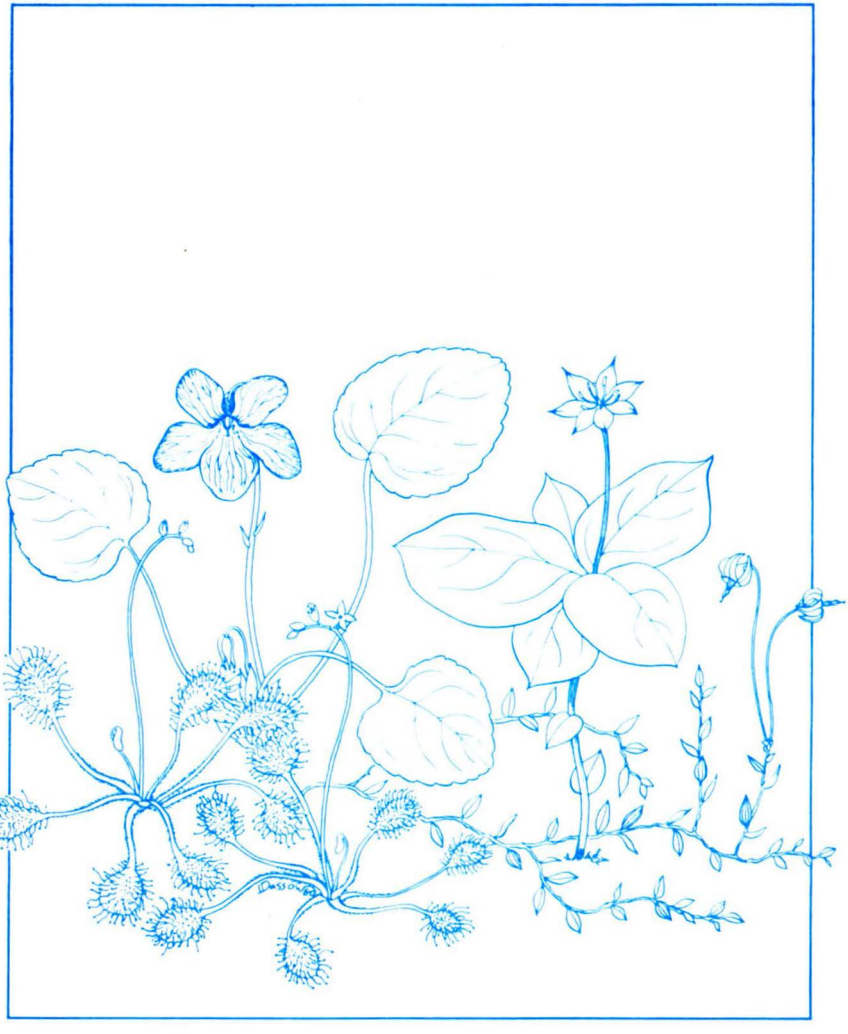
The Common Plants of the Muskegs of Southeast Alaska

O. Wayne Robuck



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by O. Wayne Robuck

Abstract

This guide identifies 49 common plants of coastal Alaska muskegs. Plants are divided into six major groups: clubmosses, ferns, sedges, herbs, shrubs, and trees. Illustrations and short descriptions of each plant are provided, along with a simplified key to aid in identification. The guide has been prepared with the amateur botanist in mind, and technical terminology has been largely eliminated. A glossary and illustrations are provided to explain the botanical terms used.

Keywords: Flora, identification (plant), keys (plant), muskeg, bog plants, Alaska (southeast), southeast Alaska.

Contents

Introduction

Muskeg is an Algonquian Indian word meaning an area entirely devoid of ordinary mineral soil. In a muskeg the upper layers of the ground are composed mainly of living sphagnum moss and the lower layers are composed of a fibrous brown mass of partially disintegrated sphagnum called peat. The presence of this fibrous brown peat characterizes a muskeg.

Muskegs may form in depressions, in flat areas, or on gentle slopes where ground water drainage is poor. They may occur in the alpine, forest, and shoreline zones. In a muskeg the water table is usually near the ground surface, but there is little standing surface water except for open ponds that range in size from potholes to small lakes. The excess water in the ground inhibits the decomposition and mineralization of dead plants by eliminating oxygen and, consequently, the presence and activity of decomposing organisms and oxidative (oxygen-adding) chemical processes. Environmental conditions that contribute to the development of muskegs are high precipitation, high humidity, and cool summer temperatures. Muskegs are very acidic and have low fertility.

Vegetation on muskegs is variable but is characterized by dense stands of sphagnum moss, herbaceous plants such as sedges, rushes, forbs, and low growing shrubs. In exposed locations and in drier areas, tall shrubs and scattered shrublike trees may be relatively abundant.

This guide illustrates 49 of the more common, easily identifiable plants of the muskegs of southeast Alaska. It was designed to fill the need of the amateur botanist for a concise and simple guide to the common plants of muskegs and contains a minimum of technical botanical terminology. Rare plants or plants requiring minute inspection for identification, such as sphagnum and other mosses, are not included. Most of the sedges, rushes, and grasses are not included because they are not easily identified by the amateur botanist. If a plant is grasslike in appearance but is not included in this guide, study the following descriptions to identify the plant family then refer

to one of the floras of Alaska for genus and species identification. The Gramineae/Poaceae (grasses), Cyperaceae (sedges), and Juncaceae (rushes) are the three families of plants with a "grasslike" appearance.

Grasses: Gramineae/Poaceae–Stems usually round in cross section and hollow between the joints; leaves in two vertical rows; leaf sheath usually split, with overlapping edges; each flower of the spikelet contained between two bracts.

Sedges: Cyperaceae–Stems often triangular in cross section and solid between joints; leaves in three vertical rows; leaf sheath tubular, not split; each flower of the spikelet in the axil of a single bract.

Rushes: Juncaceae–Stem round or flattened in cross section and solid or less commonly hollow between the joints; leaves in three vertical rows, usually wiry; leaf sheath open; flowers with stiff, greenish or brownish six-parted perianth (calyx and corolla).

How To Use The Guide

Most of the muskeg plants in southeast Alaska can be identified by referring to the drawings (figs. 1-49) and their descriptions. If the common name is known, consult the List of Species for the page number, then compare the plant with the drawing and description. If the scientific name is known, consult the Index of Botanical Names for the page number, then compare the plant with the drawing and the description. If neither the common or scientific name is known, use the Key for Identification.

To use the key, compare the plant with the paired statements. It is desirable to have an entire plant–flowers, leaves, stems, and roots–when doing this. Select from the first pair of statements the one that best describes the plant and proceed to the next pair of statements shown by the number at the end of the line. Continue this process until the figure that illustrates the particular plant is found. The plant may appear slightly different from the final illustration, but it should conform to a majority of the characteristics. If doubtful, try again until the general appearance of the plant conforms to the drawing and the description. Because all muskeg plants are not included it is possible to have a plant that is not in the key. The key has been prepared for amateur botanists; botanical terms used are defined on pages 122-129 and illustrated in figures 50-72, p. 114-120.

For those wishing to identify muskeg plants not included in this guide, *Flora of Alaska and Neighboring Territories* [1] or *Anderson's Flora of Alaska and Adjacent Parts of Canada* [2] are recommended. Most of the scientific names in this guide follow Hulten's usage, and most of the common names follow Welsh's usage.

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[1] Hulten, Eric. Flora of Alaska and neighboring territories: a manual of the vascular plants. Stanford, CA: Stanford Univ. Press; 1968. 1,008 p.

[2] Welsh, Stanley L. Anderson's flora of Alaska and adjacent parts of Canada. Provo, UT: Brigham Young University Press; 1974. 724 p.

The botanical and common names and the family of each plant species are given underneath each illustration. The botanical name of a plant consists of two parts. The first is the genus and the second is the species name. All plant individuals that are specifically like one another compose a species. All species that have descended from the same ancestor, compose a genus. The name of the person who named the plant is given after the botanical name. The family is a group of related genera. It is included to help the reader become aware of similarities in flowers or fruits that exist among genera otherwise dissimilar in vegetative characteristics (leaf, bud, stem, growth habit).

A description of the plant–including roots, stems, leaves, flowers, fruits, the plant's size and habitat, and uses or folklore–is given with each plant illustrated. The dietary, medicinal, pharmaceutical, or therapeutic uses of the plants are not to be taken in any way as a recommendation for such use. Readers are cautioned against using these plants for self-medication. Numerous books and articles have been written on plant folklore and a partial list of those used for this guide include:

Fernald, Merritt Lyndon; Kinsey, Alfred Charles. Edible wild plants of eastern North America. New York: Harper & Row, Publishers, Inc.; 1958. 452 p.

Fielder, Mildred. Plant medicine and folklore. New York: Winchester Press; 1975. 268 p.

Harrington, H.D. Edible native plants of the Rocky Mountains. Albuquerque, NM: The University of New Mexico Press; 1967. 392 p.

Heller, Christine A. Edible and poisonous plants of Alaska. Fairbanks, AK: University of Alaska; 1953. 167 p.

Kingsbury, John M. Poisonous plants of the United States and Canada. Englewood Cliffs, NJ: Prentice-Hall, Inc.; 1964. 626 p.

Kirk, Donald R. Wild edible plants of the western United States. Happy Camp, CA: Naturegraph Publishers, Inc.; 1975. 326 p.

Krochmal, Arnold; Krochmal, Connie. A guide to the medicinal plants of the Unites States. New York: Quadrangle/The New York Times Book Co.; 1973. 259 p.

List of Species

Figure

1. Stiff clubmoss, *Lycopodium annotinum* L.
2. Western bracken, *Pteridium aquilinum* (L.) Kuhn.
3. Shore pine, *Pinus contorta* Dougl. ex Loud. var. *contorta*
4. Sitka spruce, *Picea sitchensis* (Bong.) Carr.
5. Western hemlock, *Tsuga heterophylla* (Raf.) Sarg.
6. Mountain hemlock, *Tsuga mertensiana* (Bong.) Carr.
7. Western redcedar, *Thuja plicata* Donn ex D. Don
8. Alaska-cedar, *Chamaecyparis nootkatensis* (D. Don) Spach
9. Crowberry, *Empetrum nigrum* L.
10. Bog cranberry, *Vaccinium oxycoccus* L.
11. Mountain cranberry, *Vaccinium vitis-idaea* L.
12. Dwarf blueberry, *Vaccinium caespitosum* Michx.
13. Bog blueberry, *Vaccinium uliginosum* L.
14. Labrador-tea, *Ledum groenlandicum* Oeder
15. Rusty menziesia, *Menziesia ferruginea* Sm.
16. Bog-rosemary, *Andromeda polifolia* L.
17. Bog kalmia, *Kalmia polifolia* Wang.
18. Common mare's-tail, *Hippuris vulgaris* L.
19. Yellow skunk-cabbage, *Lysichiton americanum* Hult. & St. John
20. Yellow pond-lily, *Nuphar polysepalum* Engelm.
21. Yellow marshmarigold, *Caltha palustris* L.
22. Roundleaf sundew, *Drosera rotundifolia* L.
23. Common butterwort, *Pinguicula vulgaris* L.
24. Wild flag, *Iris setosa* Pallas
25. Chocolate lily, *Fritillaria camschatcensis* (L.) Ker-Gawl
26. Sticky tofieldia, *Tofieldia glutinosa* (Michx.) Pers. var. *brevistyla* (Hitchc.) Hitchc.
27. White bog-orchid, *Habenaria dilatata* (Pursh) Hook.
28. Slender bog-orchid, *Habenaria saccata* Greene
29. Marsh five-finger, *Potentilla palustris* (L.) Scop.
30. Marsh violet, *Viola palustris* L.
31. Alaska violet, *Viola langsdorfii* (Regel) Fisch.
32. Coastal fleabane, *Erigeron peregrinus* (Pursh) Greene
33. Swertia, *Swertia perennis* L.
34. Nagoonberry, *Rubus arcticus* L.

35. Cloudberry, *Rubus chamaemorus* L.
36. Swamp gentian, *Gentiana douglasiana* Bong.
37. Northern grass-of-Parnassus, *Parnassia palustris* L.
38. Deer-cabbage, *Fauria crista-galli* (Menzies) Makino
39. Arctic starflower, *Trientalis europaea* L. var. *europaea*
40. Bunchberry, *Cornus canadensis* L.
41. Fiveleaf bramble, *Rubus pedatus* Sm.
42. Buckbean, *Menyanthes trifoliata* L.
43. Trifoliate goldthread, *Coptis trifolia* (L.) Salisb.
44. Fernleaf goldthread, *Coptis asplenifolia* Salisb.
45. Sitka burnet, *Sanguisorba stipulata* Raf.
46. Tall cotton-grass, *Eriophorum angustifolium* Honck.
47. Russett cotton-grass, *Eriophorum chamissonis* C.A. Mey.
48. Creeping spike-rush, *Eleocharis palustris* (L.) Roem. & Schult.
49. Tufted clubrush, *Scirpus caespitosus* L.

List of Illustrated Plant Parts

Figure

Key for Identification

1. Mature plant not producing flowers and seeds but reproducing by one-celled spores (clubmosses and ferns) 2
1. Mature plant producing flowers and/or seeds but NOT reproducing by one-celled spores (flowering plants) 3

2. Leaves not separated into distinct blade and stem; creeping growth; terminal spore-producing structure ..... stiff clubmoss, fig. 1
2. Leaves with a distinct blade and stem; erect growth; spore-producing structure along margin, on back side of leaf ..... western bracken, fig. 2

3. Woody plant, trees or shrubs, stem not dying back over winter 4
3. Nonwoody plant, herbs; stem usually dying back over winter 18

4. Seeds produced in cones; leaves needlelike or scalelike; usually one main stem (tree) 5
4. Seeds produced in flowers; leaves not needlelike or scalelike; usually with several stems (shrub) 10

5. Leaves needlelike, more than 3 mm (1/8 in) long 6
5. Leaves scalelike, less than 3 mm (1/8 in) long 9

6. Needles borne in bundles of two; cylinder (sheath) formed at base of leaves ..... shore pine, fig. 3
6. Needles borne singly; no cylinder (sheath) present at base of leaves 7

7. Needles stiff, sharp pointed, standing out in all directions from twig, acrid in taste and smell ..... Sitka spruce, fig. 4
7. Needles soft, blunt, standing out in two directions from twig, not acrid 8

8. Leaves flat, forming flattened sprays, two white bands (stomata) on lower surface only; cone 1.5-2.5 cm (5/8-1 in) long ..... western hemlock, fig. 5
8. Leaves not flat, keeled, not forming flattened sprays, spreading in all directions, white bands (stomata) on both surfaces; cones 2.5-6 cm (1-2 1/2 in) long ..... mountain hemlock, fig. 6

9. Cones longer than broad, hanging down, cone scales laterally attached; leafy twigs flattened; scalelike leaves blunt, flattened, not spreading ..... western redcedar, fig. 7
9. Cones as broad as long or broader, erect, cone scales attached near the center; leafy twigs square in cross section, not flattened; scalelike leaves pointed, spreading ..... Alaska-cedar, fig. 8

10. Flowers inconspicuous, lacking petals (see fig. 66); stem trailing on ground and mat forming; leaves linear to narrowly elliptical (see figs. 58 and 60); fruit black with several hard seeds ..... crowberry, fig. 9
10. Flowers showy, having petals and sepals (see fig. 66); stem erect, usually not trailing or mat forming; leaves elliptical to ovate (see figs. 60 & 62); fruit not black 11

11. Ovary inferior (see fig. 67); fruit is a berry 12
11. Ovary superior (see fig. 68); fruit is a dry capsule 15

12. Leaves evergreen, thick; stems slender and trailing; flowers terminal 13
12. Leaves deciduous, thin; stems stout and erect; flowers in axil of leaves 14

13. Petals mostly separate, sharply bent backwards; leaves small, 3-10 mm (1/8-3/8 in) long, 1-3 mm (1/32-1/8 in) wide, lance shaped, edges strongly rolled under ..... bog cranberry, fig. 10
13. Petals united, bell-shaped; leaves 10-20 mm (3/8-3/4 in) long, 6-10 mm (1/4-3/8 in) wide, ovate to obovate, edges slightly rolled under ..... mountain cranberry, fig. 11

14. Leaf margins sharply toothed throughout; flowers solitary in leaf axil of new twigs; sepals shallowly lobed, deciduous in fruit ..... dwarf blueberry, fig. 12
14. Leaf margins entire (see fig. 50); flowers one to few in leaf axil of last season's twigs; sepals deeply lobed, persistent in fruit ..... bog blueberry, fig. 13

