

III.—*The American Species of the Genus Anemone and the
Genera which have been referred to it.*

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The genus *Anemone* as recognized by Bentham and Hooker in 1842 (Gen. Pl., i, 4), contained on their estimate about 70 species; Durand (Index. Gen. Phanerog. 1 (1888) estimated that the number then known was about 85, while Prantl (in Engler and Prantl, Naturl. Pflanzenfamilien, Lieferung 19, p. 61, 1888), placed the number at 90, including in this estimate the 5 known species of *Knowltonia*; so we may take Durand's estimate as the last one made. It was monographed by Pritzl (Linnæa, xv, 561-698, 1841). The species are widely distributed in temperate and sub-arctic or alpine regions of both hemispheres. A few occur in warm temperate and tropical regions, but the group is essentially one of temperate climates; 13 occur in Europe, 15 in British India, especially in the Himalayas (Hooker, Fl. Brit. Ind., i, 7), 16 in China (Forbes and Hemsley, Journ. Linn. Soc., xxiii, 10), 2 in South Africa (Harvey and Sonder, Fl. Cap., i, 3), 1 in Australia (Bentham, Fl. Austral., i, 8). In the following pages 39 species are recognized as American, placed in six genera, all of which are kept in *Anemone* by Bentham and Hooker, Baillon, and Engler and Prantl.

There has been no agreement among authors as to the limits of the genus. Tournefort recognized *Anemone* and *Pulsatilla*. Linnæus in the earlier editions of his Genera Plantarum had *Hepatica*, *Pulsatilla*, and *Anemone*, but united them all in the first edition of his Species Plantarum. Adanson maintained *Anemone* and *Pulsatilla*. Jussieu united all three. Among more recent authors there has been equal difference of opinion. Ledebour (Fl. Ross., i, 13-23) maintained the three as distinct, and this view is accepted by Nyman (Consp. Fl. Europ., 2-4). Gray has recognized *Anemone*, *Pulsatilla* and *Hepatica* in the first four editions of his Manual and in his Genera Illustrata, but united *Pulsatilla* with *Anemone* in the fifth

edition. Watson reduced them to *Anemone* in his Bibliographical Index, but in the sixth edition of Gray's Manual retains *Hepatica* as a genus. Freyn, who has recently studied Ranunculaceæ, considers *Pulsatilla* distinct (Deutsche Bot. Monats., viii, 78, 1890).

I am satisfied after a study of nearly all the described species that the first treatment of the group by Linnæus is the most satisfactory. There is perhaps less reason for keeping *Anemone* and *Pulsatilla* distinct than for separating *Hepatica*, but I find no transitions from *Pulsatilla* to *Anemone*, and it forms a very natural group of species both as to structure, habit, and geographical distribution throughout the north temperate zone.

As to the other genera referred to *Anemone* by recent authors I think them also clearly distinct. *Syndesmon*, Hoffm. (*Anemonella*, Spach), of eastern North America, has no close analogue in either *Thalictrum* or *Anemone*, to both of which it has been referred, and I entirely agree with Dr. Watson in keeping it as a genus, although under the older of the two generic names. *Barneoudia*, Gay, species of extra-tropical South America, are to me very different from any true *Anemone* or *Hepatica*, and very circumscribed in distribution. *Knowltonia*, of South Africa, referred to *Anemone* by Baillon and Engler and Prantl, but kept up by Benth and Hooker, I regard as distinct for similar reasons.

The essential characters of the genera known to occur in America as understood by me may be indicated as follows:—

- Achenia with long, plumose, persistent styles; outer stamens often sterile; involucre remote from the flower, 3-leaved; radical leaves digitately much divided 1. **Pulsatilla.**
- Achenia glabrous, pubescent, or woolly, with short, subulate, not plumose styles; stamens all antheriferous; involucre remote from the flower or flowers, 1-3-leaved, the leaves sessile or petioled; radical leaves various.
2. **Anemone.**
- Achenia pubescent, short-beaked; stamens all antheriferous; involucre approximate to the flower, 3-leaved, calyciform, the leaves sessile; radical leaves petioled, 3-lobed or sometimes 5-7-lobed..... 3. **Hepatica.**
- Achenia? carpels densely villous-pubescent; style glabrous; filaments all antheriferous; involucre 0; leaves petioled, entire..... 4. **Capethia.**
- Achenia cylindric; style filiform; stigma papillose; outer stamens dilated and petaloid; involucre 5-6-leaved or 5-6-lobed, contiguous with the flower; radical leaves entire, lobed or bifid..... 5. **Barneoudia.**
- Achenia columnar, terete, deeply grooved, the stigma sessile and truncate; stamens all antheriferous; involucre distant from the flower, of 2-3, sessile, ternate, long-stalked leaflets; radical leaves 2-3-ternately compound..... 6. **Syndesmon.**

1. **PULSATILLA**, L. Gen. Pl., 163 (1737).1. ***Pulsatilla hirsutissima*** (Pursh).

Clematis hirsutissima, Pursh, Fl. Am. Sept., 385 (1814).

Anemone Ludoviciana, Nutt. Gen., ii, 20 (1818).

A. Nuttalliana, D.C. Syst., i, 193 (1818).

A. Nuttallii, Nutt., Journ. Acad. Phil., 1825, 158.

Pulsatilla Nuttalliana, Spreng. Syst., ii, 663 (1825).

A. patens, Hook., Fl. Bor. Am., i, 4 (1830), not L.

Pulsatilla patens, A. Gray, Gen. Ill., i, 18, t. 3 (1848), not Mill.

A. patens, var. *Nuttalliana*, A. Gray, Man. Ed. 5, 36 (1867).

A. patens, var. *hirsutissima*, Hitchc., Trans. St. Louis. Ac., v, 482 (1891).

Villous, 12-40 cm. high. Leaves much divided into narrow, linear, acute lobes, the radical on slender petioles, those of the involucre similar, sessile, erect or ascending; sepals ovate-oblong, 2½-3½ cm. long, bluish-purple; fruit a head of silky achenia, with long, plumose styles. After flowering the peduncle elongates, sometimes to 30-40 cm.

Distrib. Prairies of Illinois to Manitoba, west to the Rocky Mountains, north and northwest. Perhaps also in Siberia.

The plant differs constantly from the European *P. patens* (L.), in its narrower and usually longer leaf-segments, and smaller flowers. The type of *Clematis hirsutissima*, Pursh, is in the Herbarium of the Philadelphia Academy of Natural Sciences.

2. ***Pulsatilla occidentalis*** (S. Wats.).

Anemone alpina, Hook., Fl. Bor. Am., i, 5 (1830), not L.

Anemone occidentalis, S. Wats., Proc. Amer. Acad., xi, 121 (1876).

Pulsatilla occidentalis, Freyn, Deutsche Bot. Monats., viii, 78 (1890).

Rather stout, silky-villous, 15-50 cm. high, simple. Radical leaves long-petioled, biternate, the divisions deeply pinnatifid into usually incised, linear, acute lobes; leaves of the involucre similar, short-petioled; flower 15-40 mm. broad, peduncled, the peduncle much elongated in fruit; sepals 6 or 7, oval-obtuse, white or purplish at the base; receptacle conic, sometimes 4 cm. long; achenia oblong, somewhat pubescent, the persistent plumose styles reflexed, 2-4 cm. long.

The plant differs from the European *P. alpina*, as noted by Dr. Watson, in its more finely dissected leaves with narrower segments, and in its elongated receptacle. I have not seen true *alpina* from America.

