

1. *C. calyculata*, Don. Leaves oblong, obtuse, flat. — Bogs, Newf. to Minn., and south to Ga.

## 11. CASSIOPE, Don.

Calyx without bractlets, of 4 or 5 nearly distinct ovate sepals, imbricated in the bud. Corolla broadly campanulate, deeply 4-5-cleft. Stamens 8 or 10; anthers fixed by the apex; the ovoid cells each opening by a large terminal pore, and bearing a long recurved awn behind. Capsule ovoid or globular, 4-5-celled, 4-5-valved; the valves 2-cleft; placenta many-seeded, pendulous from the summit of the columella. Seeds smooth and wingless. — Small, arctic or alpine evergreen plants, resembling Club-Mosses or Heaths. Flowers solitary, nodding on slender erect peduncles, white or rose-color. (*Cassiope* was the mother of Andromeda.)

1. *C. hypnoides*, Don. Tufted and procumbent, moss-like (1-4' high); leaves needle-shaped, imbricated; corolla 5-cleft; style short and conical. — Alpine summits of N. New Eng. and N. Y., and high northward.

## 12. CALLUNA, Salisb. HEATHER. LING.

Calyx of 4 colored sepals. Corolla bell-shaped, 4-parted, much shorter and less conspicuous than the calyx, both becoming scarious and persistent. Stamens 8, distinct; anthers with a pair of deflexed appendages on the back, the cells opening each by a long chink. Capsule 4-celled, septically 4-valved. — Evergreen undershrub, with no scaly buds, opposite and minute leaves (mostly extended at base into 2 sharp auricles), crowded and imbricated on the branches. Flowers axillary, or terminating very short shoots and crowded on the branches, forming close mostly one-sided spikes or spike-like racemes, rose-colored or sometimes white, small, bracted by 2 or 3 pairs of leaves, the innermost of which are more or less scarious. (Named from *καλλύνω*, to brush or sweep, brooms being made of its twigs.)

1. *C. vulgaris*, Salisb. Low grounds, Mass., at Tewksbury and W. Andover; Maine, at Cape Elizabeth; also N. Scotia, C. Breton, Newf., etc. Probably only introduced.

Two European heaths, *ERICA CINEREA* and *E. TETRALIX*, have been found in small patches on Nantucket Island.

## 13. BRYANTHUS, Steller.

Corolla urn-shaped or bell-shaped, 5-toothed or 5-cleft, deciduous. Stamens 10; anthers pointless, shorter than the filaments, opening by terminal pores. Capsule 5-celled, 5-valved, septical (as are all the succeeding), many-seeded. — Low alpine Heath-like evergreen undershrubs, clothed with scattered linear and obtuse smooth or rough-margined leaves. Flowers usually nodding on solitary or umbelled peduncles at the summit of the branches. Our species belongs to § *Phyllodoce*. (*Βρύον*, moss, and *ἄνθος*, flower, because growing among mosses.)

1. *B. taxifolius*, Gray. Calyx pubescent; corolla oblong-urn-shaped, 5-toothed, purplish, smooth; style included. (*Phyllodoce taxifolia*, Salisb.) — Alpine summits of the mountains of N. H. and Maine, and northward. July.

## 14. KÁLMIA, L. AMERICAN LAUREL.

Calyx 5-parted. Corolla between wheel-shaped and bell-shaped, 5-lobed, furnished with 10 depressions in which the 10 anthers are severally lodged; filaments long and thread-form. Capsule globose, 5-celled, many-seeded. — Evergreen mostly smooth shrubs, with alternate or opposite entire coriaceous leaves, naked buds, and showy flowers. (Dedicated to *Peter Kalm*, a pupil of Linnæus, who travelled in this country about the middle of the last century, afterwards Professor at Abo.)

§ 1. Flowers in simple or clustered naked umbel-like corymbs; pedicels from the axils of small and firm foliaceous persistent bracts; calyx smaller than the pod, persistent; leaves and branches glabrous, or nearly so.