15. Petals distinct, white only; leaves brown, woolly on underside ..... Labrador-tea, fig. 14
15. Petals united, at least partly, pinkish-white to purple; underside of leaves neither brown nor woolly 16

16. Leaves leathery, evergreen, edges usually rolled under, upper and lower surfaces hairless 17
16. Leaves thin, deciduous, edges with minute teeth and not rolled under, upper and lower surfaces with fine hairs ..... rusty menziesia, fig. 15

17. Small creeping shrub; 5-60 cm (2-12 in) tall; petals urn shaped, pink ..... bog rosemary, fig. 16
17. Tall erect shrub; 1-5 dm (4-20 in) petals saucer shaped; reddish-purple ..... bog-kalmia, fig. 17

18. Plants aquatic; all leaves whorled (see fig. 57), 8 to 12 leaves per whorl; creeping submerged rhizome (fig. 74) ..... common mare's-tail, fig. 18
18. Plants aquatic, leaves not whorled; or plants terrestrial 19

19. Leaves grasslike, in three rows; perianth (sepals and petals) lacking or reduced, not petallike in color or texture, flowers concealed by scales; leaf sheath (part enveloping the stem) forming a closed tube around stem; stem solid, triangular in cross section; (sedges and rushes) 46
19. Leaves not grasslike; perianth well developed, petallike in texture and color; leaf sheath lacking 20

20. Flowers yellow 21
20. Flowers not yellow 23

21. Plant with skunklike odor; leaves fleshy and large, 30-130 cm (12-52 in) long and 10-70 cm (2-28 in) wide ..... yellow skunk-cabbage, fig. 19
21. Plant without skunklike odor; leaves smaller and not fleshy 22

22. Leaves cordate (see fig. 65), leathery, floating, margins entire, stem not leafy ..... yellow pond-lily, fig. 20
22. Leaves kidney-shaped to oval-cordate (see figs. 61 and 65), seldom floating, margins with rounded teeth; stem leafy ..... yellow marshmarigold, fig. 21

23. Surfaces covered with sticky, stalked glands that trap insects; flowers white ..... roundleaf sundew, fig. 22
23. Surfaces not covered with sticky stalked glands; flowers not white 24

24. All leaves basal, succulent, yellowish green, slimy (sticky) on upper surface ..... common butterwort, fig. 23
24. Leaves not basal, not succulent, not yellowish green, not slimy on upper surface 25

25. Leaves parallel veined (see fig. 24) 26
25. Leaves not parallel veined (see fig. 42) 30

26. Flowers blue to purple or brownish, tinged greenish yellow on the outside 27
26. Flowers green, white, or yellowish white 28

27. Flowers blue; leaves sword shaped; short thick rootstock ..... wild flag, fig. 24

27. Flowers brown; leaves not sword shaped; root with ricelike kernels ..... chocolate lily, fig. 25

28. Petals united forming a spur, lip, and hood; stem glabrous 29
28. Petals distinct, not forming spur, lip, and hood; upper stem usually sticky with stalked glands .... sticky tofieldia, fig. 26

29. Lip (petal below hood) ovate-lanceolate (see figs. 59 and 62), abruptly swollen at the base; spur round in cross section, almost equal in length to lip; flowers usually white ..... white-bog orchid, fig. 27
29. Lip linear (see fig. 58), not swollen at the base, spur rounded to pouch shaped, usually much shorter than lip; flowers green ..... slender-bog orchid, fig. 28

30. Flowers white or if not white, subtended by white petallike bracts (see fig. 40) 36
30. Flowers pink, red, lilac, pinkish purple, bluish purple, or brownish purple, not subtended by white bracts 31

31. Leaves, pinnately compound (see fig. 52), five to seven leaflets; flowers brownish purple ... marsh five-finger, fig. 29
31. Leaves simple (see fig. 50) or palmately compound (see fig. 54) 32

32. Spur present in flower, formed by lower petal 33
32. Spur not present in flower 34

33. Plant with stolons (see fig. 73); rootstock slender; flowers lilac with dark stripes, lower petals with darker veins, lateral pair usually not bearded ..... marsh violet, fig. 30

33. Plant without stolons; rootstock stout; flowers bluish purple, lower petal white at the base, darker veins absent, lateral pair bearded ..... Alaska violet, fig. 31

34. Flowers in head inflorescence (see fig. 72) ..... coastal fleabane, fig. 32
34. Flowers not in head 35

35. Leaves simple, obovate or oblong-elliptic (see figs. 60, 63, and 64), opposite (see fig. 56); petals bluish purple to white ..... swertia, fig. 33
35. Leaves palmately compound, three leaflets or three lobes (see figs. 51 and 53); alternate; petals pink to red ..... nagoonberry, fig. 34

36. Leaves simple (see fig. 50) 37
36. Leaves compound (see figs. 51-54) 42

37. Upper stem leaves forming a whorl (see fig. 57) 41
37. Upper stem leaves not whorled 38

38. Flowers solitary, on erect leafy branches, usually one per plant; fruit juicy and yellow when ripe ... cloudberry, fig. 35
38. Flowers not solitary or, if solitary, on long, naked or single-leafed stem, more than one per plant; fruit not juicy and yellow when ripe 39

39. Stem branched; leaves opposite; flowers closely subtended (immediately below) by ovate bracts ..... swamp gentian, fig. 36
39. Stem not branched; leaves not opposite, chiefly basal; flowers not subtended by ovate bracts 40

40. Stem from short rhizome; flower solitary, five stamens (see fig. 66) alternating with broad, glandular-tipped staminodia (sterile stamens) ..... northern grass-of-Parnassus, fig. 37
40. Stem from thick, fleshy rhizome, covered with old leaf bases; several flowers on long stalk, staminodia absent, flowers have a rank odor ..... deer-cabbage, fig. 38

41. Flowers, one to three but usually one, white to pinkish white, not subtended by white horizontal, petallike bracts; alternate stem leaves below whorl; fruit not fleshy but red when ripe ..... arctic starflower, fig. 39
41. Many flowers, small, purplish black or yellowish green; surrounded by white horizontal, petallike bracts; opposite stem leaves below the whorl; fruit fleshy and red when ripe ..... bunchberry, fig. 40

42. Stem trailing; leaves palmately compound with five leaflets (see fig. 54) ..... fiveleaf bramble, fig. 41
42. Stem erect; leaves ternate (see fig. 53) or pinnately compound (see fig. 52) 43

43. Leaves ternate 44
43. Leaves pinnate 45

44. Plants growing in water, thick rhizome; leaves long stalked; flowers few to several, petals with numerous hairs on inner surface ..... buckbean, fig. 42
44. Plants not aquatic, thin roots; leaves short stalked; one flower ..... trifoliate goldthread, fig. 43

45. Leaves evergreen; 3.5-17 cm (1 1/2-7 in) long; one to three flowers on long, leafless stem; fruit six to twelve follicles ..... fernleaf goldthread, fig. 44
45. Leaves deciduous, 1-6.5 dm (4-26 in) long; flowers many, not solitary, in a 2.5-12.5-cm (1-5-in)-long spike (fig. 69), fruit not a follicle ..... Sitka burnet, fig. 45

46. Perianth bristles (stiff hairs) many, flat, long, and silky at maturity and often appearing like a tuft of cotton 47
46. Perianth bristles few, not flat or silky or appearing like a tuft of cotton 48

47. Spikes (see fig. 69) two to several, subtended by two to three leafy bracts; leaves usually flat below the middle, channeled or folded above the middle; white to cream bristles ..... tall cotton-grass, fig. 46
47. Spikes solitary, not subtended by leafy bracts; leaves linear-filiform, channeled or folded throughout; bristles cinnamon brown to white ..... russett cotton-grass, fig. 47

48. All leaves basal, reduced to sheath, lacking a blade; spike (see fig. 69) solitary, 0.5-2 cm (3/16-3/4 in) long, subtended by two scales encircling about half the stem; four perianth bristles ..... creeping spike-rush, fig. 48
48. Uppermost stem leaf with short 5-8 mm (3/16-5/16 in) long blade; spike solitary, 3.5-6 mm (1/8-3/16 in) long, subtended by one scale about as long as spike; six bristles ..... tufted clubrush, fig. 49

Figures 1 through 49

Figure 1

Lycopodium annotinum L.
Stiff Clubmoss. LYCOPODIACEAE.

Aboveground horizontal stem is long, creeping, and forked with erect, simple or paired aerial branches, 5-25 cm (2-10 in) long; leaves firm, stiff, spreading, mostly 4-10 mm (3/16-3/8 in) long; nonstalked, cone-shaped, spore producers borne singly on end of branches; spore-producing leaves, ovate, with nongreen, thin, dry, membranous margins.

USES: American Indians, as well as Europeans, used clubmoss spores as a powder to stop nosebleeds and bleeding from wounds. The spores were used in decoctions to increase urine flow and to treat severe diarrhea. Some clubmosses contain a poisonous alkaloid. Chewing the stems and swallowing the juices of some clubmosses produces a slight intoxication and causes pain in the mouth, vomiting, and diarrhea.

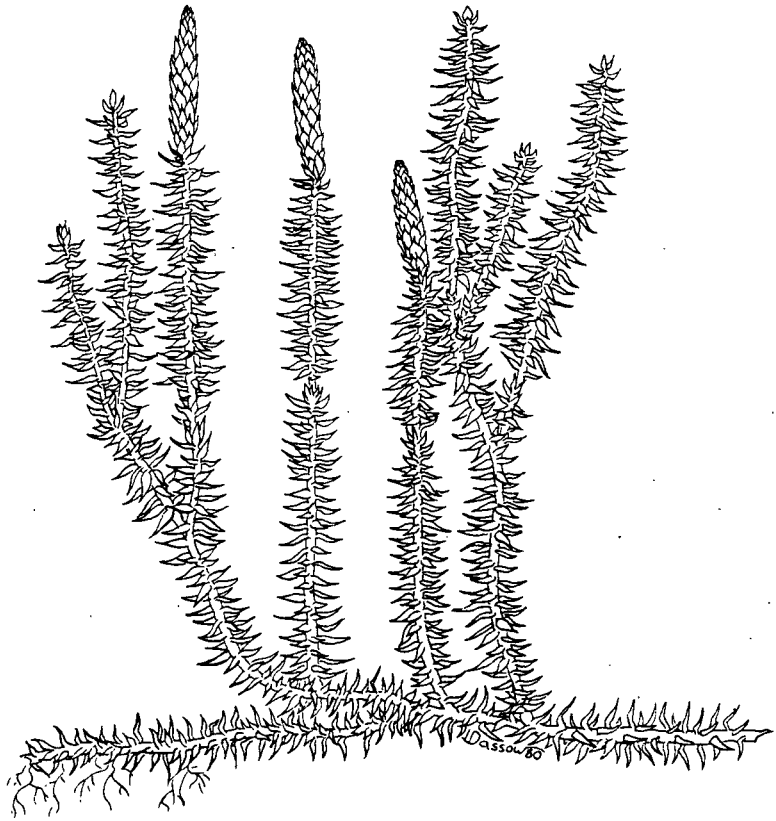

Figure 1.–Stiff clubmoss, Lycopodium annotinum *L.*

Figure 2

Pteridium aquilinum (L.) Kuhn.
Western Bracken. POLYPODIACEAE.

Rhizome (see fig. 74) hairy, creeping, deeply buried; fronds with erect, stout stems, 18-100 cm (7-39 in) long; dark woolly mass basally, straw colored above; frond triangular in shape, usually three times pinnately compound, basal pair of pinnae are often larger and more strongly dissected; sori marginal, protected by the margin rolling backward upon the lower side.

USES: Commonly eaten in Japan and many other countries of the world. Young fronds, "fiddleheads," are cut when 10-18 cm (4-7 in) tall; the hairs are removed; and the fronds are boiled 30 minutes, with the water changed twice. The boiled fronds are bitter but edible. They are best when creamed or fried in bread crumbs. Rootstock is dried and ground into meal. Bracken is a good emergency food but not flavorful enough to recommend for general use. As a folk medicine an infusion of the plant was used to expel intestinal worms, to increase urine flow, and to relieve stomach cramps.

Figure 2.–Western bracken, Pteridium aquilinum *(L.) Kuhn.*

Figure 3

Pinus contorta Dougl. ex Loud. var. *contorta*
Shore Pine. PINACEAE.

Low shrubby tree, 6-12 m (20-40 ft) tall; bark thin, scaly, gray to dark brown; leaves (needles) in bundles of two, stiff and often twisted, 2.5-6 cm (1-2 1/4 in) long; cones woody, egg shaped, one sided, 3-6 cm (1 1/4-2 1/4 in) long, pointing backward on twig, persistent for several years; cone scales prickly. Shore pine can vary considerably in form from a prostrate shrub to a tall tree.

USES: American Indians made extensive use of pine bark. The Algonquian Indian word "Adirondack" means tree-eaters. The Indians scraped, dried, and ground the juicy inner bark of the pine into flour in spring. Used locally for firewood and Christmas trees.

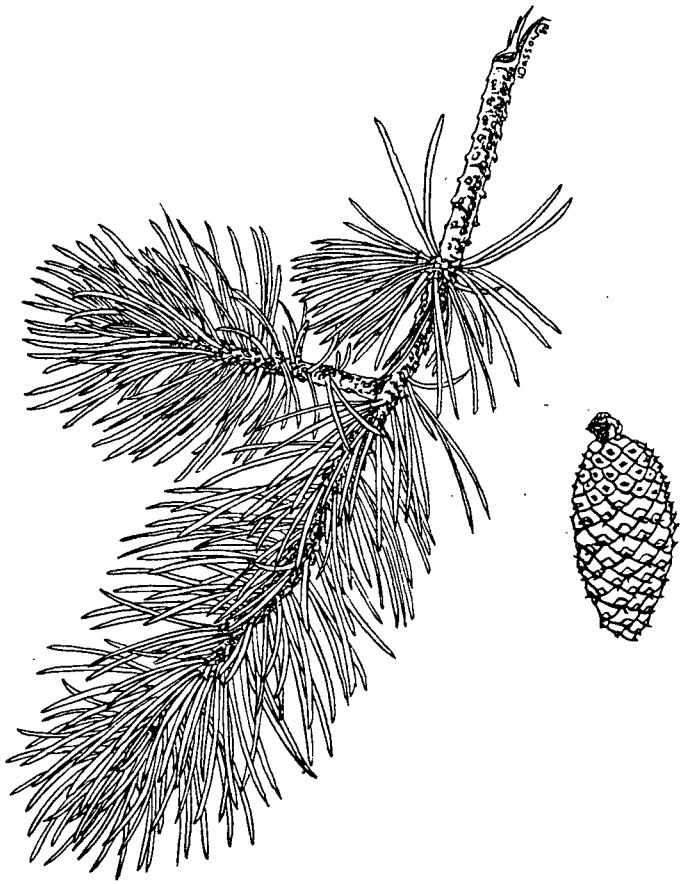

Figure 3.–Shore pine, Pinus contorta *Dougl. ex Loud. var.* contorta.

Figure 4

Picea sitchensis (Bong.) Carr.
Sitka Spruce. PINACEAE.

Trees to 50 m (163 ft) tall; bark thin, grayish on small trunks, becoming dark purplish brown with scaly plates; twigs stout, rough from peglike bases of leaves; needles standing out on all sides of twig, flattened, much wider than thick, 10-25 mm (3/8-1 in) long, sharp pointed, dark green on underside, two whitish bands on upper surface; cones 5-10 cm (2-3 1/2 in) long, short stalked, drooping; cone scales long, stiff, thin, and irregularly toothed. Sitka spruce can vary in form from shrublike to a tall tree.

USES: The State tree of Alaska. The inner bark and young shoots may be eaten in early spring and summer as an emergency food. Young shoots can be used for tea. Roots were extremely valuable to West Coast Indians for making hats, baskets, and ropes. Spruce gum was used for chewing, for cementing tools, and for a number of medicinal purposes. Used extensively for lumber and pulp.