Distrib. California: Mt. Shasta (Brewer, 1419); Lassen's Peak, Sierra Nevada (Lemmon, 954). Oregon: Mt. Hood (T. Howell). Washington: (Tweedy); Mt. Rainier (Piper). British Columbia:

Rocky Mts. (Drummond); Kicking Horse Lake, Lake Agnes, National Park, Mt. Queest, Kootanie Lake, and Selkirk Mts. (Macoun); Cascade Mts. (Lyll); near Lytton (Dieck, according to Freyn); Goose Creek Mts. (Bowman); Kootanie Pass (Dawson).
Type of *Anemone occidentalis*, S. Wats. in Herb. Gray.

2. **ANEMONE**, L. Gen. Pl., 163 (1737).

- Achenia woolly-pubescent, numerous, densely capitate.

† Plants slender, usually low, 1-2-flowered.

‡ Stems mostly single from a tuberous root.

○ Flowers always solitary.

+ Radical leaves or some of them simply ternate.

1. **Anemone decapetala**, Ard.

A. decapetala, Ard., Spec. Bot., ii, xxvii, t. 12 (1764).

A. trilobata, Juss., Ann. Mus., iii, 247, t. 21, f. 3 (1804).

A. heterophylla, Nutt. in T. & G. Fl. N. A., i, 12 (1838).

A. Berlandieri, Pritz., Linnæa, 1841, 628.

A. Caroliniana, var. *heterophylla*, T. & G. Fl. N. A., i, 12 (1838).

A. decapetala, var. *heterophylla*, Brit. & Rusby, Trans. N. Y. Ac. Sci., vii, 7 (1887).

Appressed pubescent or glabrate, 10-30 cm. high. Stems single or very rarely two together from a globose or cylindrical tuber; radical leaves slender-petioled, ternate, the divisions broad, ovate, oval or obovate, stalked or rarely sessile, thick, crenate or incised-obtuse, 1½-2 cm. long; or some of them divided into linear-oblong segments; leaves of the involucre on short, broad petioles, cleft into linear or oblong-linear lobes; flower blue, 2-3 cm. broad; sepals usually 10-20, linear-oblong, obtuse, glabrous; peduncle much elongated in fruit; head of fruit cylindrical, ½-2 cm. long; style subulate, about 1 mm. long.

Distrib. Southern Brazil, Uruguay, the Argentine Republic, Mexico, and the southern United States. Brazil: (Arduino in Herb. Linn.); Minas-Geraes (Regnell); Rio Grande do Sul (St. Hilaire). Uruguay: Montevideo (Courbon, 119). Argentine: La Plata (Commerson); Buenos Ayres (Tweedie). Mexico: Chihuahua (Torrey fide Hemsley). United States: Arkansas (Nuttall); Texas (Berlandier, 193, 1453, 1891; Reverchon, 4; Wright; Miss Croft; Merrill); American Plains (Hall and Harbour, 6; Buckley; Trecul, 1493); Louisiana (Hale); Alabama (Buckley).

The species shares with a considerable number of other plants the peculiarity of inhabiting the southern United States and Mexico, and extra-tropical eastern South America.

Type of *A. decapetala*, Ard., in Herb. Linn.; type of *A. trilobata*, Juss., in Herb. Mus. Paris; type of *A. heterophylla*, Nutt., in Herb. Col. Coll.; type of *A. Berlandieri*, Pritz. in Herb. Delessert.

++ Radical leaves repeatedly ternately divided.

+ South American.

2. *Anemone tridentata*, Vahl.

A. tridentata, Vahl, Symb., ili, 74, t. 65 (1794).

A. fumariæfolia, Juss., Ann. Mus., iii, 247, t. 20, f. 2 (1804).

Erect, slender, more or less appressed-pubescent, 6-45 cm. high. Radical leaves slender-petioled, repeatedly divided into oblong or linear, acute, dentate or entire segments; leaves of the involucre sessile, similarly divided into narrowly linear or filiform segments; flower solitary, white (?), 12-25 mm. broad; sepals 5-16, linear-oblong, obtuse or obtusish; head of fruit 16-25 mm. long; style short.

Distrib. Southern Brazil, Uruguay, the Argentine Republic, and eastern Chili and Bolivia. Brazil: (St. Hilaire; Sellow, 1161). Uruguay: Montevideo (Commerson; Courbon, 120; Fox, 366; Gibert, 141; Lorentz, 1052; Gillies; King). Argentine: (Hieronymus, 162). Chili: (Lechler, 2798); Nuble (Philippi). Bolivia: Tomina (Weddell); La Banca (Pearce); Sorata (Mandon, 868); La Paz (Rusby, 1753).

Closely related to *A. decapetala*, differing in its finely divided radical leaves, which are often of the aspect of those of some *Thalictrums*.

I have not seen Vahl's specimen, but his figure and description are entirely satisfactory. The type of *A. fumariæfolia*, Juss., is in the Herbarium of the Musée d'Histoire Naturelle at Paris.

+ + North American.

3. *Anemone Caroliniana*, Walt.

A. Caroliniana, Walt., Fl. Car., 157 (1788).

A. tenella, Pursh, Fl. Am. Sept., ii, 387 (1814).

Hurtiana, Raf. Neogen. 2 (1825).

Appressed-pubescent or glabrate, slender, erect, 10-25 cm. high, from a globose or slightly elongated tuber. Radical leaves petioled, ternate, the divisions short-stalked or sessile, cleft or pinnatifid into linear or oblong, sometimes cuneate lobes and segments; leaves of the involucre similarly divided on short, broad petioles or sessile; flowers purple or nearly white, 1.5-3 cm. broad; sepals 10-20, linear-oblong, obtuse, more or less pubescent on the exterior; head of fruit ovoid, 1½-2 cm. long; style subulate, usually less than 1 mm. long.

Distrib. Illinois to Nebraska, south to Georgia, Alabama, Louisiana, and Texas.

This has been referred by nearly all recent American authors, myself included, to *A. decapetala*, but erroneously.

The type does not exist in Walter's Herbarium at the British Museum of Natural History, but his description is satisfactory.

o o Flowers usually 2, the second peduncle involucellate.

4. *Anemone sphenophylla*, Poepp.

A. sphenophylla, Poepp., *Fragm. Syn.*, 27 (1833).

A. bicolor, Poepp. in *Herb. Distr.*, No. 150.

A. Chilensis, Spreng. ex Eichl., *Fl. Bras.*, xiii (I), 152 (name only).

A. macrorhiza, Domb. ex Eichl., loc. cit. (name only).

A. bilobata, Phil., *Cat. Pl. Vasc. Chil.*, 5 (?), (name only).

Erect, more or less pubescent, 10-60 cm. Radical leaves slender-petioled ternately divided, the divisions obovate, obtusè, cuneate at the base, variously lobed and cleft; leaves of the involucre short-petioled or sessile by a narrowed base, palmatifid into linear or oblong acute segments; flowers commonly 2 (1-3), blue, the first peduncle naked, the subsequent ones involucellate; sepals oblong-oval obtuse, 1-1.5 cm. long, pubescent on the outer side; head of fruit ovoid or cylindrical, 2-4 cm. long; achenia densely woolly; style very short.

Type in *Herb. Mus. Hist. Nat. Paris*.

The species has usually been referred to *A. decapetala*, but is in my judgment distinct, sharing the peculiarity of so many plants of eastern and western America in being closely related but different.