1. *K. latifolia*, L. (CALICO-BUSH. MOUNTAIN LAUREL. SPOON-WOOD.) Leaves mostly alternate, bright green both sides, ovate-lanceolate or oblong, acute at each end, petioled; flowers profuse, large and very showy, varying from deep rose-color to nearly white; corymbs terminal, many-flowered, clammy-pubescent; pod depressed, glandular. — Rocky hills and damp soil, Canada and Maine, chiefly along the mountains to W. Fla., west to Ohio, Ky., and Tenn. Usually a shrub 4-8° high, but in the mountains from Penn. southward forming dense thickets and often tree-like (10-30° high). May, June.

2. *K. angustifolia*, L. (SHEEP LAUREL. LAMBRILL. WICKY.) Shrub 1-3° high; leaves commonly opposite or in threes, pale or whitish underneath, light green above, narrowly oblong, obtuse, petioled; corymbs lateral (appearing later than the shoots of the season), slightly glandular, many-flowered; pod depressed, nearly smooth; pedicels recurved in fruit. — Hillsides, Newf. to Mich., south to N. Ga.; common. May, June. The flowers more crimson and two thirds smaller than in the last.

3. *K. glauca*, Ait. (PALE LAUREL.) Branchlets 2-edged; leaves opposite, nearly sessile, oblong, white-glaucous beneath, with revolute margins; corymbs terminal, few-flowered, smooth; bracts large; flowers  $\frac{1}{2}$ ' broad, lilac-purple; pod ovoid, smooth. — Cold peat-bogs and mountains, Newf. to Penn., Minn., and northward. May, June. — Straggling, about 1° high.

§ 2. Flowers scattered, solitary in the axils; calyx leafy, larger than the pod, nearly equalling the corolla, deciduous; leaves and branches bristly-hairy.

4. *K. hirsuta*, Walt. Branches terete; leaves oblong or lanceolate (4" long), becoming glabrous. — Sandy pine-barren swamps, S. E. Va. to Fla. May-Sept. — Shrub 1° high; corolla rose-color.

## 15. MENZIESIA, Smith.

Calyx very small and flattish, 4-toothed or 4-lobed. Corolla cylindraceous-urn-shaped and soon bell-shaped, obtusely 4-lobed. Stamens 8, included; anther-cells opening at the top by an oblique pore. Capsule ovoid, woody, 4-celled, 4-valved, many-seeded. Seeds narrow, with a loose coat. — A low shrub; the straggling branches and the alternate deciduous leaves usually hairy and ciliate with rusty rather chaff-like bristles. Flowers small, developed with the leaves, in terminal clusters from scaly buds, greenish-white and purplish, nodding. (Named for *Archibald Menzies*, who in Vancouver's voyage brought the original species from the Northwest Coast.)



1. *M. glabélla*, Gray. Strigose-chaffy scales mostly wanting; leaves obovate, barely mucronate-tipped, glabrous or nearly so (1-2' long); filaments ciliate below; capsule glabrous or nearly so; seeds long-caudate at each end. — Minnesota Point, L. Superior, and northwestward.

2. *M. globulâris*, Salisb. More or less chaffy, 2-5° high; leaves obovate-oblong, prominently glandular-mucronate, strigose-hirsute especially above; filaments glabrous; capsule beset with short gland-tipped bristles; seeds merely apiculate. (*M. ferruginea*, var. *globularis*, of Manual.) — In the Alleghanies from Penn. to Ga.

# 16. RHODODÉNDRON, L. ROSE BAY, AZALEA, etc.

Flowers almost always 5-merous. Calyx mostly small or minute. Corolla various (but not contracted at the orifice), lobed or cleft, or even parted, often somewhat irregular. Stamens sometimes as few as the corolla-lobes, more commonly twice as many, usually declined; anther-cells opening by a round terminal pore. Capsule 5-celled, 5-valved, many-seeded. Seeds scale-like. — Shrubs or small trees, of diverse habit and character, with chiefly alternate entire leaves, and large and showy flowers in umbelled clusters from large scaly-bracted terminal buds. (*Ῥοδόνδρον*, rose-tree; the ancient name.)

§ 1. AZALEA. Leaves deciduous, glandular-mucronate; stamens (5 to 10) and style more or less exerted and declined.

\* Flower-buds of numerous much imbricated scales; corolla with conspicuous funnel-form tube; stamens (chiefly 5) and style long-exserted; 3-10° high, with leaves obovate to oblong-oblancoate.