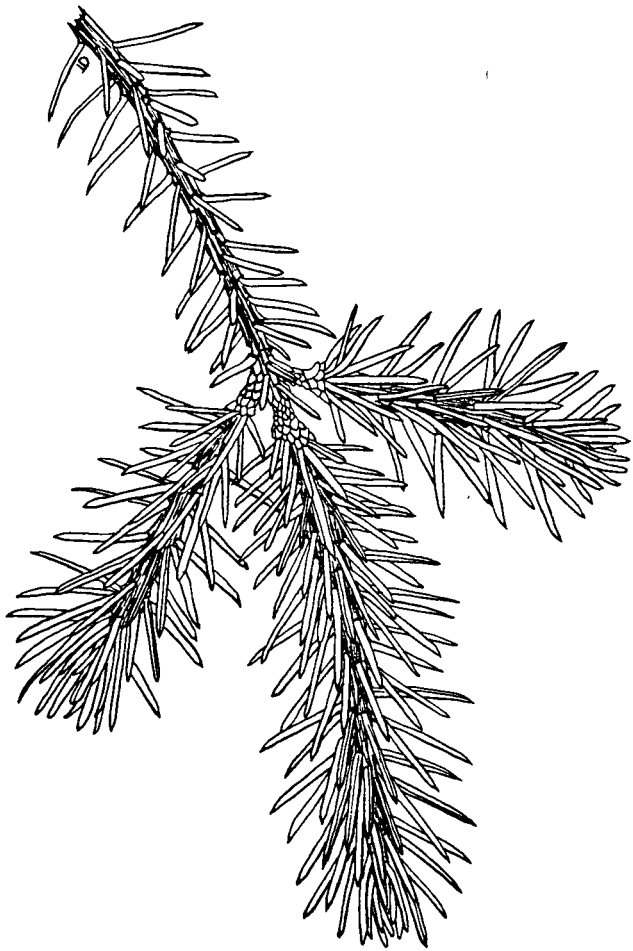

Figure 4.–Sitka spruce, Picea sitchensis *(Bong.) Carr.*

Figure 5

Tsuga heterophylla (Raf.) Sarg.
Western Hemlock. PINACEAE.

Trees to 50 m (163 ft) tall; drooping leader; bark brown, furrowed; inner bark red; twigs slender, droopy, roughened by peglike bases of leaves; needles and twigs forming flat sprays; needles spreading in two rows, 6-22 mm (1/4-7/8 in) long, flat, without central thickening, with two broad white bands (stomata) on lower surface; rounded at tip; cones 1.5-2.5 cm (5/8-1 in) long, brown, with thin papery scales; drooping at end of twigs. Western hemlock can vary in form from shrublike to a tall tree.

USES: The outer bark contains a high percentage of tannin. The Alaska Indians made a coarse bread from the inner bark. Western Indians made tea by steeping the fresh needles in hot water for a few minutes. The bark can be boiled to produce a red-brown dye. The pitch was used on the face to prevent chapping. The bark was boiled and used as a laxative and as a wash for sore eyes and skin sores. Used extensively for lumber and pulp.

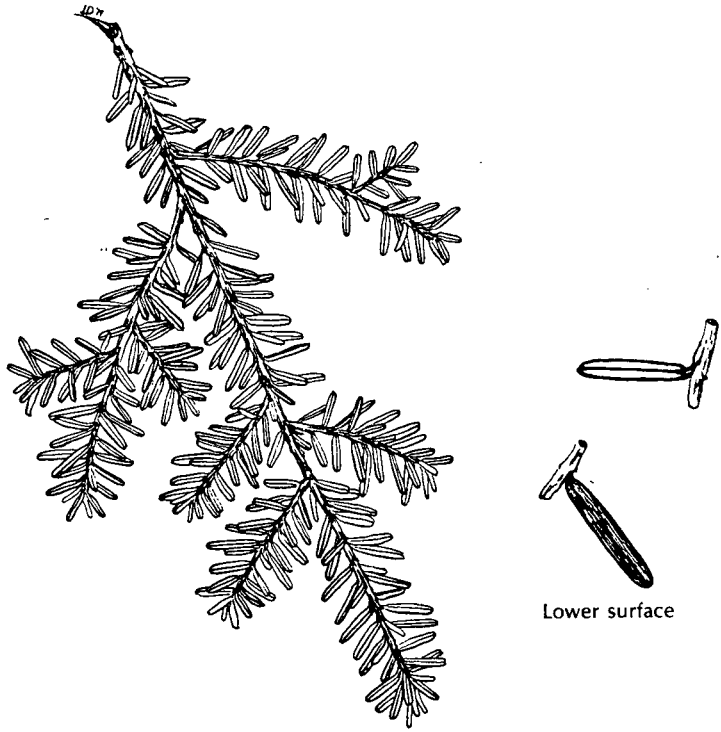

Figure 5.–Western hemlock, Tsuga heterophylla *(Raf.) Sarg.*

Figure 6

Tsuga mertensiana (Bong.) Carr.
Mountain Hemlock. PINACEAE.

Trees to 20 m (65 ft) tall, often short and dwarfed; bark gray to dark brown, strongly furrowed; twigs mostly short, slender, on drooping branches; needles crowded on all sides of short side twigs, curved, 6-25 mm (1/4-1 in) long, flattened above and rounded, keeled below, stout, blunt, blue green with white bands on both surfaces; cones drooping, 2.5-6 cm (1-2 1/2 in) long, cylindrical, purplish but turning brown.

USES: See western hemlock, figure 5, for uses.

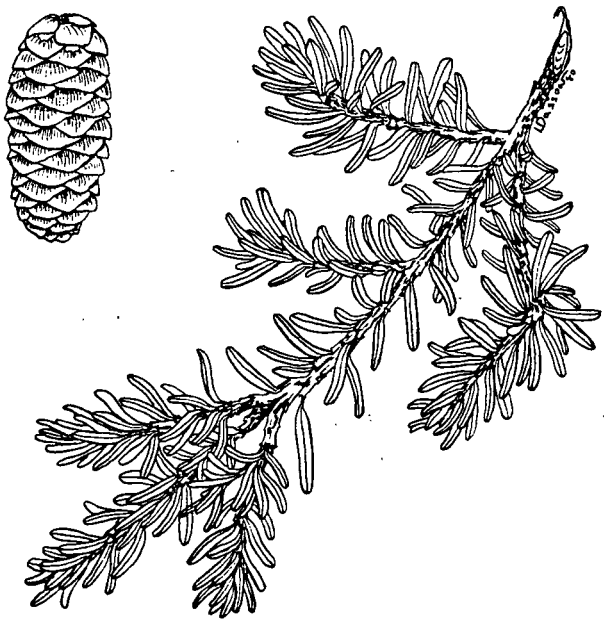

Figure 6.–Mountain hemlock, Tsuga mertensiana *(Bong.) Carr.*

Figure 7

Thuja plicata Donn ex D. Don
Western Redcedar. CUPRESSACEAE.

Trees to 40 m (130 ft) tall; bark gray or reddish brown, peeling in long slender strips; leafy twigs flattened, in fanlike sprays, drooping; leaves scalelike, overlapping, flattened, 1.5-3 mm (1/16-1/8 in) long; cones clustered near end of twigs, short stalked, turning upward; wood with the distinctive odor of cedar. Western redcedar is found in the southern half of southeast Alaska. It can vary from shrublike to a tall tree.

USES: The Indians used the wood for totem poles, dugout canoes, and houses, and the stringy bark for mats, baskets, and ropes.

Figure 7.–Western redcedar, Thuja plicata *Donn ex D. Don.*

Figure 8

Chamaecyparis nootkatensis (D. Don) Spach
Alaska-Cedar. CUPRESSACEAE.

Trees to 30 m (100 ft) tall, with spreading and drooping branches; bark gray or purplish brown, scaly, peeling in long narrow strips; wood yellow, distinctive potato-like odor; leaves scalelike, 1.5-3 mm (1/16-1/8 in) long, pointed and spreading, closely overlapping, yellow green; cones scattered, short stalked, nearly round, hard, ashy gray, four or six paired, rounded, hard cone scales. Alaska-cedar can vary from shrublike to a tree.

USES: Volatile oils in foliage may cause severe allergic reactions in some people. Indians used the wood for canoe paddles, masks, boxes, bowls, dishes, spoons, and other household utensils. Fine roots were split and used for the framework of baskets and in making hats.

Figure 8.–Alaska-cedar, Chamaecyparis nootkatensis *D. Don) Spach.*

Figure 9

Empetrum nigrum L.
Crowberry. EMPETRACEAE.

Low, creeping, matted, heatherlike evergreen shrub, 15 cm (6 in) tall with horizontal, much branched stems; leaves four in a whorl (see fig. 57) or alternate (see fig. 55), 3-7 mm (1/8-1/4 in) long, linear, with margins rolled under, spreading; flowers solitary, inconspicous; fruit blue black, watery juice, six to nine hard reddish brown seeds.

USES: The berries are tasteless but can be eaten raw, cooked, or dried. Adding sugar and cooking enhances the flavor. Beer and a sparkling white wine can be made from the juice.

Figure 9.–Crowberry, Empetrum nigrum *L.*

Figure 10

Vaccinium oxycoccus L.
Bog Cranberry. ERICACEAE.

Creeping, slender, vinelike stems, rooting at nodes; leaves 3-10 mm (1/8-3/8 in) long, 1-4 mm (1/32-1/8 in) wide, lanceolate to ovate (see figs. 59 and 62), edges strongly rolled under, leathery; flowers one to four at the end of stems, nodding; flower stalk slender, 2-5 cm (3/4-1 1/2 in) long with two tiny leaves near base; petals red to pink, sharply bent backwards; eight yellow stamens (see fig. 66), pointing forward; fruit a red, juicy, berry.

USES: Berries can be cooked to make jam, jelly, pie, or a beverage. Adding salt reduces the need for large amounts of sugar. In folk meadicine, tea made from leaves was used to purify blood and to combat nausea. Its astringent quality helped in controlling diarrhea. The tea was considered beneficial in treating diabetes.

Figure 10.–Bog cranberry, Vaccinium oxycoccus *L.*

Figure 11

Vaccinium vitis-idaea L.
Mountain Cranberry. Lingenberry. ERICACEAE.

Low creeping, evergreen, matted shrub, 5-15 cm (2-6 in) tall; leaves 10-20 mm (3/8-3/4 in) long, 6-10 mm (1/4-3/8 in) wide, obovate, oblong or elliptic (see figs. 60, 63, and 64), edges rolled under, leathery, shiny green on upper surface, light green with short, stiff brown hairs on lower surface; flowers one to several, nodding, in terminal raceme (see fig. 70); petals pink, bell shaped; fruit a red, sour berry.

USES: Berries are a good source of vitamin C when picked after the first frost. Although sour, they have a more piquant flavor than the commercial cranberry. They are used for jams, jellies, relishes, and beverages. An infusion of leaves was considered useful for bladder problems and a boiled concentrate of the leaves was used to relieve gout and rheumatism.

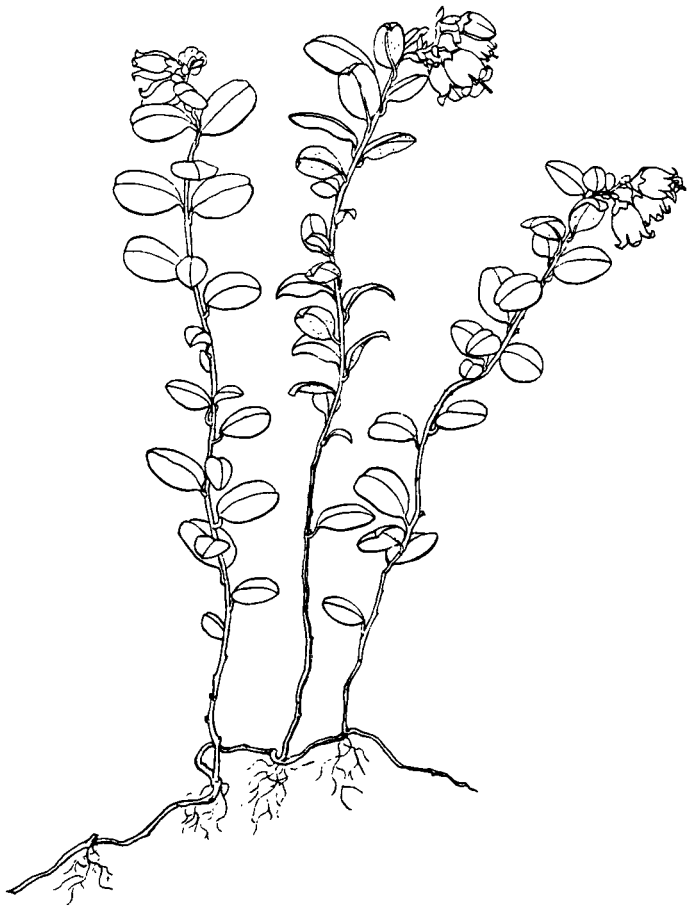

Figure 11.–Mountain cranberry, Vaccinium vitis-idaea *L.*

Figure 12

Vaccinium caespitosum Michx.
Dwarf Blueberry. ERICACEAE.

Low spreading, matted shrub, 10-40 cm (4-16 in) tall; leaves 10-35 mm (3/8-1 3/8 in) long, 5-10 mm (3/16-3/8 in) wide, elliptic to obovate (see figs. 60 and 64), uniformly and densely toothed margins, deciduous, glabrous on upper surface, often glandular lower surface; single flower at the base of leaves, pink to whitish, urn shaped; fruit a blue berry with pale powdery coating (bloom).

USES: Berries can be eaten raw or made into jams and jellies.

Figure 12.–Dwarf blueberry, Vaccinium caespitosum *Michx.*

Figure 13

Vaccinium uliginosum L.
Bog Blueberry. ERICACEAE.

Strongly branched, low shrub, 20-40 cm (8-16 in) tall; leaves 1-2.8 cm (3/8-1 1/16 in) long, 0.2-1.5 cm (1/16-9/16 in) wide, oval to elliptic (see figs. 60 and 61), entire margins, dark green on upper surface, lower surface lighter with conspicuous veins; flowers one to four from scaly buds of previous year; petals white or pinkish, urn shaped; blue-black berry.

USES: Berries can be eaten raw or cooked. Fresh or dried leaves were used for tea. Indians dried and stored the berries and later used them to flavor meat, to thicken soup, or add to pemmican.

Figure 13.–Bog blueberry, Vaccinium uliginosum *L.*

Figure 14

Ledum groenlandicum Oeder
Labrador Tea. ERICACEAE.

Low evergreen shrub, 3-15 dm (1-5 ft) tall; leaves 2-6 cm (3/4-2 3/8 in) long, 0.3-1.5 cm (1/8-9/16 in) wide, oblong to elliptic (see figs. 60 and 63), leathery, fragrant odor, margins strongly rolled under, lower surface covered with reddish brown woolly hairs, upper surface glabrous; flowers white, clustered at end of twigs, fragrant, numerous; eight stamens (see fig. 66); flower stalks 1.2-2.5 cm (1/2-1 in) long, gently curved.

USES: The strongly aromatic leaves can be used to make a very palatable tea. Two or three leaves are occasionally refreshing to chew raw. As a folk medicine marsh tea was used externally as a remedy for all kinds of skin problems. Taken internally, it was used to stimulate the nerves and the stomach. A syrup made from marsh tea was sometimes used for coughs and hoarseness. Excessive doses can cause poisoning.

Figure 14.–Labrador-tea, Ledum groenlandicum *Oeder.*

Figure 15

Menziesia ferruginea Sm.
Rusty Menziesia. ERICACEAE.

Deciduous shrub 5-20 dm (2-7 ft) tall, loosely spreading, odorous, with slender, widely forking, paired branches; leaves thin, 3-6 cm (1 1/4-2 1/2 in) long, 1.2-2 cm (1/2-3/4 in) wide, upper surface gray green with scattered hair, edges minutely toothed with gland-tipped hairs, lower surface whitish with sticky hairs; flowers several to many at ends of twigs; corolla urn shaped, coppery pink, fruit a four-parted capsule.

USES: Twigs were woven into mats by the Indians. The leaves bear a thickened, fleshy, edible gall.

Figure 15.–Rusty menziesia, Menziesia ferruginea *Sm.*

Figure 16

Andromeda polifolia L.
Bog-Rosemary. ERICACEAE.

Low evergreen, spreading shrub, 5-25 cm (2-10 in) tall; rhizomelike stem with erect leafy branches; leaves 1-4 cm (3/8-1 9/16 in) long, 0.2-0.6 cm (1/16-1/4 in) wide, alternate (see fig. 55), linear to oblong (see figs. 58 and 63), thick, margins rolled along edges; dark green with sunken veins on upper surface, whitish below; flowers in terminal clusters, pink, broadly urn shaped.

USES: The whole plant contains a poison (andromedotoxin) that causes watering of the mouth, eyes, and nose, loss of energy, slow pulse, vomiting, low blood pressure, irregular breathing, extreme drowsiness, lack of coordination, convulsions and progressive paralysis until death. Plant parts should not be eaten.

Figure 16.–Bog-rosemary, Andromeda polifolia *L.*

Figure 17

Kalmia polifolia Wang.
Bog Kalmia. ERICACEAE.