Distrib. Chili and the southwestern United States. Chili: (Poeppig, 151 (type), 150; Bertero, 801, 46; Gaudichaud, 224; Gay, 30; Dombey; Cuming, 645; Philippi, 254; Bridges, 26; Lechler, 3295); Juan Fernandez (Reed). United States: Utah (M. E. Jones, 1607; Johnson; Parry, 1); New Mexico (Wright, 1304; Fendler, Mexican Boundary Survey, 8; near Silver City (Greene); Arizona: Sierra Tucson (Pringle); Verde River Mesa (Smart).

All the Chilian plants which have been referred to *A. decapetala* apparently belong to this species. The North American specimens appear to me to be identical with the Chilian.

- ‡ † Stems single or several from a slender, woody rootstock.
 o Radical leaves simply ternate, the divisions cuneate-obovate,
 crenate or lobed.

5. ***Anemone parviflora***, Michx.

- A. parviflora*, Michx., Fl. Bor.-Am., i, 319 (1803).
A. cuneifolia, Juss., Ann. Mus., iii, 248, t. 21, (1804).
A. trilobata, Pers. Syn., ii, 97 (1807).
A. borealis, Richards., Frank. Journ., Ed. 2, App. 22 (1823).
A. cuneata, Schlecht., Linnæus, 1831, 574.
A. tenella, Banks, ex Pritz., Linnæus, 1841, 632.

Sparingly hairy, 10-30 cm. high, from slender rootstocks. Leaves petioled, three-parted, the broadly wedge-shaped divisions obtusely lobed or crenate, those of the involucre nearly sessile, more deeply and narrowly lobed; flower 2½ cm. or less in diameter; sepals 5-8, oval, very obtuse, white; head of fruit short-oblong or globose, about 1 cm. long; style subulate, 1 mm. long.

Distrib. Anticosti, Labrador, Newfoundland, and Quebec, Lake Superior, Minnesota, Montana, Colorado, British Columbia, and in Arctic America generally to Alaska. Also in eastern Siberia.

Type of *A. parviflora*, Michx., in Herb. Michx.; type of *A. cuneifolia*, Juss., in Herb. Juss.; type of *A. borealis*, Richards., in Herb. Mus. Brit.

- o o Radical leaves ternately pinnatifid into linear lobes.

6. ***Anemone Drummondii***, S. Wats.

- A. Drummondii*, S. Wats., Bot. Cal., ii, 424 (1880).

Tufted, slender, erect, 12-22 cm. high, pubescent with long, appressed or slightly spreading hairs. Radical leaves slender-petioled, ternate, the divisions pinnatifid into linear, usually short, obtusish lobes and segments; leaves of the involucre similar, short-petioled; flowers 1-2, long-peduncled, when 2 the second peduncle involucrellate about at the middle; flowers 1-2 cm. broad; sepals about 5, oval, obtuse, light blue, finely pubescent on the lower side; head of fruit ovoid, about 1 cm. long; achenia woolly-pubescent, 4 mm. long, tipped with a filiform style of nearly their own length.

Closely related to *A. Baldensis*, L., of Europe, differing especially in the long, filiform style.

Distrib. California: Sierra Co. (Lemmon); Lassen's Peak (Mrs. Austin); Scott Mt. (Greene, Lemmon); Castle Peak and Siskiyou Co. (Pringle). Oregon: Mt. Hood (T. Howell; Henderson). British Columbia: Rocky Mts. (Drummond, Richardson); Canmore, Lake Agnes, Kicking Horse Lake, and Mt. Aylmer (Macoun); N. Kootanie Pass (Dawson).

†† Plants tall, 2-several flowered (rarely 1-flowered).

‡ Lateral peduncles involuclate.

○ Involucral leaves short petioled; leaf-segments narrow.

7. *Anemone multifida*, Poir.

A. multifida, Poir., Suppl. Lam. Encycl., 1, 364 (1810).

A. Hudsoniana, Richards., Frank. Journ., Ed. 2, App. 22 (1823).

A. Commersoniana, D.C. ex Deless., Ic., 1, 4, t. 17 (1820).

A. globosa, Nutt. ex Pritz., Linnæa, xv, 673 (1841).

A. lanigera, Gay, Fl. Chil., i, 22 (1845).

A. sanguinea, Pursh. ex Pritz., Linnæa, 1841, 672.

A. narcissiflora, H. & A. Bot. Beechey, 121, not L.

Silky-hairy, 15-45 cm. high, sparingly branched, the latter peduncles involuclate. Radical leaves long-petioled, five-parted, the cuneiform divisions cleft into linear, acute lobes; those of the involuclres short-petioled, more or less cuneate, otherwise similar; sepals 5-9, greenish or red (rarely yellow), oblong, forming a flower 12-25 mm. broad; head of fruit globose or oblong, 12-25 mm. long; achenia compressed, densely woolly, tipped with the subulate styles.

Distrib. Anticosti, Hudson's Bay and New Brunswick to northern New England, west to northern Michigan, Minnesota, British Columbia, and Oregon, and in the Rocky Mountains south through Colorado to Arizona (Mearns); also at the sea-level at the Straits of Magellan. Cape Horn (Hahn, 79); Magellan (Guillon, Voyage de l'Astrolabe et de la Zélée); Magellan (Poeppig, 957, 159 in Herb. Distr.; Chili Austral (Gay, *A. lanigera*); Sandy Point (Cunningham, Lechler, 957); Port Famine (King). Pampas de Arquihua, base of the Andes, 400 ft. (Pearce).

Some of the specimens from the Straits of Magellan are more woolly-pubescent than those from the United States, but otherwise I have detected no differences.

The type of *A. multifida*, Poir., is in Herb. Jussieu at Paris; that of *A. Hudsoniana*, Richards., in the Herbarium of the British Museum of Natural History; that of *A. lanigera*, Gay, in the general herbarium of the Paris Museum; and that of *A. globosa*, Nutt., in the Herbarium of Columbia College.

Small specimens without rootstocks may be mistaken for *A. Caroliniana*.

oo Involucral leaves slender-petioled; leaf-segments broad.

8. *Anemone Virginiana*, L.

A. Virginiana, L., Sp. Pl., 540 (1753).

A. hirsuta, Mönch., Meth. Suppl., 105 (1802).

Abelmis petiolaris, Raf. in Herb. Paris.

Hairy, 60-90 cm. high, stout, branching at the primary involucre, the lateral peduncles bearing secondary involucre. Radical leaves long-petioled, broader than long, three parted, the divisions broadly cuneate-oblong, vari-ously cleft and divided into acute, serrate lobes; leaves of both primary and secondary involucre similar, on petioles 25-50 mm. long; sepals generally 5 [4-5], white or greenish, acute or obtuse; flower 20-40 mm. broad; head of fruit oblong, 20-30 mm. long; achenia compressed, woolly tipped with the persistent subulate styles, which are about 1½ mm. long.

Distrib. New Brunswick and Nova Scotia to South Carolina, west to Kansas and Manitoba and the Canadian Rocky Mountains (Lyll, Macoun).

Type of *A. Virginiana*, L., in Herb. Linn.

In the British Museum Herbarium are two sheets, one from the Chelsea Garden, 1722, the other from Kew, differing from typical *Virginiana* by longer petioles to the involucre leaves, and narrow leaf-segments. There is also a specimen of the same in the Herbarium of Columbia College, received from Meisner, grown in some European garden. I have not seen wild specimens which would exactly match these.

‡‡ Lateral peduncles usually naked; involucre leaves slender-petioled.

9. *Anemone cylindrica*, A. Gray.