+ Flowers appearing after the leaves.

1. *R. arboréscens*, Torr. (SMOOTH AZALEA.) Branchlets smooth; leaves obovate, obtuse, very smooth both sides, shining above, glaucous beneath, the margins bristly-ciliate; calyx-lobes long and conspicuous, corolla slightly clammy. (*Azalea arborescens*, Pursh.) — Mountains of Penn. to N. C. June. Rose-colored flowers very fragrant.

2. *R. viscosum*, Torr. (CLAMMY A. WHITE SWAMP-HONEYSUCKLE.) Branchlets bristly, as well as the margins and midrib of the oblong-obovate otherwise smooth leaves; calyx-lobes minute; corolla clammy, the tube much longer than the lobes. (*Azalea viscosa*, L.) — Swamps, mostly near the coast, Canada and Maine, to Fla. and Ark. June, July. — Var. *glabrum*, Gray. Leaves paler, often white-glaucous underneath or on both sides, sometimes rough-hairy. N. Eng. to Va. — Var. *nitidum*, Gray. Dwarf, with oblanceolate leaves green both sides. Mountains, N. Y. to Va.

+ + Flowers appearing before or with the leaves.

3. *R. nudiflorum*, Torr. (PURPLE A. PINXTER-FLOWER.) Leaves downy underneath; tube of the corolla scarcely longer than the ample lobes, slightly glandular. (*Azalea nudiflora*, L.) — Swamps, Canada to Fla., Ill., Mo., and Tex. April, May. The showy flowers vary from flesh-color to pink and purple. There are numberless varieties, some of them with 10 stamens.

4. *R. calendulaceum*, Torr. (FLAME-COLORED AZALEA.) Leaves hairy; tube of the corolla shorter than the lobes, hairy. (*Azalea calendulacea*,

*Michx.*) — Woods, mountains of Penn. to Ga. May. Covered just when the leaves appear with a profusion of large orange blossoms, usually turning to flame-color, not fragrant.

\* \* Flower-buds of fewer and early caducous scales; corolla irregular, with short or hardly any tube, anteriorly divided to the base; the limb equalling the 10 stamens and style.

5. *R. Rhodora*, Don. Young parts sparingly strigose-hairy (1-2° high); leaves oblong, pale, more or less pubescent; corolla hardly 1' long, purplish-rose-color, bilabiate, with the posterior lip 3-lobed, the anterior of 2 oblong-linear and recurving nearly or quite distinct petals. (*Rhodora Canadensis*, L.) — Cool bogs, Newf. and N. Eng. to mountains of Penn.

§ 2. RHODODÉNDRON proper. Leaves coriaceous and persistent; stamens (commonly 10) and style rarely exerted, somewhat declined, or sometimes equally spreading.

6. *R. maximum*, L. (GREAT LAUREL.) Leaves 4-10' long, very thick, elliptical-oblong or lance-oblong, acute, narrowed toward the base, very smooth, with somewhat revolute margins; pedicels viscid; corolla bell-shaped, 1' broad, pale rose-color or nearly white, greenish in the throat on the upper side, and spotted with yellow or reddish. — Damp deep woods, rare from Maine to Ohio, but very common through the Alleghanies from N. Y. to Ga. July. — Shrub or tree 6-35° high.

7. *R. Catawbiense*, Michx. Leaves oval or oblong, rounded at both ends, smooth, pale beneath (3-5' long); corolla broadly bell-shaped, lilac-purple; pedicels rusty-downy. — High Alleghanies, Va. to Ga. June. Shrub 3-6° (rarely 20°) high.

8. *R. Lappónicum*, Wahl. Dwarf, prostrate in broad tufts (6' high); leaves (4' long) elliptical, obtuse, dotted (like the branches) with rusty scales; umbels few-flowered; corolla open bell-shaped, dotted, violet-purple; stamens 5-10. — Alpine summits of northern N. Y. and N. Eng., to the Arctic Coast. July. (Arct. Eu. and Asia.)