Low evergreen, spreading shrub, 1-5 dm (4-20 in) tall; leaves 2-4 cm (3/4-1 1/2 in) long, 0.3-1.1 cm (1/8-5/16 in) wide, opposite (see fig. 56), oblong to linear (see figs. 58 and 63), edges rolled under, dark green above and whitish below; flowers in terminal clusters, pink to purple, 1-2 cm (3/8-3/4 in) across, saucer shaped; fruit a five-parted capsule about 5 mm (3/16 in.) long.

USES: The whole plant contains a poison (andromedotoxin) that causes watering of the mouth, eyes, and nose, loss of energy, slow pulse, vomiting, low blood pressure, irregular breathing, extreme drowsiness, lack of coordination, convulsions and progressive paralysis until death. Plant parts should not be eaten.

Figure 17.–Bog kalmia, Kalmia polifolia *Wang.*

Figure 18

Hippuris vulgaris L.
Common Mare's-Tail. HALORAGACEAE.

Stout creeping rhizome; aerial stem weak and limber, 10-40 cm (4-16 in) tall, 1.5-5 mm (1/16-3/16 in) thick; leaves 8 to 12 in a whorl (see fig. 57), 6-30 mm (1/4-1 1/8 in) long, 1-2 mm (1/16-1/8 in) wide, linear (see fig. 58), sessile, entire margins; flowers small, in axils of submerged leaves. Growing in water, usually at least partly submerged.

USES: Alaska Indians used the shoots as a potherb or to make soup. The plant parts are tender and can be gathered in any stage of growth.

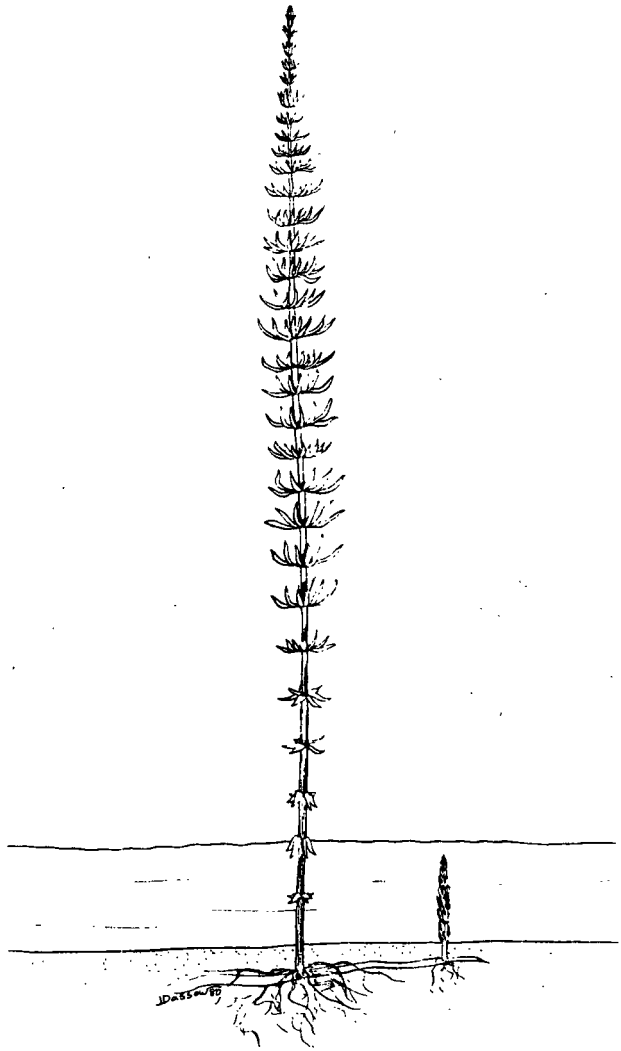

Figure 18.–Common mare's-tail, Hippuris vulgaris *L.*

Figure 19

Lysichiton americanum Hult & St. John
Yellow Skunk-Cabbage. ARACEAE.

Thick fleshy rootstock; plant 30-150 cm (1-5 ft.) tall; large leaf blade, 30-130 cm (1-4 1/2 ft) long, 10-70 cm (4-28 in) wide, ovate to broadly elliptic (see figs. 60 and 62); numerous, yellowish flowers borne on a stout, fleshy, central stem (spadix), surrounded by ovate-lanceolate bracts (spathe); plant with skunklike odor.

USES: Calcium oxalate is found throughout the plant and if the plant parts are eaten raw, a burning and choking sensation occurs in the mouth and throat. Very young leaves can be eaten after boiling in water several times, changing the water after each boiling. The white part of the stalk below the ground can be roasted and eaten. The root, after roasting and drying (5 to 6 weeks), is edible and may be ground into flour. The rootstock and roots have been used to treat respiratory ailments including hay fever, asthma, whooping cough, bronchial problems, and mucous congestion. The crushed leaves are said to have a soothing effect and are applied externally to cuts and swellings.

Figure 19.–Yellow skunk-cabbage, Lysichiton americanum *Hult. & St. John.*

Figure 20

Nuphar polysepalum Engelm.
Yellow Pond-Lily. NYMPHAEACEAE.

Thick, submerged rhizome; leaves alternate, arising from the rhizome, petioles 10 dm (3 1/2 ft) or more long; leaves 8-25 cm (3 1/8-9 7/8 in) long, 10-23 cm (4-9 in) wide, cordate (see fig. 65), leathery; flowers long stalked, solitary, arising from the rhizome; 7 to 12 sepals (see fig. 66), yellow tinged with green or red; petals yellow, small, hidden by stamens; fruit large, becoming leathery and podlike, containing many large seeds.

USES: Seeds can be parched over a slow fire, the hard shells removed, and kernels ground into meal. After additional parching, they may be eaten like peanuts. Indians collected the rootstock from the muddy bottom of ponds or from muskrat houses. They were usually boiled or baked, then peeled, and the sweet inner contents used to make gruel or soup, or dried and ground into meal.

Figure 20.–Yellow pond-lily, Nuphar polysepalum *Engelm.*

Figure 21

Caltha palustris L.
Yellow Marshmarigold. RANUNCULACEAE.

Hollow stem reclining with ends erect, rooting at the nodes; leaves seldom floating on the water, kidney shaped to oval-cordate (see figs. 61 and 65), 0.6-7 cm (1/4-2 3/4 in) long (sinus to tip), 0.6-13 cm (1/4-5/14 in) wide; margins evenly toothed with rounded teeth; flowers large, borne in leafy clusters on hollow stems that arise from among the leaves; sepals (see fig. 66) yellow, 6-20 mm (1/4-3/4 in) long.

USES: Contains poisonous helleborin and anemonin, so it should not be eaten raw. Boiling breaks down the poisons. Young plants are less poisonous, but may cause severe gastrointestinal irritation, salivation, and diarrhea. Young leaves and stems can be boiled for potherbs. When boiled, the long, white roots gathered in spring and winter look somewhat like sauerkraut. Flower buds can be used as a substitute for capers. They are first soaked in salt water, then cooked in spiced vinegar.

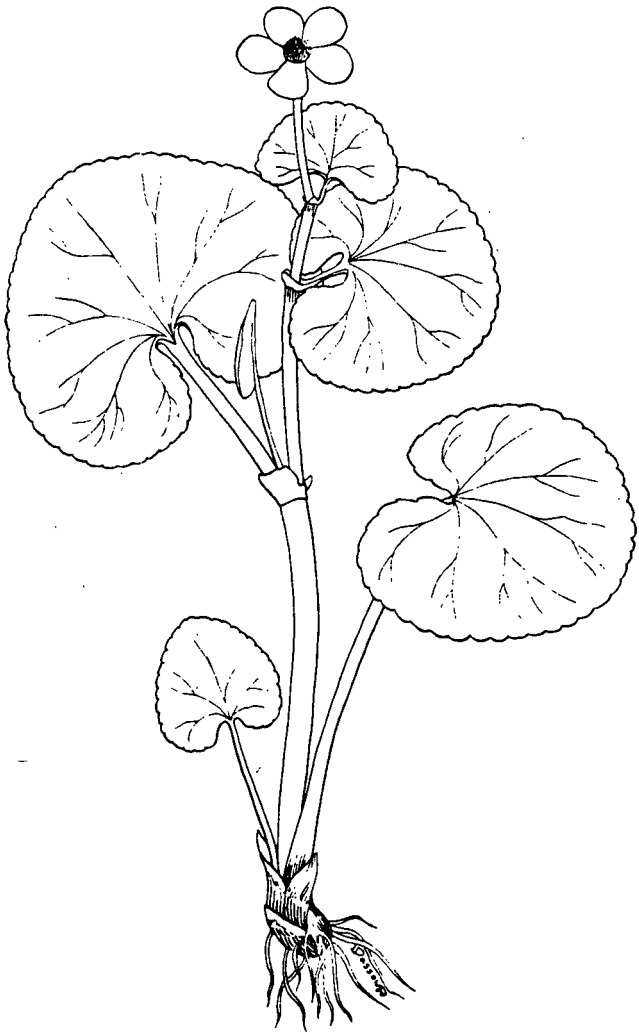

Figure 21.–Yellow marshmarigold, Caltha palustris *L.*

Figure 22

Drosera rotundifolia L.
Roundleaf Sundew. DROSERACEAE.

Leaves in basal rosettes, 1-6 cm (3/8-2 3/8 in) long, 0.3-1 cm (1/8-3/8 in) wide, oval to round, surface covered with sticky, stalked glands that trap insects; two to eight flowers; petals (see fig. 66) white. *Drosera anglica* Huds. (longleaf sundew) also occurs but is less common. Longleaf sundew has linear to obovate leaves (see figs. 58 and 64) that taper at the base and are three times longer than they are wide.

USES: The leaves have the ability, like rennet, to curdle milk and were used in northern Sweden for making cheese and junkets. A trea made from sundew was used as a remedy for respiratory ailments and chest problems including coughs, asthma, and bronchitis. The plant contains an antibiotic substance that, in pure form, is effective against streptococcus, staphylococcus, and pneumococcus. In European folk medicine, the fresh leaf was used to treat warts.

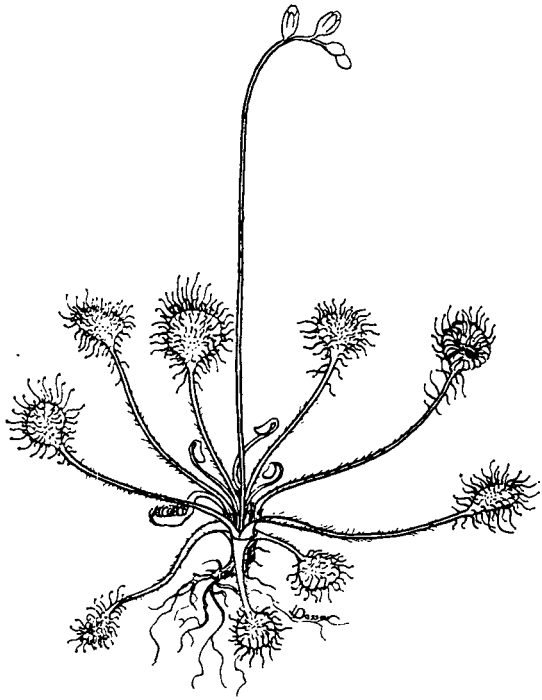

Figure 22.–Roundleaf sundew, Drosera rotundifolia *L.*

Figure 23

Pinguicula vulgaris L.
Common Butterwort; Bog Violet. LENTIBULARICAEAE.

Leaves succulent, form a rosette, 1.2-5 cm (1/2-2 in) long, 0.8-2.4 cm (5/16-2 in) wide, margins rolled, oblanceolate to elliptic (see fig. 60); flowers nodding, blue to violet, with funnel-formed tube and white hairs in throat, spur long, blunt; flowers 12-25 mm (1/2-5 in) long. *Pinguicula villosa* L. (hairy butterwort) also occurs but is less common. Leaves 0.4-1.5 cm (3/16-5/8 in) long, 0.2-0.7 cm (1.16-5/16 in) wide; flowers small, 6-10 mm (1/4-3/8 in) long, flower stalk with long, soft, wavy hairs.

USES: Unknown.

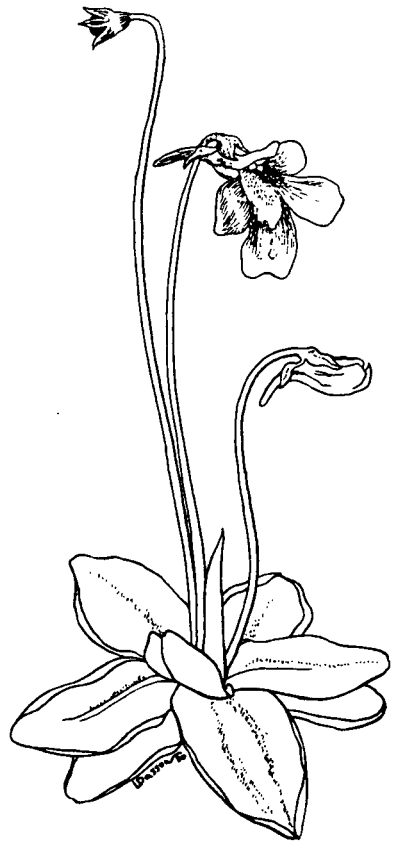

Figure 23.–Common butterwort, Pinguicula vulgaris *L.*

Figure 24

Iris setosa Pallas
Wild Flag. IRIDACEAE.

Short, thick, rootstock, covered with old leaf remains; 3.5-7 dm (13 3/4-28 in) tall; leaves sword shaped, linear-lanceolate (see figs. 58 and 59), 20-50 cm (8-20 in) long, 0.5-1.5 cm (1/4-5/8 in) wide; flowers large and showy; sepals (see fig. 66) 5-6 cm (2-2 3/8 in) long, blue with dark veins; petals small, 2-4 cm (3/4-1 9/16 in) long.

USES: The rootstock contains the poison irisin. The seeds can be roasted, ground, and used as coffee.

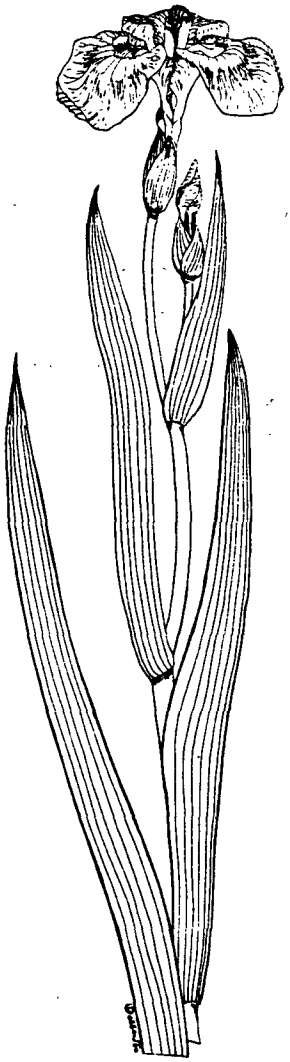

Figure 24.–Wild flag, Iris setosa *Pallas.*

Figure 25

Fritillaria camschatcensis (L.) Ker-Gawl.
Chocolate Lily; Indian Rice. LILIACEAE.

Plant 2-6 dm (7 7/8-24 in) tall; underground bulbs composed of several large fleshy scales and numerous ricelike bulblets; leaves in two to three whorls (see fig. 57), 3-9 cm (1 3/16-3 9/16 in) long, 0.7-3 cm (1/4-1 3/16 in) wide; flowers one to six, close together on short stalks, nodding, brown, strong odor.

USES: The bulbs, which contain starch and sugar, were a staple food of the Alaska Natives. Bulbs are dug in autumn and can be eaten raw, boiled, or dried. The taste is bitter.

Figure 25.–Chocolate lily, Fritillaria camschatcensis *(L.) Ker-Gawl.*

Figure 26

Tofieldia glutinosa (Michx.) Pers. var. *brevistyla* (Hitchc.) Hitchc. Sticky Tofieldia. LILIACEAE.

A stalk 1.5-4.0 dm (5 7/8-16 in) tall, sticky to the touch above; leaves 5-25 cm (2-10 in) long, 0.2-0.6 cm (1/16-1/4 in) wide, one-half to two-thirds the length of the flower stalk; flowers 3.2-5 mm (1/8-3/16 in) long, in terminal spikelike racemes (see fig. 70); petals and sepals (see fig. 66) yellowish green.

USES: Unknown.

