

- n.* Not fleshy, narrow-leaved; ovary flat or slender.
o. Ovary slenderly linear or linear-cylindric.
 Annual or winter-annual with slender tap-root and soft base; style obsolete; weed of fields and roadsides southward.
 Biennial or perennial with strong bases or crowns. If seemingly annual with definite styles; mostly natives of rocky habitats.
 Inflorescence capitate in anthesis; petals 3-4 mm. long; cauline leaves mostly only 1-3 mm. wide, none in anthesis; petals
 29. *Brya*.
o. Ovary lanceolate to ovate or elliptic.
 long; cauline leaves mostly broader.
 43. *Arabis*.
 Weak annual or winter-annual; flowers 1 mm. long; style none; plant of Nfld. and Lab.
 Obvious strong-based perennials or biennials with larger flowers; if winter-annuals southern and with larger flowers.
 43. *Arabis*.
p. Flowering stems without definite basal rosettes.
p. Fleshy martitane plants with succulent leaves; ovary plump.
 Biennial, forming circular 1st-year rosettes of ovate to rounded leaves; flowers 2-5 mm. long, with white or pink petals; ovary globose to ellipsoid, not beaked; plants from Gulf of St. Lawrence northward.
 15. *Cochlearia*.
 Annual without rosettes; flowers larger, with lilac petals; ovary jointed, the upper segment forming a blunt beak; plants mostly more southern.
p. Not especially fleshy and succulent.
 18. *Cakile*.
g. Cauline leaves clasping the stem.
 Upper leaves perfoliate, surrounding the stem.
 Upper leaves merely sagittate or auricled at base, not surrounding the stem.
 Ovary notched at summit, very flat, with sessile stigma or short style barely projecting out of the notch.
 Pubescent; petals 1.5 mm. long.
 8. *Lepidium*.
 Glabrous; petals 2-4 mm. long.
 Ovary not notched, plump or slender and elongate, tipped by style or stigma.
 Pubescent; cauline leaves oblong, remotely dentate, sessile, cordate or sagittate-clasping; inflorescence a corymb of racemes; petals white, without long claws, 3-4 mm. long; ovary subglobose or cordate, with filiform style; field-weeds.
 9. *Cardaria*.
 Glabrous; cauline leaves acuminate to prolonged, with slightly auricled bases, closely (often doubly) sharp-toothed; inflorescences elongate racemes; petals purple, 7-12 mm. long, with exerted claws; ovary slenderly linear, without definite style.
g. Cauline leaves not clasping.
 Ovary short, lanceolate to ovate or rounded.
 Leaves hoary with stellate or forking hairs.
 Hairs stellate; petals 2-parted.
 2. *Bertora*.
 Hairs 2-pointed, attached in the middle; petals entire.
 3. *Lobularia*.
 Leaves glabrous or with mostly simple hairs.
 Weak annual 0.3-2 dm. high; basal leaves about 1 cm. long; flowers about 1 mm. long; plant of n. Nfld. and Lab.
 14. *Hutchinsia*.
 Coarser; leaves and usually flowers larger; more southern.
 Petals 1-2 mm. long (or wanting); ovary flat; annuals or biennials, rarely perennial.
 8. *Lepidium*.
 Petals 5-8 mm. long; ovary plump; coarse perennial.
 34. *Armoracia*.
r. Ovary elongate, slenderly linear or cylindrical.
 Cauline leaves deeply cordate, deltoid-ovate, long-petioled; bruised plant with odor of onion.
 25. *Alliaria*.
 Cauline leaves rounded, tapering or short-auricled at base, narrow, sessile or short-petioled; plant without onion-odor.
 Blades of petals raised above sepals on very long slender claws. Glabrous; cauline leaves (or some of them) with auricled bases, long-acuminate to base and apex, copiously (often doubly) sharp-toothed; sepals about 3 mm. long; limb of petal broad, 3-6 mm. long.
 36. *Iodanthus*.

these associated with the reputably western *S. mucronis*, which we had an opportunity to contrast the two.

marshes and extensive ^{limy} arborescent swamps at its mouth. This region was so fascinating and our host so accommodating that we spent three days (August 2-4) near the shore and three others (Aug. 5, 6 and 8) on the river. Such vast collections were made that more than half the time was used in caring for the presses. The marshy arborescent swamps about the mouth of the river and for some miles to the west gave us most of the species which had previously interested us. In addition these limy and damp spots and their openings yielded several which we had not been seeing: *Sparanium minimum* in rills, our only Gaspe station; *Agropyron trachycanlum* var. *majus* ^{out}; *Muhlenbergia glomerata* var. *sinuoides*; *Rhynchospora capillacea* (at the only station we know on the Peninsula, a very distinct species which is highly localized as far to the northeast as Gaspe and western Newfoundland; *Carex hornathoda* (only a few stations so far to the north); the type-collection of *Juncus halleus* var. *stenocarpus*; *J. stygius* var. *americanus* (later found in the bog at Grand River, but very rare in southern Gaspe); the equally local *Salix purpurifolia*; our only colony in southern Gaspe of *Betula pumila*; *Succaulem lividum*; *Polygonum viviparum* var. *alpinum* (our first recognition of it in America); *Stellaria crassifolia* on submerged logs and snells, a species which in the eastern Canada seems to prefer the coast of the Gulf of St. Lawrence; *Ranunculus pennsylvanicus* at our only Gaspe station; *Pyrola asarifolia* var. *purpurea*, the only time we saw it on the Peninsula. Here we suddenly recognized the triple-nerved goldenrods of eastern Canada could not all be crowded into *Solidago canadensis* and *S. gigantea*. Here was another species, heretofore supposed to belong in the western part of the continent, *S. lepida*. The plant on the alluvium of ^{Grand} River is var. *fallax*, the most widely dispersed variety, but other striking variations of the species were soon to be discovered. ^{Franc} Berthel Victorin and his companions subsequently explored this area and they here got the new *Sentiana gaspensis*, isolated member of a complex and nearly transcontinental series of technical species; unfortunately, we were too early for it.

The brackish marsh had some of the preceding species but mostly another series. Further exploration of it would yield several more but here ^{were} the first *Catabrosa aquatica* var. *laurentiana* we had ever seen, the type-colony of *Eleocharis halophila*, the rather local *Scirpus acutus*, the second Gaspe station for *Carex livida* var. *brayana* (of broad Canadian range but rather singularly, isolated in southern New Jersey) ^{and} the type-colony of *Galium trifidum* var. *halophilum*. Suddenly we became conscious that

Bidens was in this saline or subsaline marsh, surely the wrong habitat for any species we had ever seen; ^{that genus} but examination showed that the achenes were abundantly striate on each of the two flat faces. It did not fit anything we knew. This was our first (but not the last) encounter with the then almost unknown *Bid.* ^{three years earlier} *hyperboreus*, which had been described from the foot of James Bay. Our plant was var. *laurentianus*, later found in brackish soil from eastern Gaspe to the lower Restigouche and beyond.