# 17. LÉDUM, L. LABRADOR TEA.

Calyx 5-toothed, very small. Corolla of 5 obovate and spreading distinct petals. Stamens 5-10; anthers opening by terminal pores. Capsule 5-celled, splitting from the base upward, many-seeded; placentæ borne on the summit of the columella. — Low shrubs, with the alternate entire leaves clothed with rusty wool underneath, persistent, the margins revolute; herbage slightly fragrant when bruised. Flowers white, small, in terminal umbel-like clusters from large scaly buds; bracts or scales thin and caducous. (*Λῆδον*, the ancient Greek name of the Cistus.)

1. *L. latifolium*, Ait. Erect, 1-3° high; leaves oblong or linear-oblong (1-2' long), mostly 4' wide, very obtuse; stamens 5-7; capsule oblong, acutish. — N. Eng. to Penn., Mich., Minn., and northward, in cold bogs and mountain woods.

*L. palustre*, L., with linear leaves, 10 stamens, and short-oval capsule, is found in Newfoundland and northwestward. (Eu.)



18. *LEIOPHYLLUM*, Pers. SAND MYRTLE.

Calyx 5-parted. Corolla of 5 distinct obovate-oblong petals, spreading. Stamens 10, exserted; anthers opening lengthwise. Style filiform. Capsule 2-3-celled, splitting from the apex downward, many-seeded. — A low much-branched evergreen, with the aspect, foliage, etc., of the last genus, but the crowded leaves sometimes opposite, scarcely petioled. Flowers small, white, in terminal umbel-like clusters. (Name formed of *λεῖος*, smooth, and *φύλλον*, leaf.)

1. *L. buxifolium*, Ell. Shrub 6-10' high; leaves oval or oblong, smooth and shining, 3-6" long. — Sandy pine barrens, N. J. to Fla. May.

19. *LOISELEURIA*, Desv. ALPINE AZALEA.

Calyx 5-parted, nearly as long as the bell-shaped and deeply 5-cleft regular corolla. Stamens 5, not declined, included; anthers opening lengthwise. Style short. Capsule ovoid, 2-3-celled, many-seeded, 2-3-valved; valves 2-cleft from the apex; placentæ borne on the middle of the columella. — A small depressed shrubby evergreen, much branched and tufted, smooth, with coriaceous opposite elliptical leaves, on short petioles, with revolute margins. Flowers small, white or rose-color, 2-5 in a cluster, from a terminal scaly bud; scales or bracts thick and persistent. (Named for *Loiseleur-Delongchamps*, a French botanist.)

1. *L. procumbens*, Desv. — Alpine summits of the White Mountains, N. H., and northward. June. (Eu., Asia.)

20. *CLËTHRA*, Gronov. WHITE ALDER.

Calyx of 5 sepals, imbricated in the bud. Corolla of 5 distinct obovate-oblong petals. Stamens 10, often exserted; anthers arrow-shaped, erect in the bud, becoming inverted and opening by basal pores or short slits. Style slender, 3-cleft at the apex. Capsule 3-valved, 3-celled, many-seeded, enclosed in the calyx. — Shrubs or trees, with alternate serrate deciduous leaves, and white flowers in terminal hoary racemes. Bracts deciduous. (*Κλήθρα*, the ancient Greek name of the Alder, which this genus somewhat resembles in foliage.)

1. *C. alnifolia*, L. (SWEET PEPPERBUSH.) Shrub 3-10' high; leaves wedge-obovate, sharply serrate, entire toward the base, prominently straight-veined, smooth, green both sides; racemes upright, paniced; bracts shorter than the flowers; filaments smooth. — Wet coves, Maine to Va., near the coast, and southward. Covered in July and August with handsome fragrant blossoms.

2. *C. acuminata*, Michx. A tall shrub or small tree; leaves oval or oblong, pointed, thin, finely serrate (3-7' long), pale beneath; racemes solitary, drooping; bracts longer than the flowers; filaments and pods hairy. — Woods in the Alleghanies, Va. to Ga. July.

21. *CHIMAPHILA*, Pursh. PIPSISSEWA.