A. cylindrica, A. Gray, Ann. Lyc. N. Y., iii, 221 (1836).

Silky-hairy throughout, 30-70 cm. high, branched at the involucre. Radical leaves tufted, long-petioled, broader than long, 3-5 parted, the divisions cuneate-obovate or cuneate-oblong, narrow; those of the involucre similar, on petioles about 2½ cm. long; sepals 5-6, greenish-white, oblong, generally obtuse; flowers about 2 cm. broad, on elongated, generally naked petioles; head of fruit cylindrical, 2½-3 cm. or more in length; achenia compressed, woolly, tipped with the minute styles.

Distrib. New Brunswick, eastern New England, Ontario, New York, and northern New Jersey to Kansas and Manitoba; also in the Black Hills and Rocky Mountains south to Colorado, and New Mexico and in British Columbia (Macoun). Plants with

secondary involucre found in British Columbia (Macoun), at Presque Isle, Penn. (Garber), and at Lincoln, Neb. (Webber).

Type in Herbarium of Columbia College.

- Apparently intermediate between divisius • and •••; achenia numerous, densely capitate, but in the young state only slightly pubescent.

10. **Anemone Tetonensis**, Porter, n. sp.

A. Baldensis, Hook., Fl. Bor. Am., i, 15 (1830)? not L.

Springly pubescent with long whitish hairs, especially at the involucre, erect, from a woody rootstock, 10-15 cm. high. Radical leaves slender-petioled, ternately divided, the divisius cleft into linear-oblong, obtusish lobes; leaves of the involucre similar, on petioles about 1 cm. long, their divisions and lobes somewhat broader; flowers 1-2, long-peduncled, 1-1½ cm. broad, red or pink; sepals 5, ovate-oval, obtuse, finely appressed-pubescent without; young achenia in a globose head about 6 mm. in diameter, sparingly pubescent, tipped with short, subulate styles.

Distrib. Idaho: Teton Range, 10,000 feet altitude, 1872 (Coulter); Needle Peak of Lost River Mts., 1890 (Vernon Bailey).

I am uncertain whether the *A. Baldensis*, of Hooker, belongs to this species or to *A. Drummondii*, S. Wats.

- Achenia glabrous or merely strigose-pubescent, less numerous.

† Plants strictly 1-flowered.

‡ Involucral leaves sessile or nearly so.

○ Achenia with long, reflexed styles.

11. **Anemone Richardsonii**, Hook.

A. Richardsonii, Hook., Fl. Bor. Am., i, 6 (1830).

A. ranunculoides, Richards., Frank. Journ., App. 12, not L.

A. arctica, Fisch., Linnæa, 1831, 574.

A. Vahlîi, Hornem., Fl. Dan., t. 2176.

Low, slender, pubescent, 5-30 cm. high, from slender rootstocks. Radical leaves reniform, slender-petioled, 3-5 parted, the lobes acute, broadly oblong, dentate or crenate; those of the involucre similar, sessile; flower single, about 20 mm. broad, white (?); sepals about 6, oblong; head of fruit depressed-spherical; achenia nearly glabrous, compressed, ovate-oblong, reflexed, tipped with a hooked persistent style of about their own length.

Distrib. Greenland, shore of Hudson's Bay, British Columbia, and in Arctic America generally to Alaska; also widely distributed in Siberia.

Type of *A. Richardsonii*, Hook., in Herb. Mus. Brit. and of *A. Vahlîi*, Hornem., in Herb. Mus. Paris.

o o Achenia with short styles.

12. *Anemone deltoidea*, Dougl.

A. deltoidea, Dougl. in Hook. Fl. Bor.-Am., i, 6, t. 3, f. a (1830).

Springily hirsute-pubescent, simple, slender, erect, 15-30 cm. high. Root-stock illform. Leaves 3-foliolate, the radical ones slender-petioled, those of the involucre nearly sessile; leaflets ovate, somewhat deltoid, obtuse or rounded at the base, acute at the apex, coarsely and irregularly crenate, sometimes incised, 2-5 cm. long; flower solitary, white, long-peduncled, 15-30 cm. broad; sepals 5-6, oval-obovate, obtuse; achenia several, densely pubescent, ovoid, somewhat flattened; style subulate, less than 1 mm. long; receptacle densely pubescent.

Distrib. Oregon (Scouler; Burke; Nuttall; Howell; E. Hall, 2; Nevius). Washington (Suksdorf); Columbia River (Douglas). California, Humboldt Co. (Rattan; a very large-flowered form with broader involucral leaves).

Type in Herb. Mus. Brit.

‡ ‡ Involucral leaves slender-petioled.

o Eastern species.

13. *Anemone quinquefolia*, L.

A. quinquefolia, L. Sp. Pl., 541 (1753).

A. nemorosa, Amer. Authors, not L.

A. pedata, Raf. Med. Rep. (ii) v, 361 (1808).

A. minima, D.C. Syst., i, 206 (1818).

A. nemorosa and var. *quinquefolia*, A. Gray, Man., Ed. 5, 38 (1867).

Low, simple, nearly glabrous, 10-20 cm. high, from thick, horizontal root-stocks. Radical leaves long-petioled, appearing later than the flowering stem, 3-foliolate, the lateral leaflets 2-parted nearly or quite to the base, the divisions oblong, cuneate, dentate; those of the involucre on slender petioles about 20 mm. long, 3-5 parted, the divisions 3-4 cm. long, acute, variously cut and lobed; flower 18-25 mm. broad; sepals 4-9, obovate or oval, white, or purplish without; head of fruit globose; achenia 4-10, pubescent, oblong, tipped with short, bent styles.

Distrib. Nova Scotia to Georgia, west to the Rocky Mountains; also in China (Herb. Kew).

Readily distinguishable from the European *A. nemorosa* by its slender habit, slender petioles, less lobed divisions of the involucral leaves, paler green of the foliage, and smaller flowers.

The species is based on "*Ranunculus nemorum, fragariæ foliis*,

Virginianus," Pluk., t. 106, f. 3, which is a satisfactory representation of our plant, and on a specimen from Kalm preserved in the Linnæan Herbarium.

14. *Anemone trifolia*, L.

A. trifolia, L. Sp. Pl., 540 (1753).

A. lancifolia, Pursh, Fl. Amer. Sept., 386 (1814)

A. nemorosa, var., A. Gray, Amer. Nat., vii, 422.

Stout, erect, sparingly pubescent, 25-40 cm. high. Radical leaves long-petioled, ternate, the divisions ovate or ovate-lanceolate, acute, coarsely dentate, incised, or the lateral ones sometimes 2-parted, 6-10 cm. long, 4-6 cm. broad, thick; involucrel leaves ternate, similar to the radical on stout petioles, 2-4 cm. long; flower white, 20-35 mm. broad; sepals oval, obtuse; head of fruit globose, about 1 cm. in diameter; achenia finely and densely pubescent, numerous, narrowly oblong, acuminate, tipped with short, slightly bent styles.

Distrib. Virginia: Salt Pond Mt. and Peaks of Otter: Pennsylvania; Layton's Station, Fayette Co. (S. W. Knipe, in Herb. Porter). Also in mountainous regions of continental Europe.

Type, a European specimen in Herb. Linn. I have little doubt that Pursh's *A. lancifolia* is this species, but I have not been able to find an authentic specimen of it. He says it occurs "on high mountains in boggy soil, Pennsylvania and Virginia." Schweinitz knew the plant and sent it to A. Brongniart under the name "*A. cuneifolia*."

oo Western species.