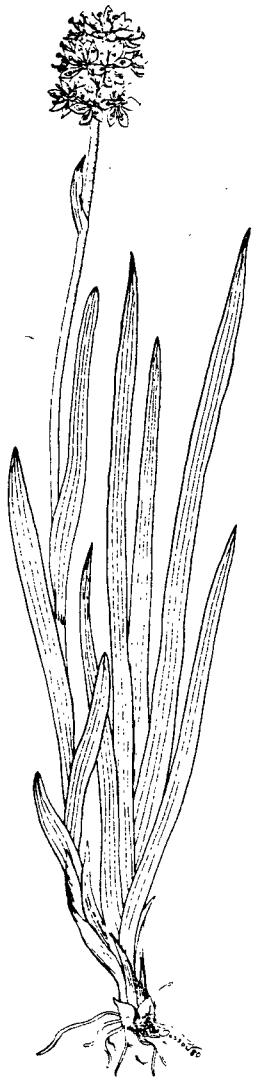

Figure 26.–Sticky tofieldia, Tofieldia glutinosa *(Michx.) Pers. var.* brevistyla *(Hitchc.) Hitchc.*

Figure 27

Habenaria dilatata (Pursh) Hook.
White Bog-Orchid. ORCHIDACEAE.

Thick, fleshy roots; 1.5-12 dm (5 7/8-48 in) tall; stem leafy; leaves 10-30 cm (4-11 3/4 in) long, 0.8-5.5 cm (5/16-2 2/16 in) wide, ovate-lanceolate to lanceolate (see figs. 59 and 62); raceme (see fig. 70) many flowered; flowers white, sometimes green, sweet scented; lip strongly expanded at the base, 5-10 mm (3/16-3/8 in) long; spur shorter than or nearly equal in length to lip.

USES: The tuberlike roots may be eaten raw or cooked.

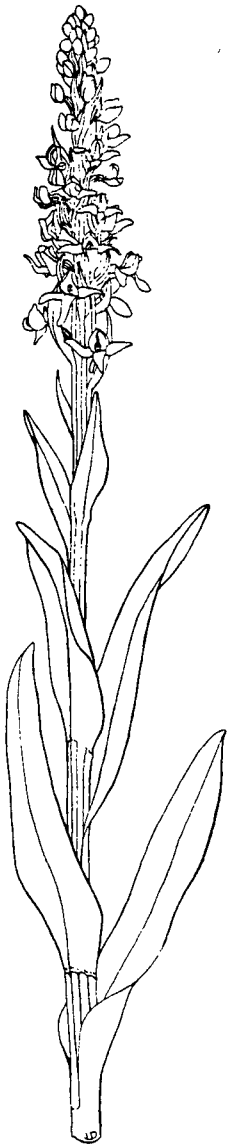

Figure 27.–White bog-orchid, Habenaria dilatata *(Pursh) Hook.*

Figure 28

Habenaria saccata Greene
Slender Bog-Orchid. ORCHIDACEAE.

Thick, fleshy roots; 1.5-10 dm (5 7/8-40 in) tall; stems leafy; leaves 4-15 cm (1 5/8-5 7/8 in) long, 1-4 cm (3/8-1 5/8 in) wide, narrowly lanceolate to elliptic (see figs. 59 and 60); raceme (see fig. 70) few to many flowers; flowers green, tinged with purplish brown; lip linear to oblong, not expanded at the base, often dark colored, longer than spur; spur saclike.

USES: The tuberlike roots may be eaten raw or cooked.

Figure 28.–Slender bog-orchid, Habenaria saccata *Greene.*

Figure 29

Potentilla palustris (L.) Scop.
Marsh Five-Finger.; Marsh Cinquefoil. ROSACEAE.

Creeping, somewhat woody rootstock; 1-10 dm (5 7/8-40 in) tall; leaves pinnate (see fig. 52), five to seven leaflets; leaflets oblong-lanceolate to elliptic (see figs. 59, 60, and 63), margins coarsely toothed, dark green on upper surface, pale and hairy on lower surface; flowers few to several, showy, brownish purple, petals about half as long as sepals (see fig. 66).

USES: The Siberian Eskimo use the dried leaves for a medicinal tea.

Figure 29.–Marsh five-finger, Potentilla palustris *(L.) Scop.*

Figure 30

Viola palustris L.
Marsh Violet. VIOLACEAE.

Long, thin, rhizomes (see fig. 74) and creeping stolons (see fig. 73); leaves 0.5-3.5 cm (1/4-1 7/16 in) long from sinus to apex, 0.5-4 cm (1/4-1 5/8 in) wide, smooth on both sides, cordate-ovate (see figs. 62 and 65); margins toothed (rounded or sharply pointed); flowers on long stalks that are often longer than the leaves; flowers 9-16 mm (3/8-5/8 in) long; spur 2-3 mm (1/16-1/8 in) long; petals (see fig. 66) lilac, the lower three petals with darker veins.

USES: Young leaves and flower buds can be eaten raw in salads. Leaves and flowers can be used as potherbs. In the southern part of the United States, violets are often used to thicken soup. The flowers can be candied or used to flavor vinegar. Slowly dried violet leaves make a good tea. The leaves and flowers were eaten as a possible preventive and corrective of bronchial disorder.

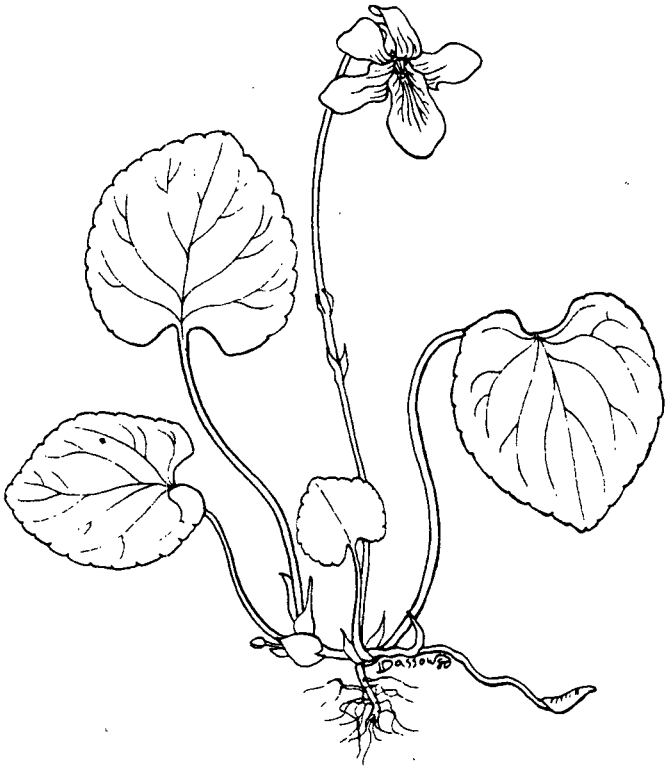

Figure 30.–Marsh violet, Viola palustris *L.*

Figure 31

Viola langsdorfii (Regel) Fisch.
Alaska Violet. VIOLACEAE.

Rhizome thick; leaves 1.1-5 cm (3/8-2 in) long, 1-5 cm (3/8-2 in) wide, cordate (see fig. 65) to kidney shaped with long leaf stalks; large flowers with dark bluish purple petals (see fig. 66), the lower ones united and white at the base, the lateral pair with long hairs.

USES: Young leaves and flowers can be eaten raw, cooked, or dried for use as a tea. Flowers can be candied or used to flavor vinegar. The leaves and flowers are eaten as a possible preventive and corrective of bronchial disorders.

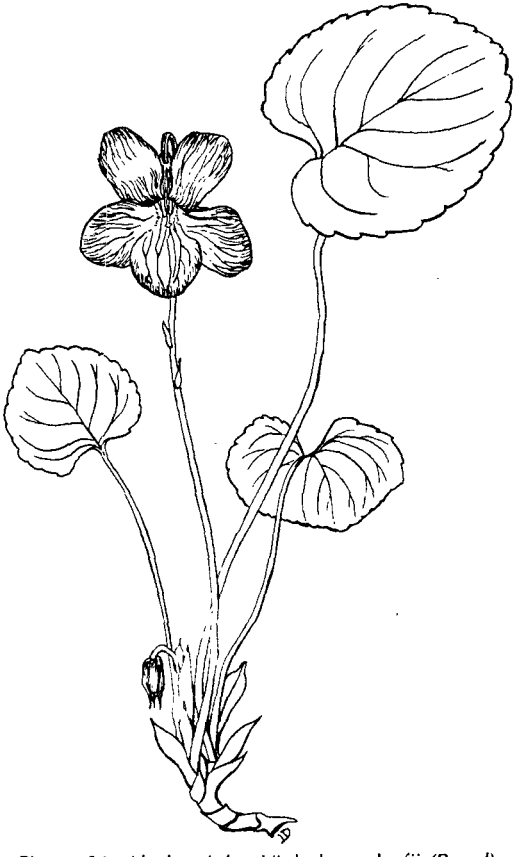

Figure 31.--Alaska violet, Viola langsdorfii *(Regel) Fisch.*

Figure 32

Erigeron peregrinus (Pursh) Greene
Coastal Fleabane. COMPOSITAE.

Stem single, 0.6-6 dm (2 3/8-24 in) or more tall, more or less hairy; very leafy; basal leaves 1.5-20 cm (5/8-7 7/8 in) long, 0.4-3.5 cm (3/16-1 3/8 in) wide, oblanceolate to spatulate; stem leaves sessile, smaller then basal leaves, lanceolate to oblong (see figs. 59 and 63); heads (see fig. 72) solitary; involucre (see fig. 72) 6-12 mm (1/4-1/2 in) high, 12-30 mm (1/2-1 3/16 in) wide, hairy; 30 to 80 straplike flowers, pink, purple or white, 8-16 mm (5/16-5/8 in) long, 1.5-3 mm (1/16-1/8 in) wide; disk corolla exceeding the whitish to tan pappus (see fig. 72).

USES: Unknown.

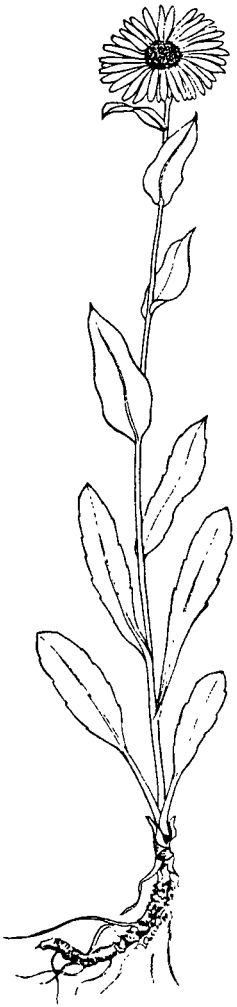

Figure 32.–Coastal fleabane, Erigeron peregrinus *(Pursh) Greene.*

Figure 33

Swertia perennis L.
Swertia. GENTIANACEAE.

Stem woody at base, straight, 1-6 dm (4-24 in) tall; basal leaves long stalked; stem leaves short stalked to sessile; leaves obovate to oblong-elliptic (see figs. 60, 63, and 64) becoming smaller toward top of plant; petals (see fig. 66) wheel shaped, 10-16 mm (3/8-5/8 in) long, dark bluish purple.

USES: Unknown.

Figure 33.--Swertia, Swertia perennis *L.*

Figure 34

Rubus arcticus L.
Nagoonberry. ROSACEAE.

Plant 0.3-3 dm (1 3/16-11 3/4 in) tall, more or less covered with short hairs; leaves palmately compound (see fig. 53) or three lobed; blade 1.5-5.5 cm (5/8-2 3/16 in) long, 2-9 cm (3/4-3 1/2 in) wide; flowers showy, usually solitary; petals (see fig. 66) pink to reddish pink. Leaves palmately three lobed, the lobes rounded, cordate to round; petals long and narrow.

USES: Berries richly flavored. Excellent eaten raw or can be used to make jams and jellies, or in flavoring liquor.

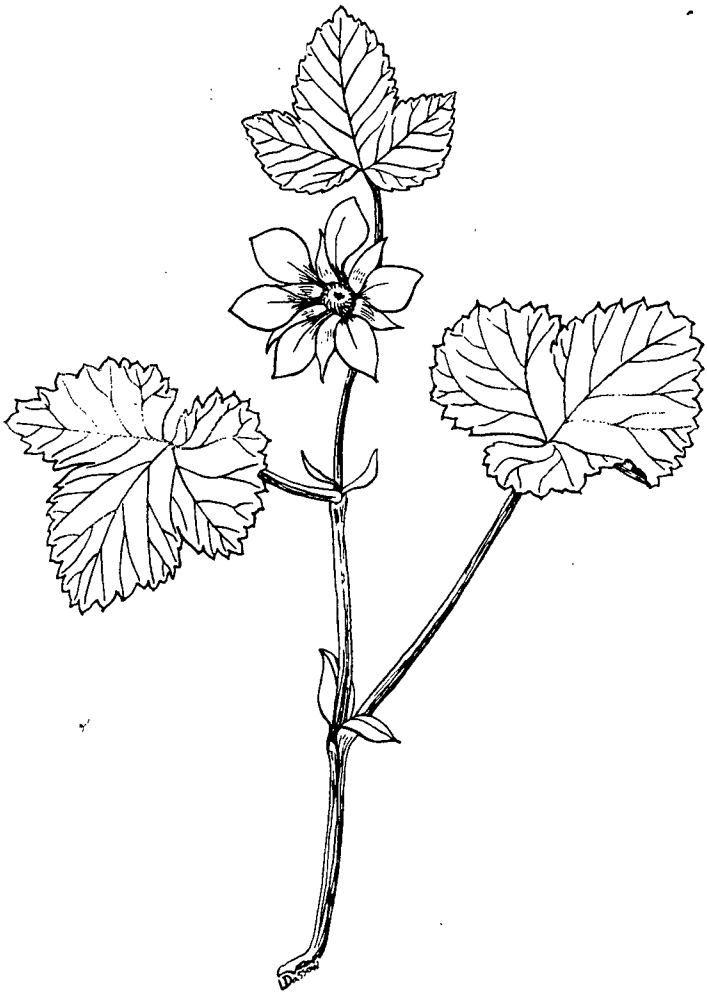

Figure 34.–Nagoonberry, Rubus arcticus *L.*

Figure 35

Rubus chamaemorus L.
Cloudberry; Baked-Appleberry. ROSACEAE.

Flowering stem erect, 0.2-3 dm (3/4-11 7/8 in) tall; thin creeping rootstock; leaves few, leathery, usually five lobed, 1.5-6.5 cm (5/8-2 9/16 in) long, 2-12 cm (3/4-4 3/4 in) wide; palmately (see fig. 51) veined flowers solitary, showy; petals (see fig. 66) white, 6-14 mm (1/4-9/16 in) long; fruit hard and red-tinged when immature, when ripe loosening from sepals, yellow and juicy.

USES: The fruit contains two and one-half to three time more vitamin C by weight, than do oranges. Ripened fruit has a "rotten-apple" taste but is delicious once a taste is acquired. It can be used to make Eskimo ice cream.

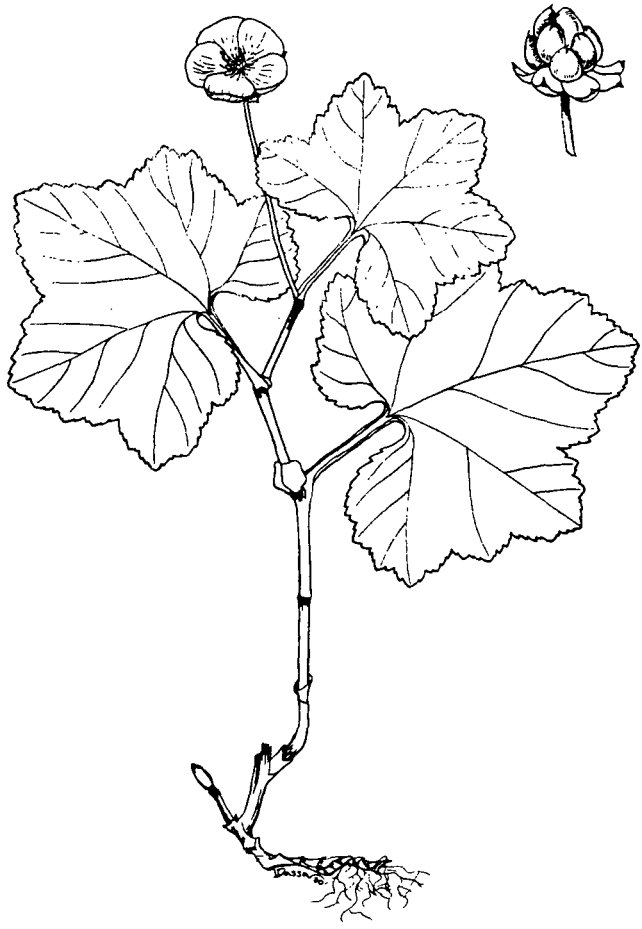

Figure 35.–Cloudberry, Rubus chamaemorus *L.*

Figure 36

Gentiana douglasiana Bong.
Swamp Gentian. GENTIANACEAE.