Petals 5, concave, orbicular, widely spreading. Stamens 10; filaments enlarged and hairy in the middle; anthers as in *Pyrola*, but more or less conspicuously 2-horned. Style very short, inversely conical, nearly immersed in the depressed summit of the globular ovary; stigma broad and orbicular, disk-shaped, the border 5-crenate. Capsule, etc., as in *Pyrola*, but splitting from

the apex downward, the edges of the valves not woolly. — Low, nearly herbaceous plants, with long running underground shoots, and evergreen thick and shining leaves, somewhat whorled or scattered along the short ascending stems; the fragrant (white or purplish) flowers corymb or umbelled on a terminal peduncle. (Name from *χείμα*, winter, and *φιλέω*, to love, in allusion to one of the popular names, viz., *Wintergreen*.)

1. *C. umbellata*, Nutt. (PRINCE'S PINE. PIPSISSEWA.) Leafy, 4-10' high; leaves wedge-lanceolate, sharply serrate, not spotted; peduncles 4-7-flowered; petals flesh-color; anthers violet. — Dry woods, Nova Scotia to Ga., west to the Pacific. June. (Eu.)

2. *C. maculata*, Pursh. (SPOTTED WINTERGREEN.) Leaves ovate-lanceolate, obtuse at the base, remotely toothed, the upper surface variegated with white; peduncles 1-5-flowered. — Dry woods, N. Eng. to Ga., west to Minn. and Miss. June, July. — Plant 3-6' high.

22. *MONÈSES*, Salisb. ONE-FLOWERED PYROLA.

Petals 5, widely spreading, orbicular. Filaments awl-shaped, naked; anthers as in *Pyrola*, but conspicuously 2-horned. Style straight, exserted; stigma large, peltate, with 5 narrow and conspicuous radiating lobes. Valves of the capsule naked. (Flowers occasionally tetramerous.) Scape 1-flowered. Otherwise as *Pyrola*; intermediate between it and *Chimaphila*. (Name formed of *μόνος*, single, and *ἡδύς*, delight, from the pretty solitary flower.)

1. *M. grandiflora*, Salisb. A small perennial, with the rounded and veiny serrate thin leaves (6-9" long) clustered at the ascending apex of creeping subterranean shoots; the 1-2-bracted scape (2-4' high) bearing a white or rose-colored terminal flower 6" wide. (*M. uniflora*, Gray.) — Deep cold woods, Labrador to Penn., Ind., Minn., and westward. June. (Eu.)

23. *PÝROLA*, Tourn. WINTERGREEN. SHIN-LEAF.

Calyx 5-parted, persistent. Petals 5, concave and more or less converging, deciduous. Stamens 10; filaments awl-shaped, naked; anthers extrorse in the bud, but in the flower inverted by the inflexion of the apex of the filament, more or less 4-celled, opening by a pair of pores at the blunt or somewhat 2-horned base (by inversion the apparent apex). Style generally long; stigma 5-lobed or 5-rayed. Capsule depressed-globose, 5-lobed, 5-celled, 5-valved from the base upward (loculicidal); the valves cobwebby on the edges. Seeds minute, innumerable, resembling sawdust, with a very loose cellular-reticulated coat. — Low and smooth perennial herbs, with running subterranean shoots, bearing a cluster of rounded petioled evergreen root-leaves, and a simple raceme of nodding flowers, on an upright more or less scaly-bracted scape. (Name a diminutive of *Pyrus*, the Pear-tree, from some fancied resemblance in the foliage.)

\* Style straight, much narrower than the peltate 5-rayed stigma; petals and stamens erect and connivent; anthers not narrowed below the openings.

1. *P. minor*, L. Scape 5-10' high; leaves roundish, slightly crenulate, thickish, mostly longer than the margined petiole. Flowers small, crowded, white or rose-color; calyx-lobes triangular-ovate, very much shorter than the



nearly globose corolla; style short and included. — Cold woods, Lab., White Mts., L. Superior, and northward.

2. *P. secūda*, L. Subcaulescent, 3–6' high; leaves ovate, thin, longer than the petiole, scattered, finely serrate; racemes dense and spike-like, the numerous small (greenish-white) flowers all turned to one side, scarcely nodding; calyx-lobes ovate, very much shorter than the oblong-oval petals; style long, exserted. — Rich woods, Lab. to Minn., south to Md., and far northward. July. (Eu.)

Var *pūmila*, Gray, is a smaller form, with rounded leaves 6" or little more in diameter, and 3–8-flowered scape. — High peat-bogs, N. Y. to L. Superior, and northward. July, Aug.