Beauport River, about the ~~east~~ great marshes at its mouth, is one of the ^{best} rivers of the region, broad and shut in by steep walls of calcareous rock, largely red conglomerate. We were so fascinated by its flow that we made above proper and barely reached the base of Balde. To be sure, most of the notable plants now

ARTIFICIAL ANALYTICAL KEY

- ament, within an involucre which becomes a prickly bur; their calyces slender tubes overtopping ovary, the summit lobed, the throat bearing sterile stamens; nuts large, lenticular. *Castanea*, p. 540
- Pistillate flowers in independent aments, spikes or heads.
- Pistillate inflorescence an ament with foliaceous or bladdery bracts; the calyx adnate to ovary and merely short-toothed at summit; fruit a hard-shelled nut; staminate ament pendulous, slender, brown-bracted, the flowers apetalous; each fork of filament with 1 locule of the anther. . . . CORYLACEAE, p. 530
- Inflorescence a dense spike or globose head of crowded flowers with basal calyx of 4 unequal sepals; stamens 4, with inflexed filaments. . . . MORACEAE, p. 554
- J. Pistillate flowers not in aments, very dense heads or very dense spikes. . . . N.
- N. Calyx wanting.
- Pistillate inflorescence a few-flowered head-like scale-covered small cluster, with 2-cleft red styles protruding; fruit a nut covered by a foliaceous toothed involucre; staminate aments drab, dry, pendulous, each bract with 4-8 bifurcate stamens; leaves and scars alternate. . . . *Corylus*, p. 530
- Pistillate and staminate inflorescences small panicles or racemes, the pistillate of naked pedicelled flowers, the staminate in close bracted groups; style simple, stigma 2-lobed; fruit a drupe; stamens 2-4, simple; leaves opposite. . . . *Forestiera*, p. 1150
- N. Calyx present, at least in flowers.
- Calyx adnate to ovary; pistillate flowers without rudimentary stamens; seed with copious albumen; bark non-aromatic.
- Styles 3-5; ovary subtended or covered by an accrescent involucre which in fruit becomes a scaly cup or 4-parted bristly bur; fruit a nut; staminate flowers in drooping moniliform or globular aments. . . . FAGACEAE, p. 539
- Style 1; fruit a drupe, not covered by or embraced by a bur or scaly cup; staminate flowers not in aments.
- Inflorescence a spike and leaves alternate, or pistillate flowers solitary and short-stalked in axils of opposite leaves; calyx-teeth or -lobes definite at summit of adherent calyx in both flower and fruit. . . . SANTALACEAE, p. 560
- Inflorescence of 1-few crowded sessile flowers at tip of slender spreading to drooping peduncles from axils of alternate leaves; calyx-teeth not evident at summit of drupe. . . . NYSSACEAE, p. 1048
- Calyx free, of broad sepals or lobes.
- Leaves not scurfy, alternate, punctate-dotted, aromatic; sepals free or united at base, petal-like; pistillate flowers bearing rudimentary stamens; fruit a drupe, not overtopped by the calyx; anthers opening by pores and lids. . . . LAURACEAE, p. 677
- Leaves scurfy, opposite; calyx urceolate, 4-lobed at summit, the throat with an 8-lobed crown, loosely embracing the nut-like ovary and overtopping it, its tube becoming fleshy and red or orange in maturity; anthers without pores or lids. . . . *Shepherdia*, p. 1045
- I. Slender twining vine with often palmately lobed long-petioled leaves and long-peduncled panicles; calyx of 6 petal-like sepals; 3 upright pistils capped by radiating star-like or fimbriate stigmas; stone of drupe somewhat cup-like or lunate; stamens numerous. . . . MENISPERMACEAE, p. 674
- H. Leaves narrowly linear to linear-oblong, evergreen, rather crowded, 2-8 mm. long; flowers axillary or in terminal small heads, without calyx but subtended by bracts or with 3 petal-like sepals; fruit a 3-9 seeded drupe; anthers versatile. . . . EMPETRACEAE, p. 974
- E. Herbs. . . . O.
- O. Leaves compound.
- Frail and brittle aquatic with whorled and finely dissected leaves; solitary involucrate flowers sessile in leaf-axils. . . . CERATOPHYLLACEAE, p. 636
- Firm-stemmed terrestrial upright plants with alternate petioled ternately decomposed leaves with distinct leaflets; flowers with petaloid or herbaceous sepals, in panicles or corymbs. . . . *Thalictrum*, p. 656
- O. Leaves simple, unlobed to deeply divided. . . . P.

those already noted, either from the ~~the~~ banks and beaches of Grand River or from 10
the Little Cascades but we were still enthusiastic over such distinctive species as the
Parnassia and the two Astragal; and the masses of Dryopteris Robertiana, hanging
from ice-creeks and dripping walls, gave us a new thrill, as did Carex Barberi var. bifaria,
great masses of the type-colony of Carex flava var. gaspensis, our only station on the
peninsula for the southern Trillium undulatum, the type colony of Amelanchier
gaspensis, and on the beaches such plants as Agrostis variegata var. Jesupi (the
only time seen) and Cyperus trachycardium var. novae-angliae. The dripping walls,
where so many fine things were growing were often covered with very loose and intricately
forking mats of Arenaria Dawsonensis, the plant I had described from the open
and sunny beach at Carleton as A. litorica. Very recently Boivin in Bot.
Canadian, lxxv. 216 (1948), has set off A. Dawsonensis, var. litorica
because of its compact habit and dwarfness. Had he seen in the same geographic
region, that the ~~type~~ type-colony was ~~now~~ a geophytic one, the type
sheets contain 10 and 13 individual plants, ^{on} ~~the~~ more sheltered and wet slopes the
individual plants ^{are colonies} completely cover a standard herbarium-sheet.

We were now forced to remember that the little steep-walled valley of Grand
River was our important objective. It was now close time on Salmon salmon-
fishing and Mr. Cabot had provide me with a letter, directing his warden to
take us wherever we wished to batonize up the fascinating valley, the type-
region of several notable plants. But, alas, although we had reckoned with
our host, ~~but~~ he had not reckoned with his employe. Arrived at the mouth
of Grand River, we learned that the warden was up-river and beyond reach,
with a group of county-officials "enjoying forbidden fruit. After some
days of waiting we moved on and the most promising valley of the
river still awaits midsummer and autumn exploration. During the
hopeful waiting for our guide we dared not wander far-away. The little
sweet-bog was, naturally, revisited. Rubus acedus was now mature, with lusciously
wine-like fruit, and with it another of the same subgenus, our first ~~of~~ collection
of R. arcticus. Carex chortovhiza, our only Caspé collection sprouted over
the other vegetation, its prolonged stems sending up from their axils the fruiting culms,
a most unusual habit in the genus; and here was another station for the rather
local Juncus stygius var. americanus. Best of all, the lower part of the
bog was a carpet of three Sundews: the somewhat ubiquitous Drosera.

↳ ~~Let~~ On later trips on the Peninsula we were reminded of the
officers of the law who had threatened us, for it soon became quite evident
that, after close time on shooting Caribou had come, various game-wardens
and licensed guides lived largely on "mountain smelt"

2. *A. pachypoda* Ell. (with thick pedicels), WHITE B., WHITE C., DOUGL'S-EYES. — Raceme ellipsoid to subcylindric, in fruit becoming 3-17 cm. long; pedicels stout, in maturity nearly as thick as the peduncle, red; petals slender, mostly truncate, seeming like modified stamens; stigma during anthesis broadly sessile; fruits globose-ovoid, white, capped by the red or purple broad sessile stigma, or fruit red in forma *tuberculata* (Killip) Fern. (with red carpels); seeds (3-)-5-10, 4-5 mm. long. (*A. alba* sensu Bigel. and later auth., not Mill.) — Rich woods and thickets, P.E.I. to s. Man., s. to N.S., N.J., Ga., Ala., Ia. and Oka. Fl. May, June; fr. July-Oct.

18. HYDRASTIS Ell. ORANGEROOT. YELLOW PUCKOON

Pistils 12 or more in a head, 2-ovuled; stigma flat, 2-lobed. Ovaries becoming a head of cernium 1-2-seeded berries in fruit. — Low c. N.A.m. and e. Asiatic perennial herbs sending up hairy stem, which is 2-leaved near the summit and terminated by a single greenish-white flower. (Name suggested by the leaf of *Hydrophyllum canadense*, with which this plant was early confused.)