Plant 0.5-2.7 dm (2-10 5/8 in) tall, stem mostly branched; slender roots; basal leaves forming small rosette, ovate (see fig. 62), larger than stem leaves; flowers subtended by ovate bracts; petals (see fig. 66) white, cup shaped with a flaring rim, 9-14 mm (3/8-9/16 in) long, lobes spotted and streaked with bluish purple, the corolla tube yellowish green; tiny, two-lobed folds between larger lobes of petal.

USES: Unknown.

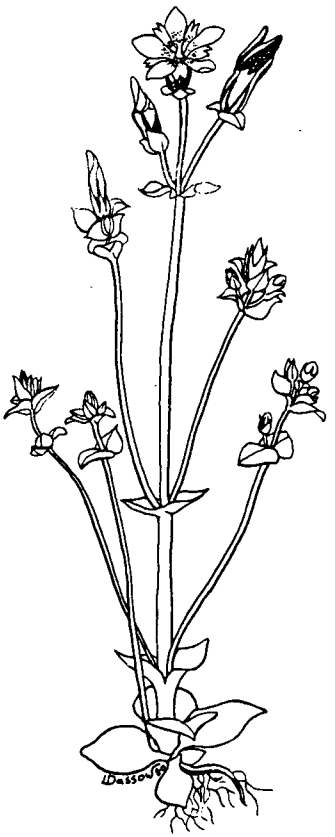

Figure 36.--Swamp gentian, Gentiana douglasiana *Bong.*

Figure 37

Parnassia palustris L.
Northern Grass-of-Parnassus. SAXIFRAGACEAE.

Rhizome short, stout; leaves chiefly basal, the stem a single, sessile bract near the middle; leaves 0.5-3 cm (3/16-1 3/16 in) long, 0.5-2 cm (3/16-3/4 in) wide, ovate, cordate or elliptic (see figs. 60, 62, and 65); flowers showy; petals white, 8-15 mm (5/16-5/8 in) long, seven to nine veins; staminodia dilated, with several slender hairs nearly as long as the stamens. *Parnassia fimbriata* Konig (fringed grass-of-Parnassus) also may be found. Petals fringed along the lower margins; staminodia mostly five to nine segments.

USES: Unknown.

Figure 37.–Northern grass-of-Parnassus, Parnassia palustris *L.*

Figure 38

Fauria crista-galli (Menzies) Makino
Deercabbage. MENYANTHACEAE.

Thick, fleshy, reddish brown rhizomes covered with remains of old leaves; leaves thick, 2-7 cm (3/4-2 3/4 in) long (from sinus to tip), 5-14 cm (2-5 1/2 in) wide, cordate (see fig. 65) to kidney shaped; margins finely rounded-toothed; flowers few to several, long naked stalk; petals (see fig. 66) white, wheel shaped, the tube 2-4 mm (1/8-3/16 in) long, lobes 5-6 mm (1/4-5/16 in) long, midvein and margins with wavy edges.

USES: Unknown.

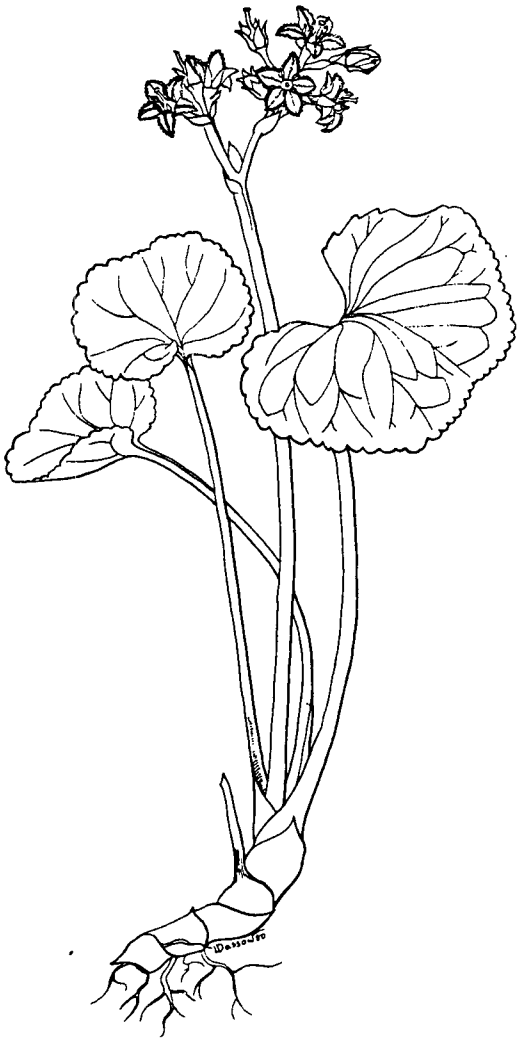

Figure 38.–Deer-cabbage, Fauria crista-galli *(Menzies) Makino.*

Figure 39

Trientalis europaea L. var. *europaea*
Arctic Starflower. PRIMULACEAE.

Plants 5-35 cm (2-14 in) tall; simple, erect stem arising from slender rhizomes; leaves simple, entire, alternate (see fig. 55) below a crowded whorl (see fig. 57); leaves obovate to lanceolate (see figs. 59 and 64) in whorl of five to six at top of stem; one to three flowers on long slender stalks; petals (see fig. 66) white or pinkish white, united at the base.

USES: Unknown.

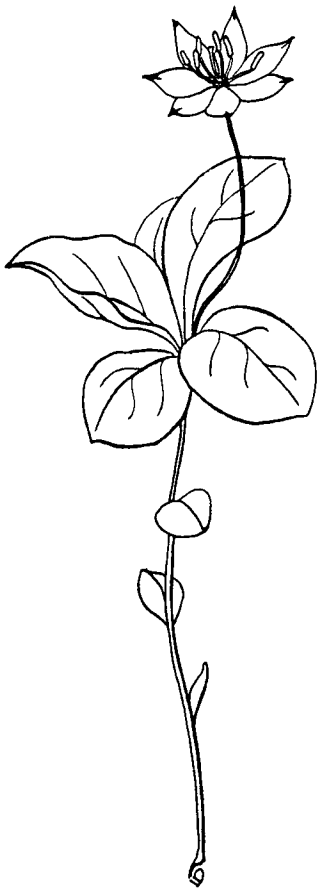

Figure 39.–Arctic starflower, Trientalis europaea *L. var.* europaea.

Figure 40

Cornus canadensis L.
Bunchberry. CORNACEAE.

Erect stem from creeping rhizome, 5-25 cm (2-10 in) tall; stem with one or two pairs of opposite (see fig. 56) small leaves and a whorl (see fig. 57) of four to six leaves below the flower; lateral veins arise from the midvein in the lower third of the leaf; white petallike bracts surrounding tiny grouped flowers; flowers yellowish green, entirely covered with white hairs; fruit red. *Cornus suecica* L. (Swedish dwarf cornel) also may be found and is similar to *C. canadensis* except it has three or more pairs of larger stem leaves below the whorl; lateral veins arise from the base of the leaf or nearly so; flowers purplish black, white hairs at base only. A cross between *C. canadensis* and *C. suecica,* representing a combination of characters (size, form, arrangement of leaves, and the color and hairiness of the flowers), may also be found.

USES: In Scotland in ancient times, it was called the "plant of gluttony" because of its supposed power to increase the appetite. Fruits may be eaten raw or cooked. Berries cooked with whey make a good pudding. A mild tea can be made from the roots to treat colic in infants. Leaves can be smoked as a substitute for tobacco.

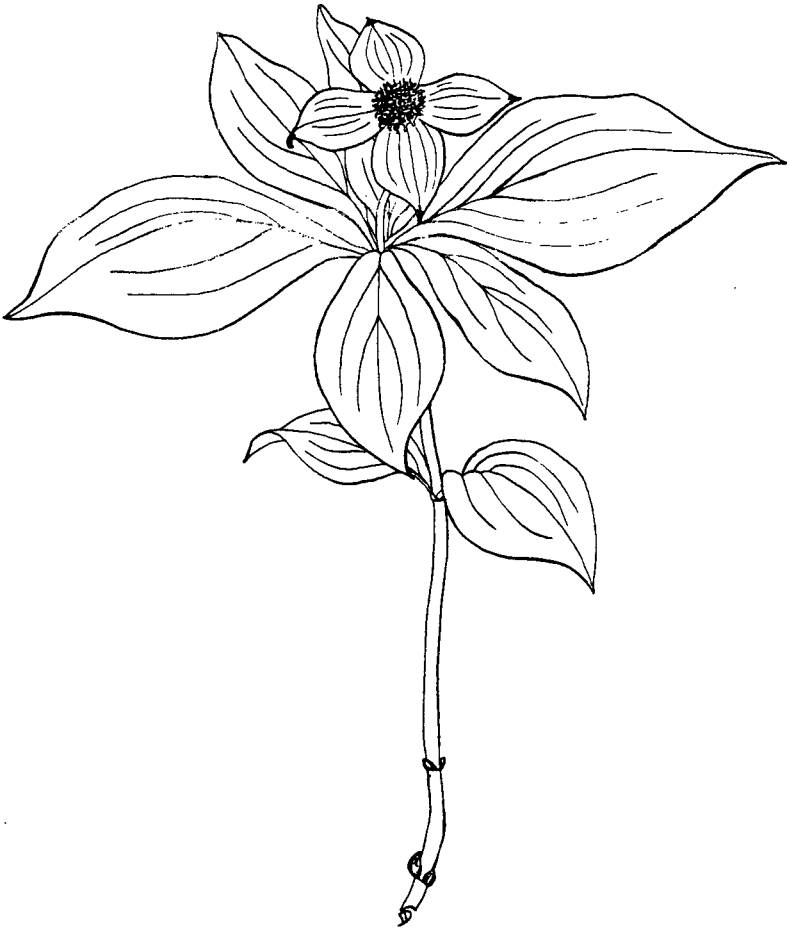

Figure 40.–Bunchberry, Cornus canadensis *L.*

Figure 41

Rubus pedatus Sm.
Fiveleaf Bramble. ROSACEAE.

Slender, trailing vine rooting at nodes, less than 1 dm (4 in) tall; leaves palmately compound (see fig. 54), with five leaf divisions, stalkless, obovate (see fig. 64), irregularly toothed; flowers single; petals (see fig. 66) white; fruit red.

USES: Fruit has good flavor and can be eaten either raw or cooked.

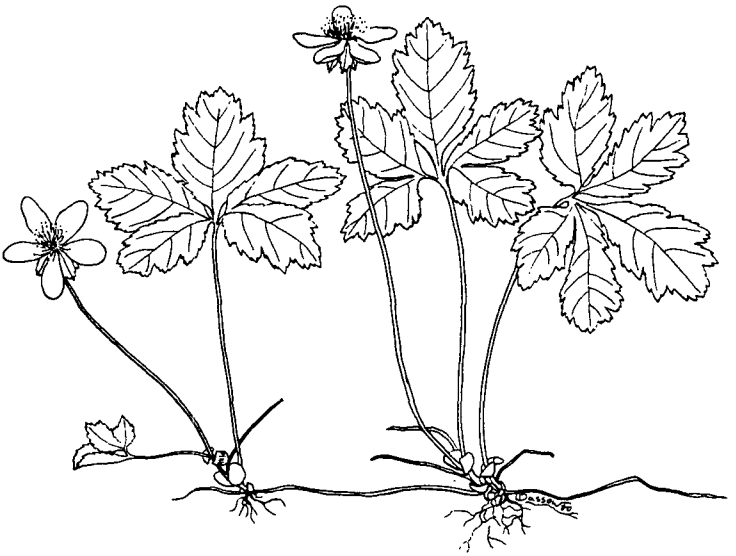

Figure 41.–Fiveleaf bramble, Rubus pedatus *Sm.*

Figure 42

Menyanthes trifoliata L.
Buckbean. MENYANTHACEAE.

Submerged, creeping, thick, black, scaly rhizome covered with bases of old leaves; leaf stalk 5-30 cm (2-12 in) long; three leaflets (see fig. 53), elliptic to oblanceolate or obovate (see figs. 60 and 64), 2-12 cm (1/8-4 3/4 in) long, 0.9-5 cm (3/8-2 in) wide; raceme (see fig. 70) long, leafless; petals (see fig. 66) white to pink, funnel shaped, the tube longer than the sepals; lobes with long beard of white hairs.

USES: Laplanders and Finns once used the rootstock in the making of "missen-bread" (famine-bread). Scandinavians cooked and ate the rhizome. The rootstock can be dried and ground into flour after washing several times to leach out the bitter principle. Buckbean leaves have a very bitter taste, but no odor, and have been used to make a bitter tonic. Large doses are said to have cathartic and sometimes emetic action. Buckbean tea was used to relieve fever and migraine headache and for indigestion, to promote appetite, and to eliminate intestinal worms. A large dose acts as a purge by inducing vomiting and evacuating the intestines at the same time. Buckbean tea was used externally to promote healing of ulcerous sores.

Figure 42.–Buckbean, Menyanthes trifoliata *L.*

Figure 43

Coptis trifolia (L.) Salisb.
Trifoliate Goldthread. RANUNCULACEAE.

Long slender, creeping, bright golden yellow root, much branched, frequently matted; 0.5-1.4 dm (2-5 1/2 in) tall; persistent through winter, dark green on upper surface, paler on lower surface; leaf divided into three leaflets (see fig. 53), leaflets sharply toothed; one flower; sepals (see fig. 66) white, often tinged with pink; follicles spreading, 5-10 mm (1/4-3/8 in) long, up to 12 in a cluster with long straight tips.

USES: Indians chewed the roots to treat mouth sores and made a tea of the plant to use as a wash for eye irritations and mouth sores. The plant was used in New England to treat fever blisters in children's mouths, to treat indigestion, and to restore strength after prolonged illness.

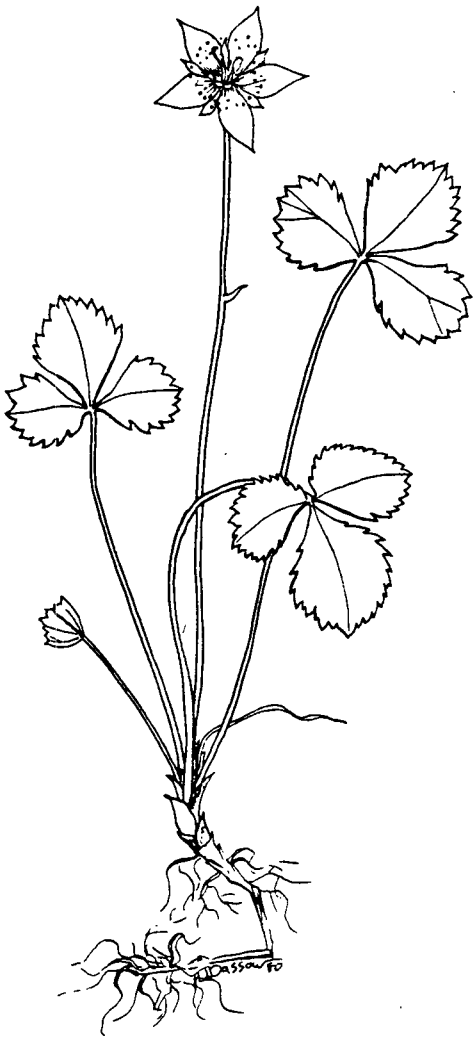

Figure 43.–Trifoliate goldthread, Coptis trifolia *(L.) Salisb.*

Figure 44

Coptis asplenifolia Salisb.
Fernleaf Goldthread. RANUNCULACEAE.

Plant 9-35 cm (3 1/2-14 in) tall; rhizome thick, bright yellow; leaves basal; leaf stalk 1.5-11 cm (4/16-4 3/8 in) long; leaves pinnate (see fig. 52) with sharply toothed segments; flower stalk leafless, usually two flowers; flowers white; follicles with short tips, spreading, 7-10 mm (5/16-3/8 in) long, up to 12 in a cluster.

USES: See trifoliate goldthread, figure 43, for uses.