\* \* Style strongly declined, the apex curved upward, longer than the connivent or spreading petals; stigma much narrower than the truncate excavated ring-like apex of the style; anthers contracted below the openings, forming a short neck; leaves denticulate or entire.

— Petals and leaves acute, the latter ovate, coriaceous.

3. *P. oxypétala*, C. F. Austin. Leaves ovate, small (8–12" long), shorter than the slender petiole; scape (7–8' high) several-flowered; flowers on ascending pedicels, not nodding; calyx-lobes triangular-ovate, acute, short; petals lanceolate-oblong, acuminate, greenish; anthers conspicuously mucronate at the apex, obtusely 2-horned at base, not inverted; style straightish, scarcely exserted. — Wooded hill near Deposit, Delaware Co., N. Y. (C. F. Austin, in 1860). Not since found; probably monstrous.

— Petals and leaves orbicular to oblong, very obtuse.

4. *P. chlorántha*, Swartz. Leaves small (1' long), roundish, thick, dull, shorter than the petiole; scape few-flowered, naked (5–8' high); calyx-lobes roundish-ovate, very short; the elliptical petals converging (greenish-white); anther-cells contracted into a distinct neck; style little exserted. — Open woods, Lab. to Penn., Minn., north and westward. June, July.

5. *P. elliptica*, Nutt. (SHIN-LEAF.) Leaves thin and dull, elliptical or obovate-oval, longer than the margined petiole; raceme many-flowered; calyx-lobes ovate, acute, not one fourth the length of the obovate rather spreading (greenish-white) petals; anther-cells blunt. — Rich woods, N. Eng. to Md., Iowa, Minn., and northward. June.

6. *P. rotundifolia*, L. Leaves orbicular, thick, shining, usually shorter than the petiole; scape many-bracted (6–12' high); raceme elongated, many-flowered; calyx-lobes lanceolate or oblong-lanceolate, acutish, with somewhat spreading tips, one half or one third the length of the roundish-obovate rather spreading (chiefly white) petals; anther-cells nearly blunt. — Damp or sandy woods, throughout the continent, south to N. Ga. Exhibits many varieties, such as: Var. *incarnāta*, DC., with flesh-colored to rose-purple flowers, and triangular-lanceolate calyx-lobes. Cold woods and bogs, N. Eng. to Minn., and northward. — Var. *asarifolia*, Hook., with oblate or round-reniform leaves, and shorter ovate calyx-lobes; petals flesh- or rose-colored (rarely white). With same range. — Var. *uliginōsa*, Gray, with short broadly ovate calyx-lobes, subcordate to obovate dull leaves, and rose-colored or purple flowers. Same range. (Eu.)

## 24. PTERÓSPORA, Nutt. PINE-DROPS.

Calyx 5-parted. Corolla ovate, urn-shaped, 5-toothed, persistent. Stamens 10; anthers 2-celled, awned on the back, opening lengthwise. Style short; stigma 5-lobed. Capsule globose, depressed, 5-lobed, 5-celled, loculicidal, but the valves cohering with the columella. Seeds very numerous, ovoid, tapering to each end, the apex expanded into a broad reticulated wing many times larger than the body of the seed. — A stout and simple purplish-brown clammy-pubescent root-parasitic herb (1–2° high); the wand-like stem furnished towards the base with scattered lanceolate scales in place of leaves, above bearing many nodding (white) flowers, in a long bracted raceme. (Name from *πτερόν*, a wing, and *σπόρά*, seed, alluding to the singular wing borne by the seeds.)

1. *P. Andromedea*, Nutt. — Hard clay soil, parasitic apparently on the roots of pines, from W. New Eng. to N. Penn., N. Mich., and westward; rare.

## 25. SCHWEINÍTZIA, Ell. SWEET PINE-SAP.

Calyx of 5 oblong-lanceolate acute scale-like sepals, erect, persistent. Corolla persistent, bell-shaped, rather fleshy, 5-lobed, slightly 5-gibbous at the base. Stamens 10; anthers much shorter than the filaments, fixed near the summit, awless; the two sac-shaped cells opening at the top. Capsule ovoid, 5-celled, with a short and thick style, and a large 5-angular stigma. Seeds innumerable. — A low and smooth brownish plant, 3–4' high, with the aspect of *Monotropa*, scaly-bracted, the flowers several in a terminal spike, at first nodding, flesh-color, with the fragrance of violets. (Named for the late L. D. von Schweinitz.)