1. *H. canadensis* L. (Canadian), Golden-seal, "TAMARIC", — Leaves rounded, cordate at the base, 5-7-lobed, doubly serrate, veiny, when full grown in summer 1-2 dm. wide. — Rich woods, Vt. to Minn. and Neb., s. to Ga., Ala., Ark. and (formerly) e. Kans. April, May. — Much sought for medicine and largely exterminated.

19. XANTHORHIZA Marsh. SHRUB-YELLOWROOT

Sepals 5, regular, spreading, deciduous. Pistils 5-15, with 2 pendulous ovules. Fruit 1-seeded, oblong, the short style becoming dorsal. — A low shrubby plant; the bark and long roots deep yellow and bitter. Flowers polygamous, brown-purple, in compound drooping racemes, appearing along with the 1-2-pinnate leaves from large terminal buds in early spring. (Name compounded of the Greek *xanthos*, yellow, and *rhiza*, root.) *ZANTHORHIZA* L'Hér., alternative spelling.

1. *X. simplicissima* Marsh. (most simple, *i.e.*, unbranched). — Stems slender, 2-6 dm. high; leaflets cleft and toothed. (*Z. apyfolia* L'Hér.) — Damp woods, thickets and stream-banks, N.Y. to W.Va., s. to Fla. and Ala.; spreading from cult. elsewhere. April, May.

FAM. 65. BERBERIDACEAE (BARBERRY FAMILY)

— *Shrubs or herbs with the sepals and petals both imbricated in the bud, usually in two rows of 3 (rarely 2 or 4) each; the hypogynous stamens as many as the petals and opposite them; anthers opening by 2 valves or lids hinged at the top.* (*Podophyllum* is an exception in having more numerous stamens, the anthers opening along the sides; *Jeffersonia*, in having the sepals in one row.) *Pistil single*. — Filaments short. Style short or none. Fruit a berry or a capsule. Seeds few or several, anatropous, with albumen. Embryo small, except in *Berberis*. Leaves alternate, with dilated bases or stipulate.

^a Herbs.
^b Leaves simple or with 2 large leaflets; petals white, thin, showy; fruit a berry or capsule.
^c Flowering stem usually with 2 leaves; leaves simple; fruit a berry.

Flower solitary, usually in the fork between the 2 leaves; stamens 12-18, anthers opening longitudinally; berry ovoid, yellowish, many-seeded, 2.5-5 cm. long.
 Flowers in terminal cyme; stamens 6, anthers with terminal valves; berries globose, blue, 2-4-seeded, about 1 cm. in diameter.
^c Flower terminating a scape; leaves basal, opening horizontally by a lid.
^b Leaves ternately compound; petals smaller than sepals, thick and gland-like, greenish, yellowish or bronzy; ovary soon bursting, the 2 (or 1) ovules maturing as blue spherical drupe-like seeds.
^a Shrubs with prickles, yellow wood, yellow flowers and 1-few-seeded red berries.

1. *Podophyllum*.
 2. *Diphyllea*.
 3. *Jeffersonia*.
 4. *Podophyllum*.
 5. *Berberis*.

1. **PODOPHYLLUM L.** MAY-APPLE. MANDRAKE. POMME DE MAI (Que.)
 Flower-bud with three green bracts which early fall away. Sepals 6, fugacious. Petals 6 or 9, obovate. Stamens twice as many as the petals in our species; anthers linear-oblong, not opening by uplifted valves. Ovary ovoid; stigma sessile, large, thick and undulate. Fruit a

3. *A. noveboracense* Gray (of New York).—Erect to reclining, 0.2–1 m. high, from a tuberous-thickened root, leafy, simple to paniculately branched, the summit and strict loosely flowered racemes spreading-hirsute; leaves deeply parted, the broadly cuneate divisions 3-cleft and incised, glabrous, or sparsely hairy near margin; flowers blue; hooded sepal 1.4–1.7 cm. high, gibbous-ovoid, with broad rounded summit, the base 3–7 mm. long; folioles thick-cylindrical. — Rich woods, shaded ravines and damp slopes, local, se. N.Y. to Wisc. and Ia. June, July.

4. *A. reclinatum* Gray (reclining), TRAILING W. — Stem trailing or leaning, sometimes ascending, 1–3 m. long, from slender roots; leaves deeply 3–7-cleft, the lower orbicular in outline; the divisions cuneate, incised, often 2–3-lobed; inflorescence a loose panicle, the rachis and pedicels closely pilose with incurved hairs; flowers white to yellowish; hooded sepal 1.5–2.3 cm. high, soon horizontal, the elongate-conical summit with a striated beak in front. (Incl. *A. vaccastrum* Rydb.) — Woods among the mts., W. Va. and w. Va. to Ga. June–Sept.

16. CIMICIFUGA L. BUGRANE. RATTLETOP

Sepals 4 or 5, falling off soon after the flower expands. Petals, or rather transformed stamens, 1–9, small, on claws, 2-horned at the apex. Stamens as in *Actaea*. Pistils 1–8, forming dry dehiscent follicles in fruit. — Perennials of N. Hemisphere, with 2–3-ternately divided leaves, the leaflets cut-serrate, and white flowers in elongated virgate racemes. (Name from *cimex*, a bug, and *fugere*, to drive away.)

Pistils 3–8, stipitate; stigma minute; seeds chaffy-coated. 1. *C. americana*.
 Pistil 1 (rarely 2 or 3), sessile; stigma broad and flat; seeds smooth. 2. *C. racemosa*.

1. *C. americana* Michx. (American), AMERICAN or MOUNTAIN-B., SUMMER-COHOOSH. — Stem 0.6–2 m. high; leaves 2–3-ternate and then pinnately 3–5-foliolate; the ovate and oblong leaflets incised and dentate or the terminal one 3-cleft, acuminate; with basal concave nectary; elongate terminal raceme with shorter lateral ones; petals 2-horned, with basal concave nectary; pistils 3–8, shorter than the slender stipes; style subulate, tipped by the minute introse stigma; follicles flattened, membranaceous, about 1 cm. long, long-stipitate; seeds 6–8, in a single row, laterally flattened, covered with scabrous scales. — Moist woods, chiefly along the mts., Pa. and W. Va. to Ga. and Tenn. Aug., Sept.

2. *C. racemosa* (L.) Nutt. (with racemes), BLACK SNAKEROOT, BLACK COHOOSH. — Stem 1–2.6 m. high, from a knotted rhizome; leaves 2–3-ternately and then often quinately compound; leaflets subnervate to subcordate at base, mostly 3–10 cm. long, or leaves irregularly pinnately decomposed with leaflets much smaller, narrower and laminate or incised in the rare forma *dissecta* (Gray) Fern. (dissected); racemes few, virgate, erect, becoming 3–9 dm. long; petals 1- or 2-horned; ovary 1 (rarely 2 or 3), not stipitate, the short thick style tipped by the depressed broad stigma; follicles ovoid; seeds horizontal in a double row, with smooth close coat. — Rich woods, w. Mass. to s. Ont., s. to Ga., Tenn. and Mo.; spread from cult. in n. and e. N.E. June–Sept.

Var. *cordifolia* (Pursh) Gray (cordate-leafed). — Leaflets few (about 9), very large (1–2.5 dm. long), at least the terminal one deeply cordate. (*C. cordifolia* Pursh) — Damp woods, mts. of sw. Va., N.C. and Tenn. — Said to flower later than the typical form.