15. *Anemone Grayii*, Behr.

A. Grayii, Behr. in Kellogg, Bull. Cal. Ac., i, 5 (1884).

A. Oregona, A. Gray, Proc. Amer. Acad., xxii, 308 (1887).

A. cyanea, Freyn, Deutsche Bot. Monats., viii, 176 (1890), not Risso, Fl. Nice, 2 (1844).

Stem erect, very slender, nearly glabrous, 20-50 cm. high. Radical leaves slender-petioled, 3-parted, the divisions crenate-serrate; leaves of the involucre on slender petioles 1-3 cm. long, 3-divided, finely appressed-pubescent, the divisions similar to those of the radical ones, but often 2-3-cleft; flower 1½-2½ cm. broad; sepals commonly 5, ovate-oval, obtuse, glabrous, blue or purplish (rarely white?); achenia in a globose head, rather numerous, pubescent; styles short and slightly bent.

Distrib. Washington (Suksdorf). Idaho: Upper Clearwater (Watson, 6). Oregon: (Geyer, 606); Hood River (Mrs. Barrett; Henderson); Cascade Mts. (J. Howell); Waldo (T. Howell, 621);

Clear Water (Spaulding); Mt. Adams (Henderson); Siskiyou Mts. (L. W. Lee). California: (Kellogg and Harford, 4); Sierra Co. (Lemmon, 992); Upper Sacramento River and Mt. Tamalpais (Greene); Redwoods (Bolander; San Geronimo Ranch (Bigelow).

I am regarding the Californian and Oregon species as the same with some hesitation, but the specimens which I have seen do not afford me sufficient characters for their separation, and have followed Professor Greene (Pittonia, i, 48) in reducing *A. Oregona* to *A. Grayii*.

16. *Anemone Lyallii*, n. sp.

Slender, erect, nearly glabrous throughout, 10-40 cm. high, from a short horizontal rootstock. Radical leaves not seen; leaves of the involucre on very slender petioles 1.5-3 cm. long, 3-divided, the divisions sessile, ovate, or the terminal one sometimes nearly orbicular, dentate-crenate, or sometimes incised, acute, or obtuse, very thin, more or less ciliate along the margins; flowers solitary, white, about 1 cm. broad, its peduncle slightly exceeding the petioles of the involucral leaves; sepals about 5, oval-oblong, obtuse; young achenia quite densely strigose-pubescent.

Distrib. Sumass Woods, Lower Frazer River (Lyll); Washington (Suksdorf); Cascade Mts. (Howell); Victoria (Jas. Fletcher); Vancouver Island (Macoun); Wallamette Valley (Cusick); near Portland (Henderson); Salmon River, B. C. (Dawson).

Lyall's specimens preserved in Herb. Kew represent two quite different forms of leaves, but they evidently belong to the same species.

†† Plants tall, 2-several-flowered, the lateral peduncles involucellate.

† Involucels of the lateral peduncles distant from the main involucre.

o North American.

17. *Anemone Canadensis*, L.

A. Canadensis, L. Syst., Ed. 12, iii, App. 231 (1768).

A. Pennsylvanica, L. Mant., ii, 247 (1771).

A. irregularis, Lam. Encycl., i, 167 (1783), fide S. Watson.

A. aconitifolia, Michx., Fl. Bor. Am., i, 320 (1803).

A. Laxmanni, Steud. Nom., Ed. 2, i, 96.

30-60 cm. high, somewhat hairy, especially on the lower surfaces of the leaves, branching at the involucre. Radical leaves long-petioled, broader than long, 3-5 parted, the divisions broad, oblong, acute, variously cleft and toothed, those of both primary and secondary involucre similar, sessile; sepals white, oblong, obtuse; flower 2½-3½ cm. broad; head of fruit globose; achenia flat, nearly orbicular, pubescent, or nearly glabrous at maturity, tipped with the stout, persistent style which is about their own length.

Distrib. Labrador and Anticosti to Maryland and Pennsylvania, west to Kansas and the Rocky Mountains, and to the Pacific coast of British America (Hooker).

Type of *A. Pennsylvanica*, L., in Herb. Linn.; type of *A. acutifolia*, Michx. in Herb. Michaux.

At the place of first publication of this plant Linnæus says of its origin: "Hab. in Pennsylvania, D. Hope;" but when he republished it in the Mantissa three years later he says, "Hab. in Canada, H. U. (Hortus Upsaliensis);" curiously interchanging the locality and the specific name.

A. dichotoma, L. Sp. Pl., 540 (1753), of Siberia. (Type in Herb. Linn.), differs constantly in its narrower, oblong, leaf-segments which are toothed only towards the apex, and its glabrous achenia.

oo South American.

+ Leaves coriaceous; flowers 4-5 cm. broad. Chilian.

18. *Anemone rigida*, C. Gay.

A. rigida, C. Gay, Fl. Chil., i, 25 (1845).

Erect, stout, rigid, loosely pubescent, 3-6 dm. high. Radical leaves long-petioled, coriaceous, deeply 3-parted, the divisions obovate, obtuse, incised, and coarsely dentate, the teeth mucronulate; leaves of the involucre sessile or narrowed at the base into short, broad petioles, 3-lobed to beyond the middle, incised and dentate similarly to the radical ones, appressed-pubescent with scattered hairs on both surfaces; involucre about 4-flowered, the first peduncle naked and slightly shorter than the others, which are involucrate with two sessile leaves at about the middle; flowers 4-5 cm. broad; sepals 4-6, broadly oval, obtuse, finely veined; filaments 3-5 mm. long; head of fruit globose-ovoid, about 1 cm. thick; achenia ovoid, acute, glabrous, except for a slight strigose pubescence at the base, tipped with a short, incurved style; receptacle densely pubescent, at length about twice as long as broad.

Distrib. Chili: (Gay); Talcareque (Reed); Cordillera de S. Fernando (Philippi).

Type in the Paris Herbarium.

+ + Leaves membranaceous.

□ Chilian and Peruvian species.

19. *Anemone Antucensis*, Poepp.

A. Antucensis, Poepp., Fragm. Syn., 27 (1833).

Erect, slender, finely pubescent, 3-7.5 dm. high. Radical leaves slender petioled, membranaceous, deeply 3-5-parted or 3-5-cleft, the divisions obovate

or broadly oval, quite regularly incised and coarsely dentate, with obtuse, mucronulate teeth; involueral leaves sessile, otherwise similar to the radical ones; involucre 1-3-flowered, the first peduncle naked, the others involuclate with three or rarely two sessile leaves at about the middle; flowers white, about 2 cm. broad; sepals 4-6, oval, acutish or obtuse; filaments 3-4 mm. long; head of fruit globular; achenia about 15, lanceolate, glabrous, about 5 mm. long, very acute and tipped with a hooked style of about their own length; receptacle scurfy, not pubescent.

Distrib. Chili: Andes de Antuco (Poeppig, 150; Lechler, Pl. Chil., 3059).

Type in the Paris Herbarium.

20. *Anemone helleborifolia*, D.C.

