably a hybrid of *H. lacera* and *H.*



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PLATE XXI. Reduced 1/2 from Life Size.

Large Purple-Fringed Orchid, *Habenaria sandwicensis*.

PLATE XXII

MOC CASIN, FLOWE

C. propodium acuta.

psycodes. It is rare and local, but numerous in certain haunts.

The most showy and beautiful group of the orchids which grow in this country, however, are the *Cypripediums*, with their sac-shaped lips. The most common of these is:

PLATE XXII

THE MOCCASIN FLOWER, PINK LADY'S SLIPPER, *Cypripedium acaule*. **Root.**—Tufted, fibrous. **Stem.**—A simple scape 6'–12' high. **Leaves.**—Two, from the root, somewhat hairy, elliptic, large. **Flower.**—Large, solitary, nodding from the top of the scape, rose-pink and brown. **Perianth.**—Sepals lanceolate, purple-brown and greenish, the two lower united. The petals narrow and longer. The lip very large, pendulous, shoe or sac-shaped, deep rose-pink, veined. **Column (C.F.)**—With an anther (*b*) on each side of the large stigma (*c*). A large petal-like, sterile stamen spreads over them. Ovary (*d*).

The nodding Moccasin hangs its heavy head above the fragrant pine needles in sandy or rocky woods. In its native haunts it is irresistibly lovely, for each plant is perfect in itself. When it is gathered and bunched it loses half its charm, although it is too beautiful to be altogether spoiled. Sometimes the lip is white, the sepals and petals yellow, and the leaves a lighter green. This is an albino form, but it appears so frequently that it nearly amounts to a separate variety.

RAM'S HEAD LADY'S SLIPPER, *C. arictinum*. **Root.**—Tufted, fibrous. **Stem.**—Simple, 8'–12' high. **Leaves.**—3–4, elliptic. **Flowers.**—Solitary, nodding, smaller than others of this genus. **Perianth.**—Sepals longer than the lip, lanceolate, greenish-brown. Petals linear. Lip cone-shaped, red and white, veiny, prolonged at the apex into a distorted spur somewhat resembling a ram's head. **Column.**—Much as *C. acaule*.

This is the rarest, one of the smallest, and surely the oddest of the genus, but will, I fear, soon be extinct. When we find it the day is marked with a red letter. It ranges from May to August, through the cold, damp woods of Canada and the Northern States.



PLATE 111. Mossassin Flower (Saxifraga hypnoides)

Mossassin Flower, *Saxifraga hypnoides*

PLATE XXIII

YELLOW LADY'S SLIPPER

Cypripedium hirsutum (Cypripedium pubescens)

LARGE YELLOW LADY'S SLIPPER, *C. hirsutum* (*C. pubescens*). **Root.**—Same as previous varieties. **Stem.**—Leafy, 1°-2° high. **Leaves.**—Oval, slightly hirsute. **Flower.**—Large, solitary, terminal, and nodding. **Perianth.**—With oval sepals, the two lower joined. Petals linear and twisted, all yellowish-green or brownish-purple. Lip much inflated, chrome yellow. **Column** (*A*).—Much as other varieties. The sterile stamen (*c*) yellow with red dots. Anthers (*a*). Stigma (*b*).

The bright flower of the Yellow Moccasin appears in boglands or damp woods, from Nova Scotia west to Minnesota and south to Alabama, in May to July. It is not quite so large as *C. acaule*, but larger than the Ram's Head Slipper. It is not common—I have found it only once; but my quest was well rewarded then, for the delicate, balloon-like sac is very lovely.

SMALL YELLOW LADY'S SLIPPER, *C. parviflorum*. **Root, Stem, Leaves.**—Much as above. **Flower.**—Smaller, fragrant. **Perianth.**—With bright yellow, hairy-lined lip, marked with purple or crimson. **Column.**—As above.

This variety often intergrades with *C. hirsutum*. It may be a simple form of the latter. It grows in bogs, damp woods, and on hillsides in the mountains, from Newfoundland to Georgia and occasionally out to the Pacific, from May to July.

PRAIRIE MOCCASIN FLOWER, SMALL WHITE LADY'S SLIPPER, *C. candidum*. **Stem.**—6'-12' high. **Leaves.**—3-4, elliptic or lanceolate. **Flowers.**—Fragrant, generally solitary, terminal, white and brown. **Perianth.**—Much like *C. hirsutum*, with a white lip lined with purple stripes. **Column.**—As above.

The White Lady's Slipper is much like the yellow. It ranges in May to July, from New York to the Rockies. John Muir found it, or a variety much like it, in the Yosemite Valley. This, together with the Small Yellow Lady's Slipper, is the only fragrant cypripedium we have.

Although the Pacific coast is rich in beautiful flowers, this white moccasin is the only cypripedium it can boast.



PLATE 1000

Yellow Lady's Slipper (*Cypripedium fl.*)

PLATE XXIV

SHOWY LADY'S SLIPPER

Cypripedium reginae (*Cypripedium spectabile*)

PLATE XXIV

SHOWY LADY'S SLIPPER, *C. reginae* (*C. spectabile*).
Root.—As above. **Stem.**—Stout, leafy, 1^o-2^o high.
Leaves.—Elliptic, deeply veined. **Flowers.**—1-4, large, showy, terminal, white and pink. **Perianth.**—With roundish, white sepals, the two lower joined and narrower. Petals white. Lip large, veiny, white or deeply stained with rose or wine-color above. **Column** (*c*).—Much as in *C. hirsutum*. Anthers (*a*). Stigma (*s*). Ovary (*o*).

This plant ranges from Nova Scotia south to Georgia and west to Minnesota from June to September. It is by far the most beautiful of our native orchids; perhaps, if *one* could fill that place, the most beautiful of all our wild flowers. I have only had the good fortune to see it once or twice, and never in its native haunts; but even so, I was well repaid. The botanists have done well to crown this beauty, for a queen she is indeed. But unfortunately a queen in exile, for her admirers have been so busy stripping her of her favors that she is forced to hide in remote swamps and deep woods, and even there she is in danger from their too assiduous devotion.

Oh, good friend, if you find her, stop and make obeisance, but do not tear her from her retreat! If you *must* pluck a few blossoms, leave many behind for the sake of the future of this most charming American beauty.



PLATE XXIV Reduced about $\frac{1}{2}$ from Life Size

Showy Lady's Slipper, *Cypripedium reginae*