17. ACTAEA L. BANEBERRY. NECKLAGEWEED. COHOOSH

Sepals 4 or 5, falling off when the flower expands. Petals 4–10, small, flat, spatulate, on slender claws. Stamens numerous, with slender white filaments. Pistil single; stigma sessile, depressed, 2-lobed. Seeds smooth, flattened, and packed horizontally in 2 rows. — Perennials of N. Hemisphere, with ample 2–3-ternately compound leaves, the ovate leaflets sharply cleft and toothed, and a short and thick terminal raceme of whitish flowers, followed by berry-like indehiscent fruits. (Ancient name of the Elder, transferred by Linnaeus to this genus.)

1. *A. rubra* (Ait.) Willd. (red), RED B., SNAKEBERRY, POISON DE COURTOISE (Que.). — Raceme ovoid to subcylindrical, in fruit becoming 3–10 cm. long; pedicels filiform, more or less minutely pilose with fulvous hairs; petals rhombic or lance-spatulate, tapering to summit; stigmas during anthesis slightly elevated above summit of ovary, in fruit contracted and relatively inconspicuous; fruits cherry-red, ovoid-ellipsoid, lustrous; seeds 10–16, 3–4 mm. long. — Woods and thickets, s. Lab. to n. B.C., s. to Nfld., N.S., N.E., I.L., n. N.J., N.Y., W. Va., O., Ind., Ia., S.D., Colo., Utah and Oreg. Fl. May–July; fr. Aug.–Oct. — Fruit mildly poisonous, disagreeable to taste. — *Forma neglecta* (Gillman) Robins. (overlooked), has fruit ivory-white, on filiform pedicels (*A. eburna* Rydb.; *A. alba* sensu Mackenz. and Rydb., not Mill.), similar range, often more abundant.

Moving on to the east, our next base was at Percé, not a tourist-resort, but then in its primitive state as primarily a great cod-fishery. The details of our brief stay there, the unsavory living conditions but the stimulating discoveries have already been ~~repeated~~ published in the paper on field-work with Collins and should not be repeated here. A few additional plants of special interest may however be noted. We had followed the coastal peaks and cliffs as far north as the beginning of the Grande Coupe and westward to Cap Blanc. Practically all rocks and natural scree were inhabited by Glyceria fluitans, the typical plant of Eurasia and apparently native here. Many of the calcareous walls and slopes bore Hackelia americana which we first saw near the summit of Tracadigash Mountain; and Polypodium Londites, extensively variable in size in response to aridity or moisture abundance. Salvinia var. brevior was common but here were ~~on~~ the only colonies we have ever met in basins of two common species farther south and west: Juncus articulatus in a wet depression; Lyuzula acuminata in woods on Mt. Ste. Anne, where subsequent botanizers have also got it. From this first visit to Percé we brought away the types of ~~the~~ ^{three} new species, 5 new varieties and several new forms. These all came from the higher crests, walls or mountains, this area thus characterized by Coleman, l.c. 23:

"From Corner of the Beach (or 'Barachois')

From Percé we drove to Douglastown on the west side of Gaspe Bay, stopping on the way beyond Corner of the Beach on the beach and brackish pond-like lagoon back of the Barachois de Malbaie. Here was a very interesting habitat, which will repay further exploration with a boat, which, in our migration, we did not have time to do. This region was covered by shore-ice during the Pleistocene and we did not get above the old marine shelf. The striking feature of the flora of this old ~~marine terrace~~ sea-margin was, therefore, the complete lack of the plants which had been interesting us. My daily records of all plants seen cite some of those fascinating

(Some coming down from the discover, Cartier)

(The long-established French names, Les Mirabelles, Cap Rouge, etc, were in use. Several years later, after the automobile-road around the Peninsula was made, the road ^{soon} lined with tourist-homes, sub. to quite eating-places, etc., I arrived in Percé, to be greeted by a tourist with "Which is the Peak of Lawor?" Inquiry disclosed that it was good old Mont Rouge, which, with all its neighbors, had lost its identity.

§ 5. DIVISAE Christ (sec p.)

Rhizomes filiform; leaves canaliculate, 1-2 mm. broad; culms obtusely angled, smooth, 0.5-4 dm. high; perigynia 2.5-3 mm. long.

6. *C. stenophylla*, var. *enervis*.

Rhizomes stoutish, ligneous, 2-6 mm. thick; leaves flat, 2-5 mm. broad; culms acutely angled, scabrous toward summit, 2-7.5 dm. high; perigynia 3-4 mm. long.

7. *C. praegracilis*.

Spikes 5-15, in an interrupted cylindric head 1-5 cm. long; beak of perigynium one-half as long as body; western species.

8. *C. divisa*.

6. *C. STENOPHYLLA* Wahlenb. (slender-leaved). — Rhizomes and stolons filiform; leafy shoots tufted, low; the canaliculate subrigid leaves 1-2 mm. broad, curved; culms strict, slender, obtusely angled, smooth, 0.5-2.5 dm. high, overtopping the leaves; spikes 5-6, androgynous, densely crowded in a subcontinuous ellipsoid to ovoid brown or ferruginous head 0.7-1.5 cm. long; lowest bracts with awn-tips; perigynia ascending, coriaceous, plano-convex, thin-edged, mostly covered by the ovate acute scales, closely enveloping the large lenticular achene, ovate, 3-3.5 mm. long, definitely nerved, with a short scabrous-margined dorsally cleft beak.



— Eurasia — Represented with us by

Var. *enervis* (C. A. Mey.) Kükenth. (nerveless). — Up to 4 dm. high; spikes distinct, in a definitely interrupted head; perigynia 2.5-3 mm. long, often exceeding scales, nerveless or nearly so. (*C. stenophylla* of Am. auth., not Wahlenb.; *C. Eleocharis* Bailey) — Man. to Yuk., s. on dry plains and bluffs to Ia., Kans., N.M., Utah and e. Oreg. Late May-July. (Asia) FIG. 506.

506. *C. stenophylla*, v. *enervis*.

7. *C. praegracilis* W. Boott (very slender). — Rhizomes subligneous, elongate, forking, dark-purple to blackish, 2-6 mm. thick, sending up scattered erect tufts of flat scabrous-margined leaves 2-3 mm. broad and slender arched-ascending acutely angled scabrous culms 2-7.5 dm. high; spikes 5-15, androgynous, forming a linear- to lance-cylindric interrupted brown head 1-5 cm. long; lowest bracts awned or with short blade; pistillate scales ovate, acute, concealing the perigynia; perigynia coriaceous, plano-convex, ovate, 3-4 mm. long, appressed-ascending, slightly nerved on the back, the inner face nerveless, with a serrulate beak one-half as long as body; styles 2. (*C. marcida* Boott, not J. F. Gmel.)



507. *C. praegracilis*.



508. *C. divisa*.

— Low open ground and prairies, Yuk. to Mex., e. to Man., n. Mich., Ia., Mo. and Okla. June, July. (S.Am.) FIG. 507.

§ 6. CHORDORRHIZAE Fries (see p.) — A single species:

9. *C. chordorrhiza* L. f. (with cord-like roots). — Stems cord-like or wiry, prolonged, leaning or reclining, bearing few tufts of narrow leaves; culms terminal and lateral, arising from axils of shriveled leaves of preceding year, 1-4.5 dm. high, smooth, obtusely angled; spikes 3-5, androgynous, in an ovoid, ellipsoid or irregularly deltoid head 0.5-1.5 cm. long; pistillate scales rounded, deep brown, acuminate; perigynia compressed-ovoid to subglobose, coriaceous, 2-3.5 mm. long, nerved on both faces, with a short beak dorsally cleft. — Quagmires and inundated bogs, s. Baffin I. to Alaska, s. to Nfld., e. Que., centr. Me., sw. Vt., centr. N.Y., n. Ind., n. Ill., n. Ia. and Sask. Late May-Aug. (Eurasia) FIG. 509.



509. *C. chordorrhiza*.