A. helleborifolia, D.C., Syst. 1, 211 (1818).

A. æquinocialis, Poepp., Fragm. Syn., 27 (1833).

Erect, slender, tall, 40-80 cm. high, glabrous or nearly so. Radical leaves long-petioled, rather thick-membranaceous, glabrous, 3-parted, the divisions deeply lobed, cuneate, sometimes parted to the base, acute at the apex, sharply dentate-serrate, 8-12 cm. long; petioles 8-12 cm. long, pubescent or glabrate; leaves of the involucre short-petioled, similar to the radical but smaller, their petioles pubescent; flowers several or numerous, white, 1½-2 cm. broad, the lateral peduncles involuclate near the summit, 1-4-flowered; sepals 5, oval, obtuse; achenia 10-20, oval, glabrous, or very nearly so; style short, hooked; receptacle pubescent.

Distrib. Peru: (Dombey, Poeppig, Pearce.)

Type of both *A. helleborifolia*, D. C., and *A. æquinocialis*, Poepp., in the Paris Herbarium.

21. *Anemone Peruviana*, n. sp.

Erect, 3-9 dm. high. Radical leaves long-petioled, 5-7-divided, the segments obovate, cuneate at the base, deeply incised and dentate with mucronate-pointed teeth, a few scattered hairs on both surfaces; leaves of the involucre 2-5, short-petioled, mostly 3-divided, otherwise similar to the radical ones, but smaller, their petioles pilose-pubescent at the base; rays of the primary umbel 2-7, slender, 7-15 cm. long, the first one to appear naked and at length shorter than the others, which are involuclate and 2-4-flowered at the summit; flowers nearly an inch broad; sepals 4-7, lanceolate, acute or acuminate, veined; filaments broad; anthers oblong; achenia ovoid, glabrous, 2 mm. long, tipped with a slender, incurved style of about half their length; receptacle pubescent.

Distrib. Peru: Mathews, 537 (Hb. Kew); McLean (Hb. Kew).

□ □ Brazilian species.

22. *Anemone Sellowii*, Pritz.

A. Sellowii, Pritz., *Linnaea*, xv, 667 (1841).

"Folius radicalibus ternatis, foliolis breviter petiolatis late ovatis supra argute-serratis, lateralibus profundissime bipartitis, intermedio trifido, involucribus sessilibus minutis inciso-serratis, caule bifloro, sepalis subnovenis ovato-oblongis, carpidiis glabris, stylo tenui longo apice involuto."

"Habitat in Brasilia, Sellow, Coll. Pl. Bras., 891."

All I know of this plant is drawn from Pritzel's original description, and that of Eichler in Martius Flora Brasiliensis, xiii, part i, 153, t. 34, where the specimen contained in the Berlin Herbarium is beautifully figured. As suggested by Eichler, the species is allied to *A. Antucensis*, Poepp., but the engraving shows that it is clearly distinct.

23. *Anemone Glazioviana*, Urban.

A. Glazioviana, Urban., *Linnaea*, xliii, 255 (1880-1882).

"Petiolis 15-22 cm. longis, inferne parce, superne sicut lamina magis hirtulo-pilosis, foliis ternatim sectis, foliolis 0.7-3 cm. longe petiolulatis late rhombeis, lateralibus usque $\frac{1}{2}$ - $\frac{3}{4}$ longitudinis 2-partitis, intermedio ad $\frac{1}{2}$ - $\frac{1}{2}$ partem trifido, lobis obovato-rhombis crenatis crenis apiculatis; pedunculo 1-2 floro, involucri parvulo; sepalis circa 10 glabris 3 cm. longis oblongo-lanceolatis, ad basin unguiculario-angustatis; staminibus partem 4 tam sepalorum æquantibus, antheris connectivo paullulum producto apiculatis; carpidiis glabris, stylis mediocribus apice revolutis.

"Rhizoma breve validum fibras inferne ramosas emittens ad verticem gerit squamas paucas, folia 2-3 et pedunculum scapiformem.—Folia explanata ambitu $\frac{3}{4}$ peripheriæ orbis præsentia circa 12 cm. lata 7-8 cm. longa membranacea, utrinque, subtus præsertim ad nervos, pilosa, marginibus ciliata; foliola subobconico-disposita.—Pedunculi pedales breviter pilosi; involucrium 1.5 cm. longum, 5 cm. a flore insertum, sessile trifoliolatum, foliolis liberis, intermedio ad $\frac{3}{4}$ longitudinis trilobo, cæteris oblongis inciso-dentatis; pedunculus secundarius obvius, sed nondum evolutus; involucrium 2 foliolatum basale cum involucrio combinatum.—Flos sub antheri 6 cm. diametro; sepala exteriora 8-9 mm., interiora 6-7 mm. lata, nervis e basi prodeuntibus 5-7 superne ramosis.—Stamina 5-6 mm. longa.—Carpidia ultra 20, gynophori prominentis innixa; ovaria ovato-oblonga in stylis iis æquilongos v. paullo longiores flexuosos tenues, apice stigmatoso circumnatis revolutos attenuata."

Prope Rio de Janeiro; Glaziov, n. 4744.

"Obs. *A. Sellowii*, Pritz., discrepat petiolis 5-10 cm. longis densius pubescentibus, foliolis 0.3-1 cm. longe petiolulatis multo angus-

tioribus, lateralibus ad $\frac{3}{4}$ longitudinis v. plerumque fere usque ad basin 2-partitis, intermedio ad $\frac{1}{2}$ - $\frac{3}{4}$ partem trifido, lobis obverse v. subrhombico-lanceolatis, sepalis 1.2-1.5 cm. longis ad basin brevius et minus angustatis, staminibus dimidium floris æquantibus, antheris obtusissimis v. truncatis; *A. Antucensis*, Poepp. Frag. Syn. Plant. Chil. p. 27, Gay Chil. i, 25, quæ cum *A. Sellowii* magnitudine floris congruit, ab utraque longe recedit foliolis sessilibus, involuero amplo ad 6 cm. longo, involucello segregato, sepalis 6 (an semper?) dorso puberulis."

Not seen by me.

‡‡ Lateral peduncles bracted at the base, close to the primary involucre.
Mexican species.

24. *Anemone Mexicana*, H. B. K.

A. Mexicana, H. B. K., Nov. Gen., v, 33 (1821).

Erect, villous-pubescent, 30-50 cm. high. Radical leaves slender-petioled, 3-parted, the divisions broadly oval, narrowed, or cuneate at the base, deeply incised and coarsely dentate with mucronate teeth; leaves of the involucre two, sessile or petioled, similar to the radical; involucre 1-4-flowered, the first peduncle naked, the others bracted at the base; flowers white, about 2½ cm. broad; sepals 4-6, oval or somewhat obovate, obtuse; head of fruit globose-ovoid; receptacle pubescent; filaments very slender, 2-3 mm. long; achenia ovoid, slightly pubescent, narrowed at the apex, tipped with a short style.

Distrib. Mexico: (Jurgensen, 240; Parkinson); Zinapan (Coulter, 654); Oaxaca (Galeotti, 4540); San Luis Potosi (Schaffner, 30); Santa Rosa (Dugés); Chiapas (Ghiesbrecht, 132).

Type in Herb. Humboldt, Bonpland and Kunth at Paris.

Said by Mr. Hemsley (Bot. Biol. Am. Centr., i, 5) to occur also in the United States, but I have seen no specimens from north of the Rio Grande.

25. *Anemone Hemsleyi*, n. sp.

Erect, 25-60 cm. high, the petioles and peduncles densely pubescent. Radical leaves petioled, 3-parted into ovate slightly stalked, acuminate, sharply and irregularly serrate segments; leaves of the involucre 2, short-petioled, very broadly ovate, obtuse or truncate at the base, 3-cleft to beyond the middle, the divisions acute or acuminate, sharply serrate and sometimes slightly incised; involucre 3-6-flowered, the first peduncle naked, the others bracted at the base, as in *A. Mexicana*; flowers white (according to Linden), 3-4 cm. broad; sepals 5 in the specimens seen, broadly oval, obtuse; head of fruit oblong; receptacle densely pubescent; achenia oblong, glabrous, 5 mm. long, tipped with a short style.