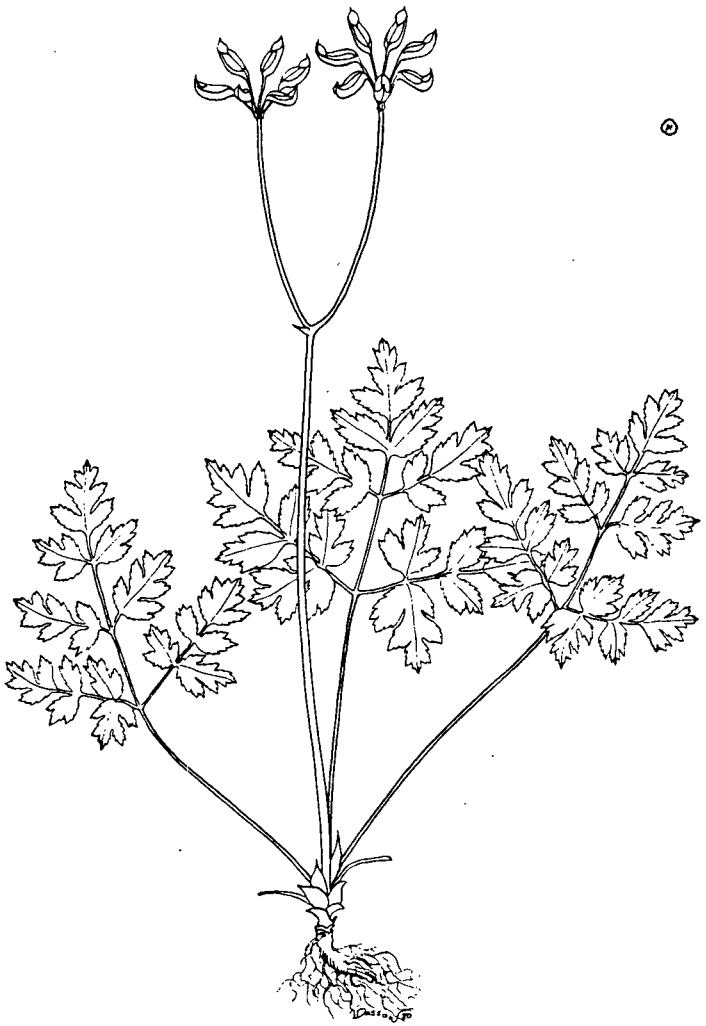

Figure 44.–Fernleaf goldthread, Coptis aspenifolia *Salisb.*

Figure 45

Sanguisorba stipulata Raf.
Sitka Burnet. ROSACEAE.

Plant 2-9 dm (7 7/8-36 in) tall; basal leaves 1-6 dm (4-24 in) long, pinnate (see fig. 52), 7 to 17, ovate to oblong, (see figs. 62 and 63) leaflets with sharp teeth in margins; stem leaves small, one to three; spikes (see fig. 69) 2.5-12.5 cm (1-5 in) long, greenish white; four stamens (see fig. 66), the filaments much longer than the sepals, flattened and expanded upwards, white. *Sanguisorba menziesii* Rydb. (menzies burnet) also may be found but is less common. Spikes short, 1-3 cm (3/8-1 1/4 in) long, rounded; flowers reddish purple.

USES: Young leaves are good in salads. The two main uses for burnet were to stop diarrhea and to coagulate blood to end hemorrhaging. One cup of burnet tea was taken in the course of a day, a mouthful at a time. A decoction of the root has been used for menopausal problems. As a cordial drink, it was used to promote perspiration; infused in wine and beer, it was used to cure gout.

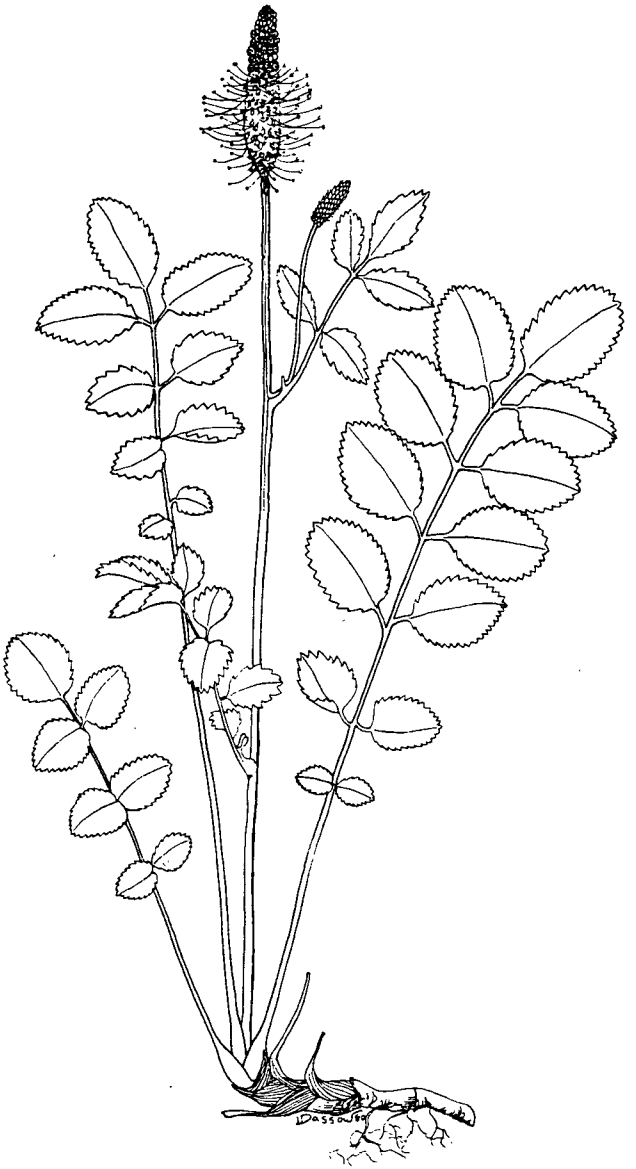

Figure 45.–Sitka burnet, Sanguisorba stipulata *Raf.*

Figure 46

Eriophorum angustifolium Honck.
Tall Cottongrass. CYPERACEAE

Creeping rhizomes; 1-9 dm (4-36 in) tall, covered basally with brown to purple persistent sheath; leaves usually flat below the middle, triangular channeled or folded above the middle; panicle (see fig. 71) with two to three long, purplish based leaves; two to ten spikes, some drooping; anthers (see fig. 66) 2.5-5 mm (1/8-3/16 in) long; scales grayish to black, ovate to lanceolate (see figs. 59 and 62), the midvein not reaching the point; achenes (see fig. 72) 2.5-3.5 mm (1/8 in) long; bristles numerous, white to cream. *Eriophorum gracile* Koch (slender cotton-grass) and *Eriophorum viridi-carinatum* (Engelm.) Fern. (green keeled cotton-grass) also may be found. *E. gracile* has linear (see fig. 58) leaves, channeled throughout; one-colored bract in the inflorescence, shorter than inflorescence. *E. viridicarinatum* has flat leaves, two or more leaflike bracts that are longer than the inflorescence; midrib of scales reach to tip; anthers 1-1.3 mm (1/16 in) long.

USES: Four to five inches of the stem base can be eaten raw. Two to three inches of the underground stem can be collected in autumn and the black covering removed by immersing the stem in boiling water. Eskimos called these "mouse nuts" because they are collected and stored by tundra mice.

Figure 46.–Tall cotton-grass, Eriophorum angustifolium *Honck.*

Figure 47

Eriophorum chamissonis C. A. Mey.
Russett Cotton-Grass. CYPERACEAE.

Creeping rhizomes; culms stout, straight, 2-7.5 dm (7 7/8-30 in) tall, covered basally with brown to purplish brown persistent sheaths; leaves channeled throughout, filiform, 0.4-1.3 mm (1/16 in or less) wide; usually one to three upper leaves below the middle of the stem; spikes solitary, erect, obovate or globose; lowermost scale 0.4-2 cm (1/8-13/16 in) long; upper scales with dark centers and clear margins; scales blackish to grayish; achene (see fig. 72) 1.7-2.7 mm (1/16-1/8 in) long, smooth along the margin near tip; bristles numerous, cinnamon to white. *Eriophorum brachyantherum* Trautv. & Mey. (short-anthered cotton-grass) and *Eriophorum scheuchzeri* Hoppe (white cotton-grass) also may be found. *E. brachyantherum* is densely tufted, not rhizomatous, commonly 3 dm (11 7/8 in) tall or more; sterile basal scales of spikelet commonly more than seven; upper leaf sheath borne above middle of stem. *E. scheuchzeri* arises from rhizomes, stems solitary or few; sterile basal scales of spikelet commonly less than seven; anthers 0.5-1.5 mm (1/32-1/16 in) long, bristles white.

USES: Unknown.

Figure 47.–Russett cotton-grass, Eriophorum chamissonis *C.A. Mey.*

Figure 48

Eleocharis palustris (L.) Roem. & Schult.
Creeping Spike-Rush. CYPERACEAE.

Stems very closely clustered, arising from brownish black rhizome, 1-7 dm (4-28 in) tall; leaf sheath purplish or reddish below; bladeless; spikes solitary, 0.5-2 cm (3/16-13/16 in) long, round or nearly so, subtended by two to three bracts encircling half the stem; scales 3-4 mm (1/8-3/16 in) long, reddish brown or purplish brown with clear margins; achene (see fig. 72) 1.2-1.8 mm (1/32-1/16 in) long, light yellow to brown; tubercle pear shaped, longer than broad, much smaller than achene; four bristles. Other species of *Eleocharis* may also be found.

USES: Unknown.

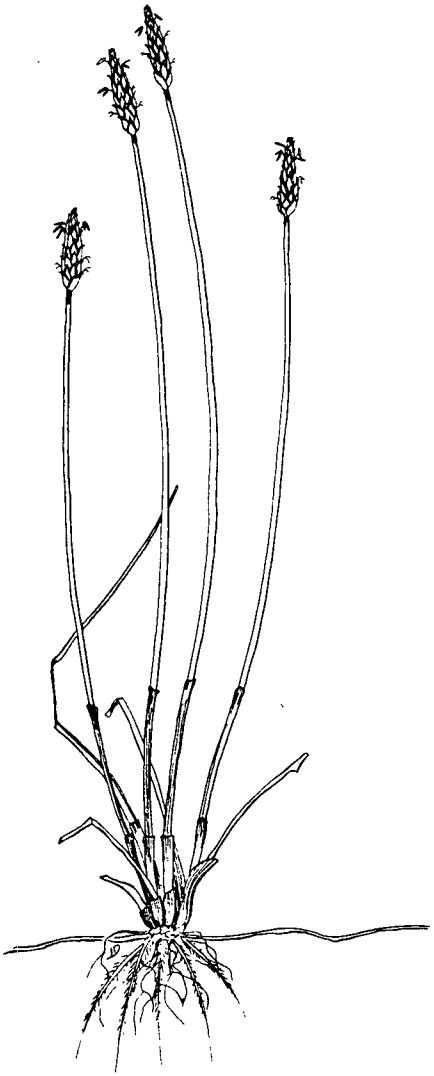

Figure 48.--Creeping spike-rush, Eleocharis palustris *(L.) Roem. & Schult.*

Figure 49

Scirpus caespitosus L.
Tufted Clubrush. CYPERACEAE.

Densely tufted, stems round, 0.5-4 dm (2-16 in) long, 1.5 mm (1/16 in) in diameter; leaf sheaths straw colored to brownish, blades lacking, upper leaf sheaths may have blades 5-8 mm (3/16-5/16 in) long; spikelet solitary, 3.5-6 mm (3/16-1/4 in) long, subtended by a solitary scale about as long as the spikelet; six bristles, smooth, about twice as long as the achene (see fig. 72).

USES: The root may be eaten raw, baked, or dried, or can be ground into a white flour. Young roots yield a sweet syrup when crushed and boiled . The base of the stem may be eaten raw.

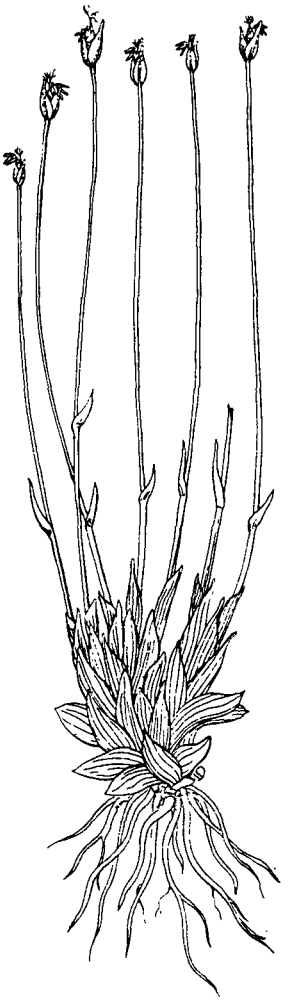

Figure 49.–Tufted clubrush, Scirpus caespitosus *L.*

Figures 50 through 74

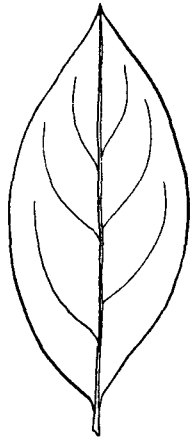

Figure 50.–Simple leaf; entire margin.

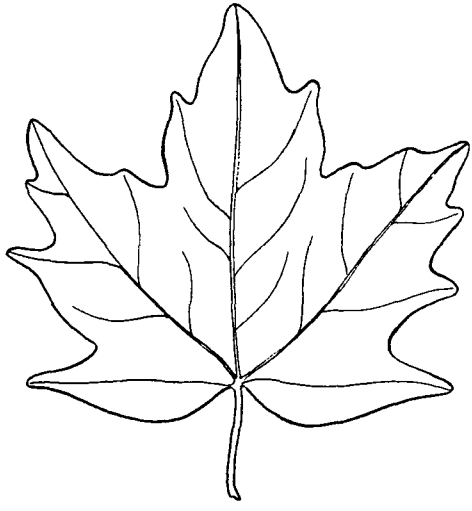

Figure 51.–Simple leaf; palmately lobed.

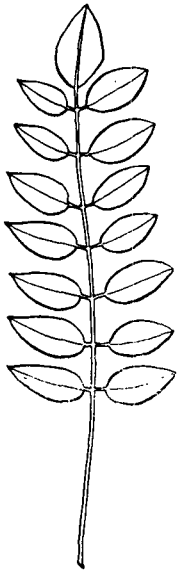

Figure 52.–Pinnately compound.

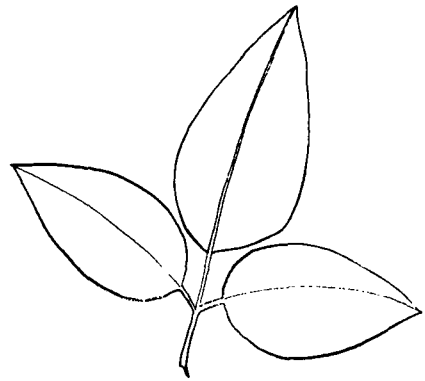

Figure 53.–Ternately compound.

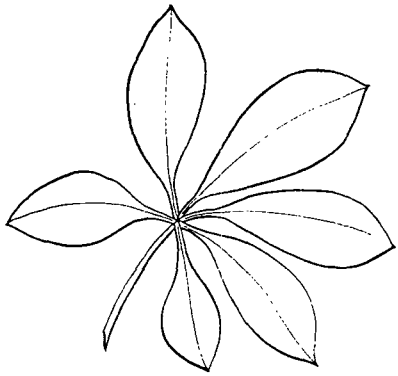

Figure 54.–Palmately compound.

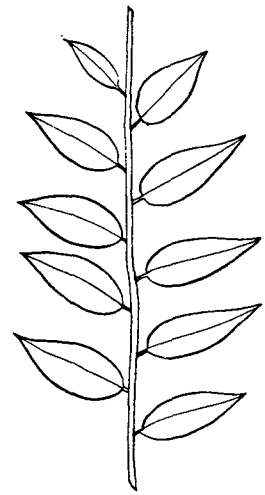

Figure 55.–Alternate arrangement.

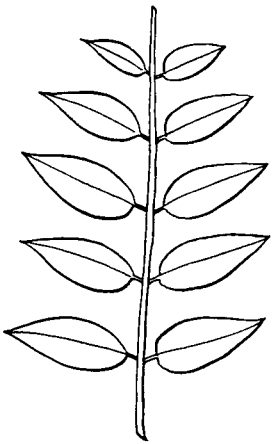

Figure 56.–Opposite arrangement.

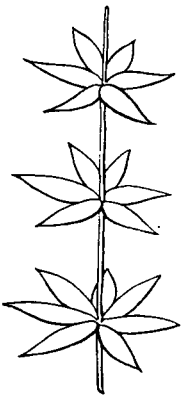

Figure 57.–Whorled arrangement.

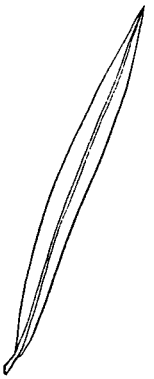

Figure 58.–Linear leaf.