§ 7. ARENARIAE Kunth (See p.)

a. Thin border of perigynium narrow, extending nearly to the base; inflorescences chiefly without leafy bracts; northern and continental species.

b. Inner band of leaf-sheath green-nerved nearly to summit; spikes 12-25 in a slender head 3-7 cm. long; perigynia 2.5-5 mm. long, the beak one-fourth to one-half as long as body.

Nodes of culm (at least the upper) exerted from leaf-sheaths; principal spikes nearly uniform, pale, subglobose to short-ovoid, 6-9 mm. long; scales obtuse to cuspidate; perigynia 2.5-4.5 mm. long.

10. *C. Sartwellii*.

Nodes covered by upper sheaths; inflorescence more continuous above;

294

294

295

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x/p.c./

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a.
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- g. Petals white; ovaries and siliques glabrous to minutely short-pubescent. *h.*
- h. Biennials (rarely short-lived perennials) with lower leaves of rosette shriveling soon after anthesis; subspherical rosette of 1st year loosening and elongating to form many-leaved flowering stem; axis of raceme and pedicels densely pilose-tomentulose to villous.
- 6. *D. incana.*
- h. Perennials; branches of caudex usually with fibrous shreds of old leaves at summit below living rosette; new rosettes well developed at flowering time; axis of raceme and pedicels glabrous, sparsely hirtellous or stellate-pubescent. *i.*
- i. Foliage with all or many of its hairs simple or elongate and irregularly forking, with or without admixed stellate hairs. *j.*
- j. Siliques linear to linear-lanceolate, 2-2.5 mm. broad; sepals 0.4-0.9 mm. broad; rosette-leaves linear-ob lanceolate, 1-5 mm. broad; cauline leaves lanceolate, 1.5-6 mm. broad.
- 7. *D. clivicola.*
- j. Siliques elliptic to oblong-lanceolate, mostly 2.5-4 mm. broad; sepals 1-2.3 mm. broad; rosette-leaves oblanceolate to narrowly obovate, up to 9 mm. broad; cauline leaves oblong to ovate, 3-11 mm. broad.
Rosette-leaves narrowly oblanceolate, hispid with many simple or elongate and furcate hairs; cauline leaves ovate; mature central racemes from one-third to nearly full height of plant; sepals 1-1.5 mm. broad.
- 8. *D. norvegica.*
- Rosette-leaves cuneate-ob lanceolate, with numerous stellate and several-few simple and elongate furcate hairs; cauline leaves oblong; mature central raceme one-fourth to one-half full height of plant; sepals 1.3-2.3 mm. broad.
- 9. *D. laurentiana.*
- i. Foliage with close stellate pubescence forming, at least on expanding leaves, a pannose coat; simple trichomes wanting or only rare (except as cilia) on the rosette-leaves. *k.*
- k. Siliques plump, glabrous; sepals 1.5-2 mm. long, 1 mm. broad; seeds closely but irregularly imbricated, often turned oblique to septum.
- 10. *D. pycnosperma.*
- k. Siliques strongly flattened (rather plump in no. 13, with densely tomentulose valves); sepals 2-3.5 mm. long, 1-2.3 mm. broad; seeds not imbricated, lying flat against septum. *l.*
- l. Siliques glabrous or only sparingly hirtellous or scabrous, strongly flattened; racemes usually bractless. *m.*
- m. Cauline leaves mostly rounded at base; mature siliques definitely veiny, usually flat; style obsolete or thick and short (up to 0.5 mm. long); fruiting pedicels stoutish, short, the lowest 1-6 mm. long.
Stems hirsute, especially on lower internodes, with abundant simple divergent trichomes overtopping the stellate hairs; cauline leaves 6-25 (average 10).
- 9. *D. laurentiana.*
- Stems closely stellate-pannose, sparsely or not at all hirsute below; cauline leaves 1-8, rarely -14 (av. 4).
- 11. *D. glabella.*
- m. Cauline leaves narrowed or only slightly rounded at base; mature siliques scarcely or only obscurely veiny, often twisted, very thin; style slender, 0.5-1 mm. long; fruiting pedicels slender, lowest 3-15 mm. long.
- 12. *D. arabisans.*
- l. Siliques densely stellate-tomentulose, only slightly compressed; racemes usually leafy-bracted at base.
- 13. *D. lanceolata.*
- f. Flowering stem with strongly divergent branches; leaves lacinate or subpectinate; style filiform, 1.5-3 mm. long, one-fourth to one-third as long as spirally twisted stellate-pubescent silique.
- 14. *D. ramosissima.*
- e. Dwarf annuals or biennials with bractless racemes; flowering stems leafy or at least with one pair of leaves above the base. *n.*
- n. Siliques 1.7-6 mm. long, 6-16-seeded; petals (when developed) 2-3 mm. long; stems simple, or branching nearly to summit, with the numerous small leaves strigose with variously forking trichomes.
Stems with abbreviated corymbiform branches from the middle and

ous-margined; petals 4-8 mm. long, narrow, about equaling or very slightly exceeding sepals, cleft to middle, with ciliate claw; capsule curved, 7-11 mm. long; seeds 0.5-0.7 mm. in diameter, reddish, tuberculate. (*C. triviale* Link) — Roadsides, fields and cult. grounds, in all inhabited reg., throughout our area and beyond. Early spring-late autumn (sometimes through winter). (Natzd. from Eurasia) FIG. 1017.

Var. *HOLOSTEODES* Fries (resembling *Holosteum*). — Plant glabrescent or with lines of minute hairs on the stems; leaves elliptic or oblong, dark green, round-tipped, ciliate. — Waste places, local, ne. N.S. and e. Va. (Adv. from Eu.)

5. *C. arvense* L. (of cultivated ground), FIELD-C. — Matted or tufted perennial with depressed or trailing tough basal branches bearing marcescent firm leaves and abundant and conspicuous axillary fascicles or leafy tufts; flowering branches ascending, simple to freely branched, 0.2-4 dm. high; leaves linear-subulate to narrowly ovate, 0.5-6.5 cm. long, 0.5-13 mm. broad, mostly confined to lower two-thirds of branch; bracts scarious-margined; sepals 4.5-8.5 mm. long; petals twice or thrice length of sepals, the broad lobes spreading in anthesis, the claw glabrous; capsule cylindric, equaling to much exceeding calyx; seeds reddish, 0.35-0.7 mm. in diameter, the testa close and tuberculate. — A heteromorphous species of cold and temp. reg. of N. and S. Hemisph. Ours are tentatively placed as follows:

a. Internodes of flowering stem villous or pilose with reflexed non-glandular hairs. b.

b. Leaves linear to oblong or lanceolate; those of the flowering stems mostly 0.5-3.5 cm. long and 0.5-4 (-5) mm. broad, tapering to base. *C. arvense* (typical).

b. Leaves lanceolate to ovate, those of the flowering stems often more rounded at base, mostly (2-) 3-6.5 cm. long and (3-) 5-13 mm. broad. Stems and leaves more or less pilose or the leaves glabrous above, their blades mostly lanceolate, up to 6.5 cm. long and 3-10 mm. broad. Var. *villosum*.

Stems and leaves very densely velvety- or tomentose-villous with long white pubescence; leaves oblong-lanceolate to lance-ovate, 2-4 cm. long and 0.8-1.3 cm. broad. Var. *villosissimum*.

a. Internodes all glandular-hispid, the gland-tipped short hairs often intermixed with glandless ones. Var. *viscidulum*.

C. arvense (typical). — Plant compact or lax; leaves densely pilose or the upper surface glabrate. (Incl. *C. campestre* and several other proposed spp. of Greene) — Gravelly, turfy or rocky basic soils, often a weed in grasslands, Lab. to Alaska, s. to Nfld., P.E.I., N.B., N.E., Del., Md., Wisc., S.D., N.M. and Calif. Late April-Aug. (alpine). (Eurasia) FIG. 1018. — A complex series, needing close study.