1. *S. odorāta*, Ell. — Woods, parasitic on the roots of herbs, Md. (near Baltimore) to N. C. April.

## 26. MONÓTROPÁ, L. INDIAN PIPE. PINE-SAP.

Calyx of 2–5 lanceolate bract-like scales, deciduous. Corolla of 4 or 5 separate erect spatulate or wedge-shaped scale-like petals, which are gibbous or saccate at the base, and tardily deciduous. Stamens 8 or 10; filaments awl-shaped; anthers kidney-shaped, becoming 1-celled, opening across the top. Style columnar; stigma disk-like, 4–5-rayed. Capsule ovoid, 8–10-grooved, 4–5-celled, loculicidal; the very thick placenta covered with innumerable minute seeds, which have a very loose coat. — Low and fleshy herbs, tawny, reddish, or white, parasitic on roots, or growing on decomposing vegetable matter like a Fungus; the clustered stems springing from a ball of matted fibrous rootlets, furnished with scales or bracts in place of leaves, 1–several-flowered; the summit at first nodding, in fruit erect. (Name composed of *μόνος*, one, and *τροπός*, turn, from the summit of the stem turned to one side.)

§ 1. *MONOTROPA* proper. Plant inodorous, 1-flowered; calyx of 2–4 irregular scales or bracts; anthers transverse, opening equally by 2 chinks; style short and thick.

1. *M. uniflora*, L. (INDIAN PIPE. CORPSE-PLANT.) Smooth, waxy-white (turning blackish in drying, 3–8' high); stigma naked. — Dark and rich woods, nearly throughout the continent. June–Aug. (Asia.)



§ 2. *HYPÓPITYS*. Plant commonly fragrant; flowers several in a scaly raceme; the terminal one usually 5-merous, the rest 3-4-merous; bract-like sepals mostly as many as the petals; anthers opening by a continuous line into 2 very unequal valves; style longer than the ovary, hollow.

2. *M. Hypópitys*, L. (PINE-SAP. FALSE BEECH-DROPS.) Somewhat pubescent or downy, tawny, whitish, or reddish (4-12' high); pod globular or oval; stigma ciliate. — Oak and pine woods, from Canada to Fla., west to Oregon. June-Aug. (Eu.)

#### ORDER 59. DIAPENSIACEÆ.

Low perennial herbs or suffruticulose tufted plants, glabrous or nearly so, with simple leaves, no stipules, regular 5-merous flowers (except the 3-celled ovary), stamens adnate to the corolla and sometimes monadelphous (those opposite its lobes when present reduced to staminodia); pollen simple; loculicidal capsule and seeds of Ericaceæ. — Flowers solitary or racemose. Style 1, with 3-lobed stigma. Distinguished from the Ericaceæ chiefly by the insertion of the stamens upon the corolla.

**Tribe I. DIAPENSIEÆ.** Dwarf woody evergreens, with small entire crowded coriaceous leaves. Staminodia none; filaments adnate to the campanulate corolla up to the sinuses; anthers 2-celled. Calyx conspicuously bracteolate. Flowers solitary.

1. *Pyxidanthera*. Flowers sessile on short leafy branchlets. Anther-cells awn-pointed at base, opening transversely.
2. *Diapensia*. Flower (or at least fruit) on a scape-like peduncle. Anther-cells blunt, obliquely dehiscent.

**Tribe II. GALACINEÆ.** Acaulescent, with creeping rootstocks sending up long-petioled evergreen leaves, and a 1-several-flowered scape. Staminodia present.

3. *Galax*. Calyx minutely 2-bracteolate. Stamens monadelphous; anthers 1-celled.

#### 1. PYXIDANTHERA, Michx.

Sepals thin. Anther-cells awn-pointed at base, opening by a strictly transverse line. Otherwise much as in *Diapensia*. — Prostrate and creeping, with narrowly oblanceolate and awl-pointed leaves, mostly alternate on the sterile branches and somewhat hairy near the base. Flowers solitary and sessile, very numerous, white or rose-color. (Name from *πυξίς*, a small box, and *ἀνθήρα*, anther, the anther opening as if by a lid.)