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Distrib. Mexico: near Vera Cruz (Linden, 964); Orizaba (Botteri, 21).

Type in the Kew Herbarium.

† † † Plants umbellately 1-several-flowered, the peduncles all naked and flowering simultaneously.

o Species of arctic and mountainous regions of the northern hemisphere.

26. ***Anemone narcissiflora*, L.**

A. narcissiflora, L. Sp. Pl., 542 (1753).

A. fasciculata, L. Sp. Pl., 542 (1753).

Villous-pubescent, but sometimes sparingly so, erect, usually rather stout, 15-45 cm. high. Radical leaves petioled, palmately 3-5-parted, the divisions obovate, cuneate, deeply incised into linear-oblong, obtuse, or acute lobes; leaves of the involucre sessile, smaller, usually less divided, otherwise similar; flowers 1-6, umbellate, peduncled, white, all maturing together, 1.5-3 cm. broad; sepals 5-7, oval-obovate, obtuse; carpels several, flat, oval, glabrous, tipped with a short, curved style.

Distrib. Rocky Mts. (Hall and Harbour, 7). Colorado: (Sheldon); Long's Peak (Vasey, 7); South Park (Wolf and Rothrock, 102). Alaska (Bongard; Mertens; Menzies; Barclay; Fischer; Dall; Stejneger; Townsend; Harrington; Kellogg, 305; Muir, J. M. Macoun). Reported from Newfoundland by Reeks. Also in Europe and Asia.

Type in the Linnæan Herbarium.

∞ Species of the Andes of Ecuador.

27. ***Anemone Jamesoni*, Hook.**

A. Jamesoni, Hook., Ic. Pl., t. 670 (1844).

Rootstock horizontal. Stem erect or ascending, 15-25 cm. high, hirsute; radical leaves long-petioled, ternate, hirsute, the divisions stalked, ternate, and the segments deeply divided into oblong, cuneate, obtuse, mostly dentate lobes; peduncles 1-3, slender, not involuclate; flowers about 2 cm. broad; sepals 5, oval, obtuse, pilose-pubescent without; head of fruit globose, dense, about 1 cm. in diameter; carpels ovate, glabrous, tipped with short, subulate, hooked styles.

Distrib. Andes of Ecuador, 12,000 feet (Jameson, 86).

Type in the Kew Herbarium.

ooo Chilian species.

28. ***Anemone hepaticifolia*, Hook.**

A. hepaticifolia, Hook., *Io. Pl.*, t. 1 (1837).

Roots fibrous. Stem erect, rather stout, hirsute with spreading hairs, 30-65 cm. high; radical leaves petioled, 5-10 cm. long, hastate, 3-lobed, thick, hirsute, especially beneath, the lobes acutish, angular-dentate; petioles hirsute, about equalling the leaves; leaves of the involucre sessile, lanceolate, deeply lobed, 3-6 cm. long; flowers umbellate, 2-4 cm. broad, yellow; sepals 5, spreading, elliptic-obovate; achenia ellipsoid, gelatinous, tipped with a short, recurved style.

Distrib. Chili: (Gay; Philippi, 277; Cuming; Lechler, 556); Bay of Valdivia (Bridges, 579); Cerros de Corral, 1000 feet (Pearce).

Type in the Kew Herbarium.

EXCLUDED OR DUBIOUS SPECIES.

Anemone nudicaulis, A. Gray, *Bot. Gaz.*, xi, 17 (1886), from Lake Superior, is *Ranunculus Lapponicus*, L., according to the original specimens in Herb. Gray. It was described from fruiting specimens only.

Anemone anomala, Raf. *Fl. Lud.*, 82 (1817). "Foliis ternis, sessilibus, incis, floribus pentapetalis, petalis inequalibus," based on *Anemone*, No. 2, Robin, *Voy. Louisiane*, iii, 463, is wholly unknown. As the flowers are said by Robin to be irregular it probably belongs to some different genus.

3. **HEPATICA**, L. *Gen. Pl.*, 162 (1737).

1. ***Hepatica Hepatica* (L.).**

Anemone Hepatica, L. *Sp. Pl.*, 538 (1753).

Hepatica triloba, Chaix in Vill. *Hist. Pl. Dauph.*, i, 336 (1786).

H. triloba, var. *Americana*, D.C. *Syst.*, i, 216 (1818).

H. Americana, Ker, *Bot. Reg.*, t. 387 (1819).

A. Americana, ex Nichols., *Diot. Gard.*, i, 74.

Acaulescent, 10-15 cm. high, villous, roots fibrous. Radical leaves long-petioled, reniform, 5-6 cm. broad when mature, spreading and declined on the ground, three-lobed, and the lobes sometimes toothed or again lobed, obtuse; involucre calyx-like, of three sessile, obtuse, oblong leaves immediately under the flower; flowers purple or white, 12-25 mm. broad, on peduncles about equal-

ling the petioles; sepals oblong, obtuse, longer than the stamens; achenia several, 4 mm. long, oblong, acute, hairy.

Distrib. In woods, Nova Scotia to northern Florida, west to Iowa and Missouri.

The American plant does not appear from herbarium specimens to be different from the European, but I have not seen them growing together.

Type, a European specimen in the Linnæan Herbarium.

2. *Hepatica acuta* (Pursh).

Hepatica triloba, var. *acuta*, Pursh, Fl. Am. Sept., 391 (1814).

Hepatica acutiloba, D.C., Prodr., i, 22 (1824).

Anemone acutiloba, Lawson, Trans. Nov. Sco. Inst., iii, 30 (1870).

A. acuta, Vail, Mem. Torr. Club, ii, 42 (1890).

A. Hepatica, var. *acuta*, Hitch., Trans. St. Louis Acad. Sci., v, 482 (1891).

Acaulescent, 10–22 cm. high, villous, and closely resembling the last, differing in the lobes of the leaves and of the involucre which are acute or acutish, these characters being, however, constant.

Distrib. In woods, Quebec and throughout Ontario, south in the Alleghanies to Georgia, but rare or absent near the Atlantic coast, west to Iowa and Minnesota.

I have not seen Pursh's type. The type of *Hepatica acutiloba*, D.C., is preserved at Geneva.

The distribution of this and the preceding species has been capitally worked out by Mr. C. G. Lloyd (*Drugs and Medicines, N. A.*, i, 40, Plate VI).

4. *CAPETHIA*, Britton.

1. *Capethia integrifolia* (D.C.).

Hepatica integrifolia, D.C. Syst., i, 217 (1818).

Anemone integrifolia, H. B. K., ex D.C., loc. cit., et Wedd. Chlor. And., ii, 298, t. 83, f. A, 1, 2, 3, 4.

Hamadryas andicola, Hook., Ic. Pl., t. 137 (1837).

Perennial by a deep, thick, woody root, acaulescent, densely pilose-pubescent. Leaves all radical, numerous, petioled, rhombic ovate, or spatulate, entire, obtuse or acutish, 4–9 cm. long, 1–1½ cm. wide; scæpe naked, shorter than the leaves; flower 3–4 cm. broad, violet or white; sepals 10–15, lanceolate or linear-lanceolate, loosely pubescent; young carpels very densely pubescent; style slender, curved at the apex.