1018. *C. arvense*.

Var. *villosum* (Muhl.) Hollick & Britt. (long-hairy). — Mostly tall, 1-4.5 dm. high, with long internodes and peduncles; leaves gray with close pilosity, or green and glabrous or promptly glabrate above in forma *oblongifolium* (Torr.) Pennell (oblong-leaved). (Incl. *C. velutinum* Raf.) — Thin rocky soil and cliffs, s. Ont. to Ida., s. to Va., Tenn. and Mo. April-June.

Var. *villosissimum* Pennell (very long-hairy). — Depressed, forming widely spreading mats, very densely velutinous- or tomentose-villous. — Serpentine-barrens, Chester Co., Pa.

Var. *viscidulum* Greml. (sticky). — Compact or lax, with narrowly linear to lanceolate or oblong leaves; whole plant glandular. (Incl. *C. confertum*, *C. occidentale* and *C. oreophilum* Greene) — Cliffs and gravel, St. Paul I., N.S.; Alaska, s. to N.D., Colo., Utah and Calif. (Eu.)

C. TOMENTOSUM L. (tomentose), SNOW-IN-SUMMER, a depressed and matted perennial with stems, leaves and calyx densely white-woolly or tomentose, is cult. in rockeries and borders, and sometimes spreads to wild habitats. (Introd. from Eurasia)

6. *C. nutans* Raf. (nodding). — Weak annual, the simple or loosely rather flaccid viscid-pilose stem 0.5-



1019. *C. nutans*.

- Siliques linear, 1.5-10 cm. long; seeds in 1 row or only obscurely in 2 rows. 43. *Arabis*.
- Siliques terete or quadrate-cylindric.
- Rosette-leaves fleshy, linear-oblongate, entire; caudex stout; scapes naked; siliques lance-subulate, 4-9 mm. long, 10-16-ovulate; high-northern plants (Nfid. with us). 29. *Braya*.
- Rosette-leaves thinner, oblong, oblanceolate or narrowly ovate, often toothed; caudex slender or scarcely developed; flowering stems leafy; siliques slenderly linear-terete or -tetragonal, 1-3 cm. long, many-seeded.
- Perennial with slender branching caudices; siliques terete, torulose, 1.2-3 cm. long; cells of septum obliquely or transversely elongate. 29. *Braya*.
- Annual without branching caudex; siliques tetragonal-cylindric, with straight margins, 1-1.5 cm. long; cells of septum vertically elongate. 27. *Arabidopsis*.
- p. Hairs all simple or often quite wanting; ripe valves of silique elastic, coiling or rolling into rings upon falling. 41. *Cardamine*.
- n. Leaves deeply pinnatifid or pinnate.
- Leaves bi- or tripinnate or pinnatifid; siliques slenderly cylindric to clavate; cotyledons incumbent; petals yellow or yellowish. 28. *Descurainia*.
- Leaves once pinnate or pinnatifid; siliques flattened; cotyledons accumbent; petals white to purple.
- Leaves pinnate, at least the lower with distinct leaflets; valves of silique elastic, coiling upon dropping; seeds wingless. 41. *Cardamine*.
- Leaves stiffly pinnatifid; valves stiff, not coiling; seeds winged. 42. *Sibara*.
- m. Flowering stem without definite basal rosette. q.
- q. Raceme with lower flower subtended by leafy bracts; leaves deeply pinnatifid or bipinnatifid; siliques slender, 4-angled, 2.5-3.5 cm. long, their valves keeled. 21. *Erucastrum*.
- q. Raceme with flowers ebracteate. r.
- r. Siliques flattened.
- Leaves and stems glabrous or with simple hairs; siliques 0.5-3 cm. long.
- Cauline leaves auricled, sharply and often doubly toothed; valves of silique 1-nerved, not elastic. 36. *Iodanthus*.
- Cauline leaves not auricled, if simple merely sinuate or dentate; valves nerveless, elastic and coiling after falling. 41. *Cardamine*.
- Leaves or stems usually bearing some forked hairs; siliques up to 10 cm. long. 43. *Arabis*.
- r. Siliques terete or 4-angled. s.
- s. Stems bearing closely appressed straight 2-pronged hairs attached near the middle (malpighiaceus hairs). 31. *Erysimum*.
- s. Stems glabrous or with simple or stellate hairs. t.
- t. Cauline leaves sagittate- or cordate-clasping.
- Silique tapering to a terete indehiscent beak 0.8-2 cm. long; seeds globose; cotyledons conduplicate; petals deep yellow. 20. *Brassica*.
- Silique very slender, tapering to thick short style; seeds oblong or flat; cotyledons not conduplicate; petals creamy to yellow.
- Leaves simple, not lyrate; petals pale yellow or creamy.
- Cauline leaves elliptic, cordate-clasping; silique angled; seeds plump, in 1 row; cotyledons incumbent. 24. *Conringia*.
- Cauline leaves lanceolate to oblong, sagittate-clasping; silique terete; seeds flat, obscurely 2-seriate; cotyledons accumbent. 43. *Arabis*.
- Leaves, or some of them, lyrate-pinnatifid; seeds oblong to quadrate; cotyledons accumbent; petals deep yellow. 35. *Barbarea*.
- t. Cauline leaves not clasping. u.
- u. Fruit terminated by a conical to flat or 3-angled indehiscent beak.
- Seeds globose, in 1 row in each locule. 20. *Brassica*.
- Seeds ovoid or ellipsoid, in 2 rows in each locule.
- Siliques terete, the beak slenderly conical; lower pedicels 0.5-3.5 cm. long. 22. *Diploxaxis*.
- Siliques 4-angled, tipped by a flat triangular-lanceolate beak; lower pedicels 0.5-5 mm. long. 23. *Eruca*.
- u. Fruits dehiscent to tip, without long indehiscent beak. v.

Stevia grandidentata Rusby, Mem. Torr. Bot.

Club, vi. 55 (1846), founded on Barry, 1149

= *S. Doctores* Hieron. var. *sebbe*, *pubulosa*
(Hieron.) Williams

1846

31
87
128

9
7
12

Stevia glandulosa ~~Benth~~ Hook. & Arn. Bot. Beech.
296 (1840).

Type

Type-local. "Tahico" [Tahico]

fruticosa tota pubescente-glandulosa, foliis opp.
sublonge petiolatis ovatis serratis, corymbis densis
polycephalis, involucri trifloro, pappi paleaceo
brevis exaristato

Guy: ex Arn.

Mexico

Stevia glandulifera Schlecht. Ind. Sem. Hort. Halle,
19 (1839) & Hort. Halle 18, t. 8

2 *S. trachelioides* Hook. Bot. Mag. t. 3856 not
det.

Type:

Type-locality:

Peppers a toothed crown

Hb. Gray: plate; specimen (Ehrenberg #77 as det at Berlin).
and probably of original
material but lacks
topotype.

Mexico.

Plants to study in Paris

Paris

Paris - brood on coil Base in

- ✓ *Andropogon furcatus* - Geneva or Pavia
- ✓ " *macranthus* Michx. - sur un glaucum Ell.
- ✓ *Cyperus stramonii* Vahl ex Horn. Vahl =
- ✓ " *stramonii* Michx. = poxy!
- ✓ *Sida triglochin* Michx. - O.K.
- ✓ *Corynephorus* ...
- ✓ " *...*
- ✓ *Juncus* ...
- ✓ *Chenopodium* ... = rats in herbs.
- ✓ " *conditum* Michx. = var. ...?
- ✓ " *opulifolium* Michx. = typical ...?
- ✓ " *...*
- ✓ *...* = ...?
- ✓ " *...* - not in herbs.