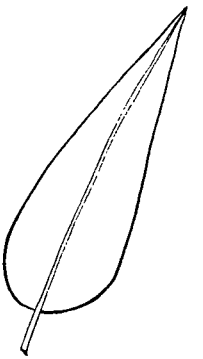

Figure 59.–Lanceolate leaf.

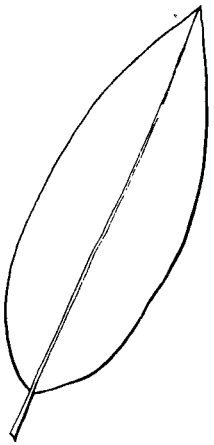

Figure 60.–Elliptic leaf.

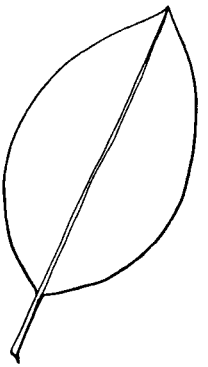

Figure 61.–Oval leaf.

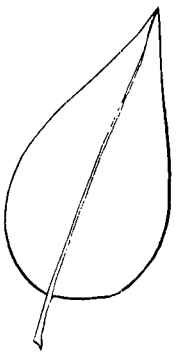

Figure 62.–Ovate leaf.

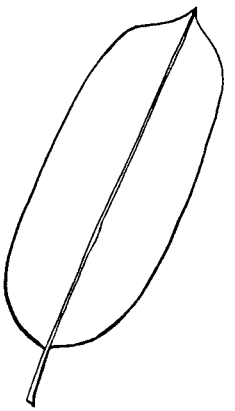

Figure 63.–Oblong leaf.

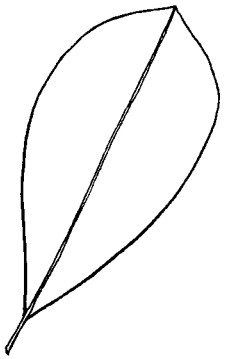

Figure 64.–Obovate leaf.

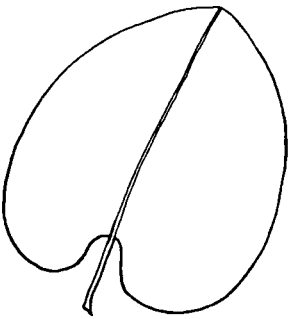

Figure 65.–Cordate leaf.

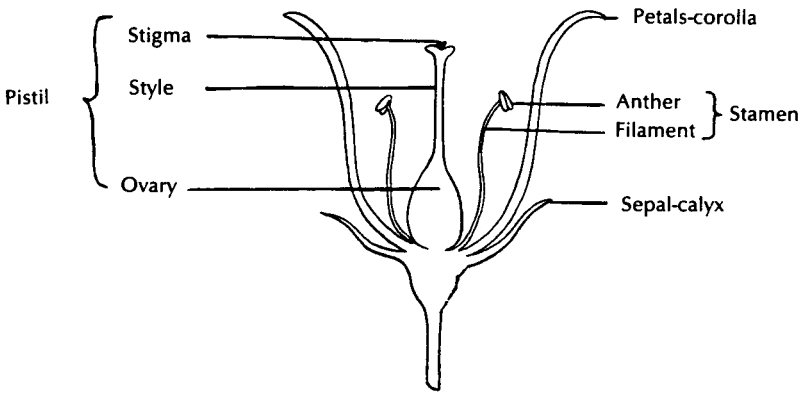

Figure 66.–Flower parts.

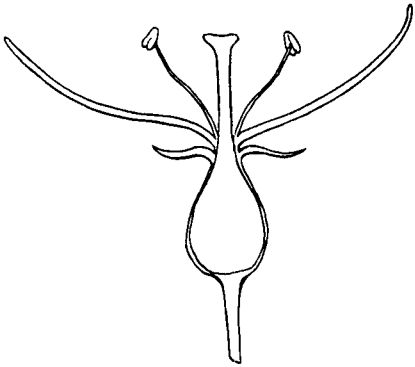

Figure 67.–Inferior ovary.

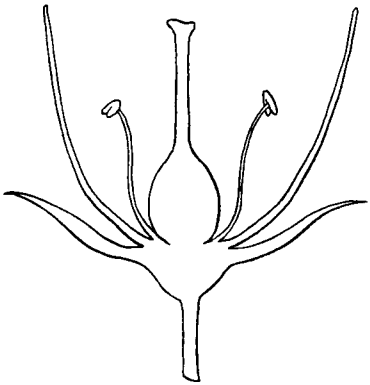

Figure 68.–Superior ovary.

Figure 69.–Spike inflorescence.

Figure 70.–Raceme inflorescence.

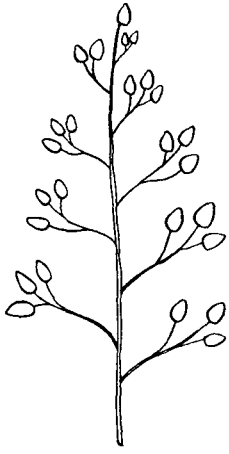

Figure 71.–Panicle inflorescence.

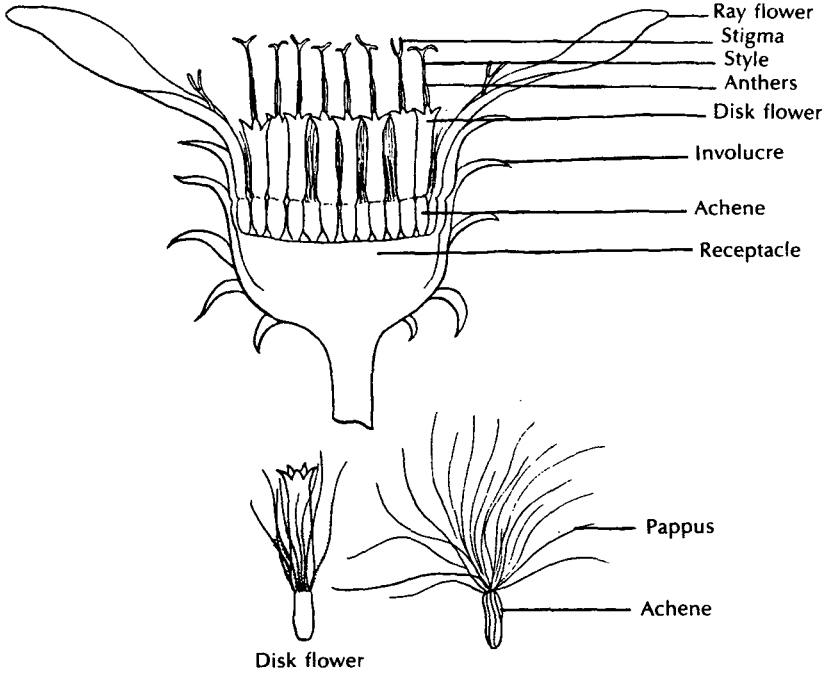

Figure 72.–Head inflorescence.

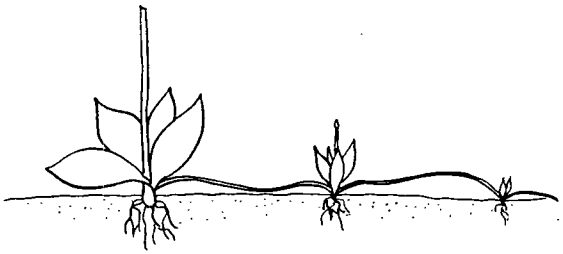

Figure 73.–Stolon.

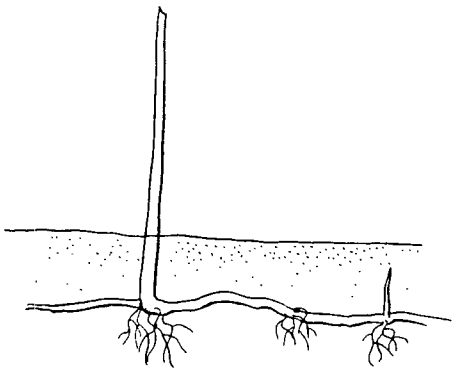

Figure 74.–Rhizome.

Achene: A small, dry, one-seeded closed fruit in which the ovary wall is free from the seed (see fig. 72).

Acrid: Sharp; irritating or biting to the taste.

Alternate: Arrangement of leaves or other plant parts occurring singly at a node (see fig. 55).

Anther: The portion of a stamen that contains the pollen (see fig. 66).

Aquatic: Living in water.

Axil: The angle between a branch or leaf and the axis (main branch) from which it arises.

Basal: Situated at or growing from the base of the stem or from the root.

Berry: A simple fleshy or pulpy fruit with several seeds.

Blade: The expanded part of a leaf (see fig. 50).

Bloom: The white, waxy surface covering of a leaf, berry, etc., that will readily rub off.

Bract: A small leaf from the axil of which a flower or a floral axis arises; also a small leaf just below the flower or flower cluster.

Bristle: A stiff hair.

Bulb: An underground leaf bud with fleshy scales; e.g., an onion.

Calyx: The outermost series of the perianth of a flower, usually green in color; the sepals as a whole.

Capillary: Very slender and hairlike.

Capsule: A dry, dehiscent (opening by definite pores or slits) fruit made up of more than one simple pistil.

Caryopis: A dry, indehiscent (nonsplitting) fruit in which the seed is attached to the ovary wall.

Channeled: A parallel series of grooves.

Clasping: Usually refers to a leaf without a petiole with the lower edges of the blade partly or completely surrounding the stem.

Compound leaf: A leaf divided into two or more parts or leaflets (see figs. 52 and 54).

Cone: A dry multiple fruit of spruce, pine, and other conifers, consisting of overlapping scales.

Cordate: Heart shaped–often referring to leaves having the petiole attached at the broad, notched end (see fig. 65).

Corolla: The petals of a flower, collectively (see fig. 66).

Culm: The specialized stem of grasses, sedges, and rushes.

Deciduous: Falling off; losing leaves in autumn.

Decoction: An extract produced by boiling in water to remove the flavor or principle.

Disk: The central part of the *Compositae* flower head bearing tubular flowers (see fig. 72).

Elliptic: Broadest at the middle, the ends rather equal. The length is at least twice the width (see fig. 60).

Entire: Describing an even margin without teeth or lobes (see fig. 50).

Evergreen: Having green leaves or needles throughout the year.

Fertile: Capable of reproduction.

Filament: That part of the stamen that supports the anther (see fig. 66).

Filiform: Threadlike–long and slender.

Flower: A modified stem concerned with the production of seeds. Usual parts are outer whorl-sepals, whorl-petals, stamens, and pistil.

Foliolate: Having leaves.

Follicle: A dry, one-celled pod or fruit, having one suture (seam or line of fusion) and splitting along this suture to release seeds.

Frond: The leaf of a fern.

Fruit: A ripened ovary and any other structures that enclose it at maturity.

Glabrous: Smooth, no hairs present.

Gland: An organ or protuberance on or embedded in a plant surface, often secreting a sticky substance.

Glandular: Having or bearing glands.

Globose: Shaped like a globe; earthlike.

Head: A dense cluster of sessile flowers (see fig. 72).

Herb: A plant without a woody stem above the ground, usually dying to the ground in autumn.

Hood: A helmet-shaped part of the perianth.

Infusion: The liquid extract attained from the process of steeping or soaking a plant part in water.

Inferior: In reference to a plant part positioned below another organ, as an inferior ovary with the flower parts inserted around the top (see fig. 67).

Inflorescence: General distribution and arrangement of flowers on a stem (see figs. 69 through 72).

Keel: A central dorsal ridge; e.g., the keel of a boat.

Lanceolate: Lance shaped, broadest toward the base and tapering to tip (see fig. 59).

Leaflets: A single division of a compound leaf (see figs. 52 and 53).

Linear: Narrow and flat with sides parallel (see fig. 58).

Lip: Either the upper or lower division of a two-lipped corolla.

Lobe: Any division of an organ, especially if rounded (see fig. 51).

Margin: The edge of a leaf.

Membranous: Appearing as a pliable, thin, often translucent skin or film, as between layers of an onion.

Midvein: The central vein or rib of a leaf.

Needle: A modified leaf that is long, slender, rather rigid, and more or less sharp at the apex.

Node: The place on the stem where leaves or branches normally originate.

Oblanceolate: Inverse of lanceolate; attached at the tapered end.

Oblong: Two to four times longer than wide and with nearly parallel sides (see fig. 63).

Obovate: Inversely ovate, attached at the narrow end (see fig. 64).

Opposite: Situated directly across from each other at the same node (see fig. 56).

Oval: The width greater than one half the length (see fig. 61).

Ovary: The swollen basal portion of a pistil; the part containing the ovules or seeds (see fig. 66).

Ovate: Egg shaped in outline, with the base broader than the tip (see fig. 62).

Palmate: Hand shaped; resembling the open, spread hand. The lobes or divisions attached at the base (see fig. 51).

Panicle: A compound or branched raceme with two or more flowers on each branch, with the younger flowers nearest the tip (see fig. 71).

Pappus: The modified calyx in *Compositae* forming a crown of hair at the top of the achene (see fig. 72).

Parallel: Usually refers to veins that are the same size and that run in the same direction.

Pedicel: Any slender stalk, especially one that supports a fruiting or spore-bearing organ. The stalk to a single flower of an inflorescence.

Perianth: Used when the calyx and corolla cannot be readily distinguished.

Persistent: Remaining attached for a long time.

Petal: A leaflike part of the corolla, usually colored and showy (see fig. 66).

Petiole: The slender stem that supports the blade of a foliage leaf; a leafstalk.

Pinna(e): The primary or main division of a pinnately compound leaf (see fig. 52).

Pinnate: Referring to pinnately compound leaves; leaflets arranged on each side of a common stem (see fig. 52).

Pistil: The seed-bearing organ of a flower, consisting when complete of an ovary, style, and stigma (see fig. 66).

Raceme: A type of simple inflorescence in which the individual flowers are borne on pedicels along a more or less elongated axis with the younger flowers nearest the tip (see fig. 70).

Ray: One of the flowers of a head infloresence (see fig. 72) with a strap-shaped petal.

Rhizome: A prostrate elongated underground stem (see fig. 74).

Rosette: A cluster of leaves attached at the base of a plant near the ground.

Scale: A thin, dry, membranous body, usually a degenerative leaf.

Scarious: Thin, dry, membranous, and more or less translucent; not green.

Seed: The matured ovule, consisting of embryo and its coats, with a supply of food.

Sepal: One of the parts of the outer whorl of the flower, usually resembling a small green leaf (see fig. 66).

Sessile: Without a stalk.

Sheath: A tubular envelope, usually that part of the leaf of a sedge or grass that clasps the stem.

Shrub: A woody, perennial plant smaller than a tree and usually with several basal stems.

Simple: Of only one part, not completely divided into separate segments. Refers to a leaf not compounded into leaflets (see fig. 50).

Sinuses: The depression or recess between two lobes.

Sori: A cluster or grouping of spore-containing bodies on a fern frond.

Spathe: A large bract enclosing an inflorescence.

Spatulate: Broad and rounded at tip and tapering at base.

Spore: The primitive reproductive body of ferns and club-mosses, typically unicellular.

Spray: A cluster or a mass of small, twiglike branches.

Spur: A hollow, saclike part of the flower.

Stamen: The pollen-bearing organ of a flower consisting of a filament and anther (see fig. 66).

Staminodia: A sterile stamen; lacking an anther.

Stigma: The apex of the pistil; the part that receives the pollen (see fig. 66.)

Stolon: A trailing shoot above ground that roots at the nodes (see fig. 73).

Stomata: A small opening on the surface of a leaf through which gaseous exchange occurs.

Style: A prolongation of the ovary commonly bearing the stigma (see fig. 66).

Subtended: Situated closely beneath.

Succulent: Fleshy and full of juice.

Superior: In reference to a plant part positioned above another organ, as a superior ovary with the flower parts inserted below it (see fig. 68).

Sword: A plant part that is long, slender, and pointed like the blade of a knife.

Terminal: Proceeding from or attached to the end of a stem or branch.

Ternate: Consisting of threes; arranged in threes (see fig. 53).

Throat: The opening of a sympetalous (petals united to form a tube) corolla.

Tree: A perennial woody plant, normally with one main trunk and a more-or-less distinct and elevated top.

Vegetative: In reference to parts of plants concerned with growth and nutrition as opposed to reproduction.

Whorl: An arrangement of three or more leaves at one node (see fig. 57).

Wood: The hard, fibrous substance beneath the bark that makes up the greater part of the stems and branches of trees and shrubs.

Woolly: Long, soft, interwoven hair; matted hair.

Index of Botanical Names

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