Distrib. High Andes of Peru, Bolivia, and Ecuador. Peru: (Ruiz and Pavon; Gay, 535; Lechler, 2706; Matthews, 1139;

McLean). Bolivia: (Mandon, 869). Ecuador: Andes of Quito (Jameson).

Type in Herb. Humboldt, Bonpland and Kunth at the Paris Museum.

"Cinerarea del Peru," specimen from Pavon in Herb. Mus. Brit.
"Cinerarea del Cordillera," specimen in Herb. Boiss.

2. **Capethia Weddellii**, n. sp.

Leaves ovate, abruptly contracted into the petiole; scape nearly as long as the leaves, bracted at about the middle; flower smaller; head of fruit globose, about 8 mm. in diameter; achenia obliquely ovoid, pubescent; style slender, straight, deflected, inserted below the apex.

This plant is figured by Weddell (Chlor. And., ii, t. 83, f. A, 5, 6, 7) as "*Anemone integrifolia*, β . petiolis scapisque magis elongatis, floribus parvis." I think it must be specifically distinct, but, although I examined the *Anemones* of the Paris Herbarium I took no note of it, and Weddell does not say where it was collected. It is probably Peruvian.

5. **BARNEOUDIA**, C. Gay. Fl. Chil., i, 29 (1845).

1. **Barneoudia Chilensis**, C. Gay.

Barneoudia Chilensis, C. Gay, Fl. Chil., i, 29, t. 1 (1845).

Glabrous or nearly so, 6-12 cm. high. Scape 1-flowered; involucre approximate to the flower, deeply divided into 5-7, obtuse, entire, lobed or bifid segments; sepals about 8, obovate; ovaries densely villous-pubescent; style filiform, curved.

Distrib. Chili.

Type in the Paris Herbarium.

2. **Barneoudia major**, Phil.

Barneoudia major, Phil., Linnæa, xxviii, 609 (1856).

Larger than the preceding species, villous-pubescent above. Involucre pubescent on the upper surface, 5-6-lobed, the lobes 3-5-cleft; sepals about 12, linear-lanceolate, obtuse.

Distrib. Chili.

Type in the Paris Herbarium.

3. *Barneoudia Domeykoana*, Leybold.

Barneoudia Domeykoana, Leybold, Ann. Univ., 1858, 159, et Flora, xiii, 242 (1859).

"Rhizomate tuberoso; scape glabro; foliis longe petiolatis, glabris, tripartitis lobis obtusato spathulatis, integris vel obtuse 1-3-dentatis; involuoro 5-6 lobato, flore densissimo approximato, externe glaberrimo, interne basin versus sericeo-tomentoso; lobulis lanceolato-obovatis obtusis integerrimis vel subrepandis; sepalis petaloidis, lineari-obovatis, obtusis; filamentis linearibus; capsula plurimans cylindrica, e basi longe-sericeis, apice stylo persistente filiformi arcuato coronata."

Distrib. Chili. In grassy places on the higher Cordillera, blooming at the melting of snow in the latter part of November. Discovered on the Cerro Colorado, in the valley of Mapocho, at an altitude of about 10,000 feet.

Not seen by me.

4. *Barneoudia Balliana*, n. sp.

15-20 cm. high, fleshy, the involuoral leaf 3-7-lobed, very thick, 6-7 cm. wide, the lobes rounded or obtuse, obovate, densely and finely appressed-pubescent on the upper surface. "*B. major*, Phil., differs in having the fruit covered with silky hairs."

The specimen on which this species is based is in the Kew Herbarium, derived from the herbarium of the late John Ball. No flowers nor fruit remain upon it, but from the note by Mr. Ball, above quoted, he appears to have seen the fruit. The plant has a decidedly different aspect from *B. major*. It is labelled *Anemone crassifolia*, Hieron., but I cannot find that it has been published. At all events there is already an *Anemone crassifolia*, Hook., from Tasmania (Ic. Pl., t. 257).

Distrib. Argentine Republic: Sierra Famentina, Prov. de la Rioja (Hieronymus).

6. **SYNDESMON**, Hoffmg., *Flora*, xv, Part II. *Intell. Bl.* No. 4, 34 (1832).

1. **Syndesmon thalictroides** (L.).

Anemone thalictroides, L. *Sp. Pl.*, 542 (1753).

Thalictrum anemonoides, Michx., *Fl. Bor.-Am.*, i, 332 (1803).

Syndesmon thalictroides, Hoffmansg., *Flora*, xv, Part II. *Intell. Bl.*, No. iv, 34, 1832.

Thalictrum Carolinianum, Walt., *Fl. Car.*, 137 (1788)?

Anemone thalictroides, var. *uniflora*, Pursh, *Fl. Am. Sept.*, 387 (1814).

Anemone Walteri, Pursh, *Fl. Am. Sept.*, 387 (1814)?

Anemonella thalictroides, Spach, *Hist. Veg.*, vii, 240 (1839).

Low, glabrous, 10-25 cm. high, the flowering stem arising in early spring from a cluster of fleshy tubers, the ternately-compound radical leaves appearing later, and resembling those of *Thalictrum*; leaves of the involucre similar, sessile, the leaflets long-petioled; sepals 5-10, white, longer than the stamens, forming a flower 12-25 mm. broad; flowers perfect, umbellate, immediately above the involucre; stigmas depressed truncate, sessile; achenia terete, sessile, pointed, 8-12 mm. long, ribbed and grooved.

Distrib. In woods throughout the eastern United States, south to Florida, west to Kansas, Minnesota, and Mississippi, sparingly in Ontario. Not reported from the maritime provinces of Canada.

In suggesting the generic name *Syndesmon*, it is said by Reichenbach, the writer of the note in *Flora*: "Diese Gattung hat Hoffmg. gebildet um sowohl *Anemone* wie *Thalictrum* formen zu reinigen die nicht in selbigen aber sehr wohl zusammen passen."

Pursh's *Anemone Walteri* is based entirely on Walter's *Thalictrum Carolinianum*, which he never saw, and no specimen of it is contained in Walter's Herbarium. From the descriptions it may be this species.

Alluding to Plukenet's figure (t. 106, f. 4), Jussieu says (*Ann. Mus. Hist. Nat.*, iii, 250 (1804)): "Cette plante désignée par lui sous nom de *Ranunculus*, par Gronovius sous celui de *Thalictrum*, réunie ensuite à l'*Anemone* par Linnæus conservée dans ce genre par tous les autres botanistes, a été de nouveau reportée au *Thalictrum* par Michaux, sous les nom de *T. anemonoides*, fl. Amer., i, p. 322. Il aura pu être déterminé à ce changement par les involucre conformés différemment, et sur-tout par les graines allongées et striées comme celles du *Thalictrum*; mais si d'après les rapports naturels on refuse un involucre au *Thalictrum* et si on l'assigne comme caractère principal de l'*Anemone*; si de plus on suit strictement l'indication de Linnæus que conserve dans ce dernier genre la

plante qui a plus de cinq pétales, alors on sera doublement forcé de n'en point séparer celle qui fait l'objet de cette discussion et qui servira seulement à établir une transition de l'un à l'autre genre."

Sims gives a very good figure of it in *Bot. Mag.*, t. 866 (1805), and remarks: "A dubious species, but certainly agreeing in more points with *Anemone* than with *Thalictrum*."

Type of *Anemone thalictroides*, L., in *Herb. Linn.*; type of *Thalictrum anemonoides*, Michx., in *Herb. Michaux.*