Types in Paris

Andropogon macranthus Michx.

Two sheets, very nice & large specimens in superb condition. Clearly the var glaucopis Ehr. as treated by us, but both specimens larger & more luxuriant than my reference sheet. Photographs over

Cyperus stigmatum Michx.

A few specimens of a few upper plants of C. formos.

Scleria tripartita Michx.

Two specimens culms (top only), but clearly not the var glaucus Britton.

Zizania scirpoides Michx.

Like sheet, very nice & large specimens, but leaves a little, about as in var scirpoides Ehr. as treated by us, the same as the heads of that var. The label in his hand says

"vide Pluck. t. 417, f. 3

Zizania scirpoides, Lam. dict.

de la Caroline. Gagnon."

Photographs ordered

Cyperus spicatus Vahl

The culm + 2 inches of stem of a very large + long
travelling specimen of C. spicatus, with long panicle, consequently looking
the culm + stem appearance of some plants of C. spicatus. In technical
diagrams clearly with spicatus + spicatus, but spicatus as
a grass.

The evidence for the short long Vahl type is as follows.
There is only one label, bottom left, in ink, which reads
"Trage Vng. panic spicatus spicatus
herbar. de Vahl"

Herb. de Vahl, 1844 cites C. spicatus as being the same
Vahl's, + uses the same words in his herb. de Vahl diagrams.

Finally there is the only Vahl's specimen of the species
spicatus + all the specimens in the herbar. de Vahl + herbar. de Vahl
the other panic spicatus type de C. spicatus Vahl.
It looks as though there is a lot of it.

Carex straminea Michx.

A paper of a name was found in a book, with two specimens
of ripe seeds, clearly straminea as seen in, interpreted by
Wegend + Wiedemann. The label in the handwriting of Michx.
C. straminea

Carex straminea
Habit in Michx.

At the bottom left of page in a small box is printed a

white throats which needs

"*Carex acrocephala* var. *angustifolia*"
(F. Gay, 1822)

The perianth are long stipitate, long subparallel funiculus,
with a long slightly reflexed head. Usually narrow, not crowded, densely
surrounding by the funiculus. Stamens 6, the lower spike is the
a pedicel about 1 cm long. The lower spike is the
stamens only.

Carex fasciculata Hornem.

The lower spike is the stamens only say "Carex fasciculata"
Linn. Syst. Nat. Virginicae

Another name ^{is} *Carex* ^{is} *acutifolia* (L.) Link. & Schum.

form

"*C. fasciculata* var. *intermedia* (L.) Hornem!"

L. H. B.

Nov 22, 1827

As you see the lower spike of this plant has been written in

French "C.K. L.H.B., (Nov 22, 1827)"

The plant is a common one also, only I don't
know how to find the name of the plant. The name is
carex, the lower spike is the stamens only. There are only 3 leaves. The plant is
quite common in France (L.H.B., Nov 22, 1827).
The name of the plant is *Carex* *acutifolia* (L.) Link. & Schum.

base of the stem is quite, that is quite variable, the length of
 what would be, much later, a short, straight, pubescent spike,
 which would almost certainly be ~~set off~~ ~~cross~~ ~~be~~ ~~at~~ ~~the~~ ~~base~~
 the stem is quite at maturity, just a few inches from the point
 where the leafy part of the stem is spike & so on, as another
 pedicel spike but it is a little except the stem, which is very
 pedicel, not confusional, I mean, but gradually tapering.

On the whole I am quite certain that, when proper
 allowance is made for the changes bound to take place as the
 plant comes into flower, & develops into fruit, that we have
 here one of the same stems & straight form. In other words
C. laevigata has to be laevigata, stipitata or stipitata &
 current treatment also. The character of the pedicel scales
 agrees best with C. stipitata. The population of the stem
 spike make typical laevigata type in some cases, quite important
 On the whole, I doubt if the appearance of pedicel spike would
 be more readily from the stem than in C. stipitata, the
 base pedicel spike has seen to make in our minds in the
 side and a third very early. The pedicel spike would
 consequently become a distinct form, but the long stem
 spike usually laevigata or stipitata.

We now come to the last form of the stem. The last
 merely says "C. laevigata (sic) Roman 88."
 The question is also a whole sheet in the type. The specimen
 is a small one, in my handwriting. The leafy part is
 mounted first in the herbarium, but some rest in the herbarium.
 The specimen is from the New York sheets.

The New York sheet contains 2 plants. 1 is about as minute a specimen as the Virginia sheet, the other is decidedly larger. Both are exceedingly young, but in the larger specimen, the progynia of the pedunculate spores are developed & clearly visible behind the socket. Both plants, as regards the glaucous, differ from the Virginia plant in having very long pedunculate spores, already in long pedunculation when mature the progynia will separate & loosely overlap. There is not the slightest doubt, but what in these respects, the sides will show the character so much known in another, described to the general botanical world. I agree entirely with

Barley, et al. (New York Bot. Club, 1899, p. 32), with the following observations:

1. It appears to the N.Y. plant only, Barley's "var. type" seems to apply to two plants collected, & he names the best plant
2. It can be introduced to the "new var. progynia".

As we examine the spores taken, the progynia are seen, however, to be developed in all cases as well as in the other. It is practically impossible to tell whether the same material is Barley's or the Virginia plant.

3. The pedunculate spores to both types is Virginia plant only.

To sum up: —

1. The N.Y. plant is practically C. virginiana in Wright's & Wiegand's treatments & the var. patens of Gray.
2. Barley's conception of C. laevigata was based on the

Aster cordifolius Michx.

"In arctic sub species cyrenus

Very badly preserved specimen, culm only, no lower stem leaves. Either ^{var} cordifolius or longicaulis of Wiegand, in all probability the former, as lacking the very long stem raised branches of the latter var. Photograph

Aster dumosus Michx.

"Rare in arctic

A thoroughly arctic species, 3 stems from me with only a single terminal flower to the shortest main stem. The Gray says comparative low erect herb - the flowers. A short undulating culm for var of A. dumosus. Photograph

Aster pseudotataricus Karst.
Aster sibiricus

no specimens in herb.

Karst. often did not preserve specimens of A. var. cordifolius, or var. longicaulis, but var. cordifolius is actually pseudotataricus!

A. var. cordifolius is perhaps just var. cordifolius. Photograph.

A.

Botanical notes

①

Botanical notes

1. Panicum capillare L. (Cyperus) - The Hair Grass

The plant is a grass, common to the ...
regions in the ...

2. Cyperus ...

Plant ...
The ...
... (...) ...
... the ...
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3. ... L. (Cyperus) - The Grass

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(H. Fla. ...)
...
...
...

4. *Phlox virginica* L. - Clayton # 297 - Ex. ...

Specimen ... $\sqrt{\text{...}}$...

5. *... ..* L. - Ex. ... - Clayton # ...

a. The ... Clayton # ...

Two plants on this sheet, the left one is a large robust specimen with ...

b. A ... Clayton # ...

2 different plants + ... the ... whole plants are ...

... ..



3

L. juniperina *regiana* L. - Hot. Cliff # 466

This is the type, but ^{to} it. ^{from}. It is the end of a young shoot, all the leaves ^{are} subulate & ^{are} ^{very} lepid. & possess more of the appressed scales. It is consequently indistinguishable, & none of the reference specimens sent me (picked up by me) apply.

Clayton # 884 (crossed out), 912. End in fact no. 893.

Two good specimens, no fruit however. Clearly the ^{same} variety, with shorter, thicker, less pointed scales, with large petiole base. Still very simple, however.