1. *P. barbulata*, Michx. (FLOWERING MOSS. PYXIE.) Leaves 3" long. — Sandy pine barrens of N. J. to N. C. April, May.

#### 2. DIAPENSIA, L.

Calyx of 5 concave imbricated coriaceous sepals. Corolla bell-shaped, 5-lobed; lobes rounded. Filaments broad and flat, adherent to the corolla up to the sinuses, short; anthers adnate, of 2 ovoid pointless cells, diverging below, each opening therefore by a transverse-descending line. Capsule, enclosed in the calyx, cartilaginous; cells few-seeded. — Alpine, growing in very dense convex tufts, with the stems imbricated below with cartilaginous narrowly spatulate mostly opposite leaves, terminated by a scape-like 1-flowered peduncle, 3-bracted under the calyx. Corolla white ( $\frac{1}{2}$  wide). (Said to be an

ancient Greek name of the Sanicle, of obscure meaning, strangely applied by Linnæus to this plant.)

1. *D. Lappónica*, L. Leaves 3-5" long; peduncle at length 1-2' long. — Alpine summits of N. Eng. and N. Y., and northward to Lab. and the Arctic coast. July. (Eu., Asia.)

#### 3. GALAX, L.

Calyx 5-parted, imbricate, persistent. Petals 5, hypogynous, obovate-spatulate, rather erect, deciduous. Filaments united in a 10-toothed tube, slightly cohering with the base of the petals, the 5 teeth opposite the petals naked, the alternate ones shorter and bearing roundish 1-celled anthers, which open across the top. Style short, stigma 3-lobed. Capsule ovoid, 3-celled; columella none. Seeds numerous, the cellular loose coat tapering to each end. — Evergreen herb, with a thick matted tuft of scaly creeping rootstocks, beset with fibrous red roots, sending up round-heart-shaped crenate-toothed and veiny shining leaves (about 2' wide) on slender petioles, and a slender naked scape, 1-2° high, bearing a wand-like spike or raceme of small and minutely-bracted white flowers. (Name from *γάλα*, milk, — of no conceivable application to this plant.)

1. *G. aphylla*, L. — Open woods, Va. to Ga. June.

#### ORDER 60. PLUMBAGINACEÆ. (LEADWORT FAMILY.)

Maritime herbs, with regular 5-merous flowers, a plaited calyx, the 5 stamens opposite the separate petals or the lobes of the corolla, and the free ovary one-celled, with a solitary ovule hanging from a long cord which rises from the base of the cell. — Only the STATICEÆ or MARSH-ROSEMARY TRIBE is represented in our region, in gardens by the Thrift (*Arméria vulgaris*), on the coast by a single species of

#### 1. STÁTICE, Tourn. SEA-LAVENDER. MARSH-ROSEMARY.

Flowers scattered or loosely spiked and 1-sided on the branches, 2-3-bracted. Calyx funnel-form, dry and membranaceous, persistent. Corolla of 5 nearly or quite distinct petals, with long claws, the 5 stamens severally attached to their bases. Styles 5, rarely 3, separate. Fruit membranous and indehiscent, in the bottom of the calyx. Embryo straight, in mealy albumen. — Sea-side perennials, with thick and stalked radical leaves; the naked flowering stems or scapes branched into panicles. (*Στατική*, an ancient name given to this or some other herb, on account of its astringency.)

1. *S. Limonium*, L. Root thick and woody, very astringent; leaves oblong, spatulate or obovate-lanceolate, 1-ribbed, tipped with a deciduous bristly point, petioled; scape much-branched, corymbose-panicled (1-2° high); spikelets 1-3-flowered; flowers lavender-color; calyx-tube hairy on the angles, the lobes ovate-triangular, with as many teeth in the sinuses. (Eu.)

Var. *Caroliniana*, Gray, the plant of the Northern States, has more erect branches, rather panicled inflorescence with at length scattered flowers, and very acute or acuminate calyx-lobes. — Salt marshes along the coast, from Lab. to Tex. Aug., Sept.