L. juniperina L. Type as Hot. Cliff # 468

One rather young shoot (1/2 to 3/4 in long), much ^{like} ^{the} ^{one} ^{above} ^{mentioned}. The ^{leaves} ^{are} ^{not} ^{quite} ^{so} ^{short} ^{as} ⁱⁿ ^{reference} ^{specimen}. But ^{indeed} ^{they} ^{are} ^{more} ^{like} ^{the} ^{one} ^{above} ^{mentioned}. ^{They} ^{are} ^{very} ^{simple}. ^{They} ^{are} ^{very} ^{like} ^{the} ^{one} ^{above} ^{mentioned}.

Clayton no 112 not in A. ^{It} ^{is} ^{very} ^{like} ^{the} ^{one} ^{above} ^{mentioned}. ^{It} ^{is} ^{very} ^{like} ^{the} ^{one} ^{above} ^{mentioned}.
specimen # 112

8. Alnus religiosa (Ait.) - Handb. 1777 in Rit. herb.

No locality. Occurs every day. A. religiosa

9. A. pedunculata Ait.

An exceedingly interesting fact. It is the top side of a large, even, unlobed, leafing A. religiosa, with unusually small leaves on the sides, broader, or perhaps wider, to be sure out. The name pedunculata dates from Ait. but was actually a name of Solmes, as the plant is marked A. pedunculata Sol in Solmes's handwriting. Ait. says in his description that the plant was cultivated in the garden of Mr. Baker. Above Solmes's writing, in this regard, is the name A. religiosa Ait. that was at 1788. This is a reference to his description. The Rind. herb. mentions that this plant is much the type both of A. religiosa as well as A. pedunculata Ait. It follows that A. pedunculata Ait. is a form of A. religiosa as well.

It now follows that Wiegand's concept of A. religiosa was pedunculata (Ait.) Rind. is entirely incorrect & meaningless. It is in fact a name of Solmes, the name A. religiosa Ait. is a name of Wiegand, but the name in the description is A. religiosa (Ait.) Rind. (under A. religiosa) as a result.

10. A. religiosa Ait. ex herb. Turin. A. religiosa
Tupia religiosa

1. *A. cordatum* - [unclear]

2. *A. denticatum* - [unclear]

Section [unclear]

1. *A. cordatum* - top of plant covered with [unclear],
2. well developed stem leaves. These are lanceolate

as in [unclear], [unclear], always green to the
touch, and the petiole is [unclear] winged. There is not
the slightest question [unclear] in this plant is
A. [unclear] Pite & primarily the var. laevigatum
Pite & Gray [unclear], when proper allowance is made
for the lack of stem leaves.

3. *A. [unclear]* -

The only [unclear] specimen is *A. [unclear]*
[unclear] p. 172.

are one or two small bands of water which the apparatus
 scales - mainly, these are approximately 100000, however, in
 these scales appear themselves thin + flattened out in degree,
 + density of any remaining water. The oil gland is put in water
 or lactone. Judging by the internal structure, I should say that
 they were definitely the same material, some small pointed scales
 type.

4. Inter-dimensions about 1/2 in. long. 1/2 in. wide

Top of head only with a depression in the center. Most
 marked "a constriction" in the group boundaries, which is not
 certainly is. There is some small irregularities in the group
 but does show all dimensions on the by side of the boundary
 Act! (see p. 10)

5. Area of the head about 1/2 in. x 1/2 in.

(see diagram)
 Top of head only with a depression in the center. Most
 marked "a constriction" in the group boundaries, which is not
 certainly is. There is some small irregularities in the group
 but does show all dimensions on the by side of the boundary
 Act! (see p. 10)

Just on the top, deep, the plate is the dimensions of

Group Members

A small sheet of paper is mounted by the
 conditions in the same position, just as they are a sheet +
 some with A small piece of paper, which is about 1/2 in. x 1/2 in.

6. *A. ...* - May 20

Typical ...

7. *A. ...* - May 22

Typical ...

8. *A. ...* - May 26 - 8.4

9. *A. ...* - 2.0

10. *A. ...* - 2.9

11. *A. ...* - 2.0

12. *A. ...* - 2.0

13. *A. ...* - 2.0

14. *A. ...* - 2.0

15. *A. ...* - 2.0

The ...

...

16. *A. ...* - 2.0

...

17. *A. ...* - 2.0

18. *A. ...* - 2.0

1. *S. rugosa* & *repida* (Gray) Merrill
Exalted specimens, by Gray of recent date

2. *S. thurstonii* -

Two excellent specimens of *S. thurstonii* in flower with red
with the bluish leaves! Specimens from Japan with green
leaves, which differ from *thurstonii* in some specimens
Gray's name is -

3. *Solmsia* *intermedia* -

Excellent specimen of *Solmsia* by Gray Merrill, from
Japan, which differs from *intermedia* in some specimens
Gray's name is -

4. *S. diffusa* -

Specimen of *Solmsia* from Japan, which differs from
diffusa in some specimens Gray's name is -

sheet 9 - *S. diffusa* Merrill

Meaning from Kalm. Note that *Solmsia* *latifolia* of L. is based on
Gray's name! Note that *Solmsia* *latifolia* of L. is based on
on Kalm plant. But no name on this sheet in L's handwriting. Peris
note by A. Gray "est A minor, i.e. diffusus Ait."

Sheet 10 - "K 77 radis albo - bicolor" in his handwriting

● Label by Poyen - "Solidago? potius Aster. n. 77 litt. ad Cl. Linn. 1763".

This is S. bicolor of Manual, very luxuriant form with branching racemes

H. B. All three sheets pinned together by Linnaeus, as representing 1 species, dicolor or bicolor.

1. Solidago sempervirens - sheet 1

3 miserable culms in bud, with 2 small ^{stem} leaves separate, probably this species.

2. S. canadensis sheet 2

= canadensis, the minutely scabrous puberulent form.

Sheet 3 pinned to sheet 2 - labelled on K [alm] is rugosa var. aspera of Manual

3. S. serotina - sheet 5

= rugosa of Manual. labelled altissima by Smith which it is not! - unknown hand in pencil "rugosa?" ~~Very remarkable to find name serotina in his handwriting!!~~ ~~file?~~

4. *S. altissima* - sheet 6

= canadensis of Manual with particularly small heads!
Apparently Gray's synonymy (p. 157) absolutely O.K.

5. *S. lanceolata* - sheets 11 + 12

= graminifolia of Manual

Common Name	Botanical Name	Date of Pollination	Remarks
<u>Walnut Family (Juglandaceae)</u>			
Butternut	Juglans cinerea		
Hickory	Carya		
<u>Birch Family (Betulaceae)</u>			
Hazelnut	Corylus	April	
Birch	Betula		
Alder	Alnus		
<u>Beech Family (Fagaceae)</u>			
Oak	Quercus		
<u>Nettle Family (Urticaceae)</u>			
Elms	Ulmus		
Nettle	Urtica	July - Sept.	
<u>Goosefoot Family (Chenopodiaceae)</u>			
Pigweed	Chenopodium	June - Sept	Cape is full of it
Lambs quarter			
Orach			
<u>Amaranth Family (Amaranthaceae)</u>			
Amaranth	Amaranthus		
Pigweed			
Water hemp			
<u>Quassia Family (Simarubaceae)</u>			
Tree of heaven	Ailanthus glandulosa	June - July	
<u>Olive Family (Oleaceae)</u>			
Ash	Fraxinus	May	
<u>Plantain Family (Plantaginaceae)</u>			
Plantain	Plantago major	All summer	
<u>Composite Family (Compositae)</u>			
Ragweed	Ambrosia	Mid. Aug. to frost	
Cocklebur	Xanthium	Late July to Sept.	In every dump
Clotbur			
Wormwood			
	Artemisia caudata	Aug. - Oct.	Abundant