

moist weather or when kept in a damp chamber the conidiophores become indefinitely elongated and irregularly branched; but the single dichotomous form is characteristic of the species. Towards their extremities the conidiophores are furnished with the successive vesicular swellings, marking the point of proliferation from the insertion of previously formed conidia, which are characteristic of the genus.

In its large size the species approaches the European *P. Cactorum*; but, although I have not been able to examine specimens of this species, it seems to differ essentially from the one under consideration, both in its larger size and mode of branching. Prof. Farlow informs me that a specimen distributed in the Mycotheca Marchica on Brassica, and labelled "*P. omnivora*" (a form which, together with *P. Fagi* and *P. Sempervivi*, has been shown by de Bary¹ to belong to a single species, *P. Cactorum*) approaches the present species in its luxuriant habit; but on examination proves to be merely *Peronospora parasitica*.

***Phytophthora Phaseoli* nov. sp.**

Mycelial hyphæ branched, rarely penetrating the cells of the host by irregular haustoria. Conidiophores slightly swollen at their point of exit through the stomata, arising singly or one to several in a cluster; simple or once dichotomously branched, and once to several times successively inflated below their apices. Conidia oval or elliptical, with truncate base and papillate apex; $35-50\mu \times 20-24\mu$. Germination by zoospores, usually fifteen in number, or rarely by a simple hypha of germination. Oospores unknown.

On pods, stems and leaves of the Lima bean (*Phaseolus lunatus*), New Haven, Connecticut, September and October.
New Haven, Conn.

Notes on North American Umbelliferae. I.

JOHN M. COULTER AND J. N. ROSE.

The series of papers bearing the above title are intended to be supplementary to our *Revision of North American Umbelliferae*.

CAUCALIS MICROCARPA H. & A. has been sent by C. R. Orcutt from Lower California.

¹Bot. Zeit. 1881, pp. 251-265.

CUMINUM CYMINUM L., the common "cumin" of Mediterranean countries, was found by Charles Wright, in 1852, in cultivation at El Paso, Texas. In May, 1881, Mr. J. G. Lemmon found it growing spontaneously along the banks of the Rio Grande on the island of Isleta (opposite El Paso). It is a small, slender annual 3 to 10 in. high, with long filiform leaflets and similar involucre and involucels, awl-shaped sepals, rose-colored petals, fruit with long hairs and bristles, and oil-tubes solitary under the secondary ribs. The genus is near *Trepocarpus*.

ANGELICA ARGUTA Nutt. was found in the "Coast Mountains" of Oregon, July, 1888 (*Howell* 779), and on Mt. Rainier, Washington Territory, August, 1889, at an elevation of 6,000 feet (*Piper & Smith* 630).

SELINUM HOOKERI Watson is sent in fine condition from near Seattle, Washington Territory, collected September, 1888 (*C. V. Piper* 631). Mr. Piper writes that it grows "just above high tide mark on the seashore." The plant attains 4 feet in height; the lower leaves are often very large, and 3 to 4-pinnate; the rays become over $1\frac{1}{2}$ inch long; and the fruit is sometimes 3 or 4 lines long.

TIEDEMANNIA FENDLERI C. & R. Prof. E. L. Greene has sent some robust specimens collected along Bear Creek, Colorado, July 2, 1889, which have some of the leaves 11-foliolate, and the leaflets incisely dentate rather than "incisely serrate."

LEPTOTÆNIA ANOMALA C. & R. was collected during the past season by T. S. Brandege, at Carbondale, California. The type specimens of this very distinct species showed fruit only and the leaves were very imperfect. The specimens of Mr. Brandege supplement our information and enable us to complete the description. The leaves are first ternate, then pinnate into distant narrowly linear segments, and the flowers are yellow. The plant blooms in April and perfects fruit in June.

PEUCEDANUM GRAVEOLENS Benth. & Hook., the cultivated "anise" or "dill," is sent by Dr. H. E. Hasse from Los Angeles, California, where he says it is "escaped and apparently established." It is *Anethum graveolens* L., having fennel-like leaves, but the fruit of a *Peucedanum*.

PEUCEDANUM VILLOSUM Nutt. has been observed by Dr. V. Havard growing in abundance near Fort Buford, Dakota.

PEUCEDANUM AUSTINÆ C. & R. has been collected by J. G. Lemmon in Plumas county, California (no. 23). The

species seems to be well marked in fruit by the small oil-tube contained in each of the dorsal and intermediate ribs, but Mr. Lemmon's specimens show a minutely pubescent foliage. The reference to Mr. E. L. Greene's plant (Rev. Umbell. 66) should be changed so as to read Siskiyou county, 1876 (no. 732).

PEUCEDANUM MARTINDALEI C. & R., var. **ANGUSTATUM** C. & R., has been sent from near Ellensburg, Washington, by G. R. Vasey, August, 1889. His specimens show that the inflorescence may be somewhat puberulent as well as glabrous.

PEUCEDANUM CANBYI C. & R. has been collected by Dr. V. Havard in the Spokane River region of Washington.

✓ **Peucedanum Hassei.** Tall caulescent, stout, 2 feet or more high, glabrous and somewhat glaucous, from a long slender woody root: leaves biternate, on very long petioles (sometimes as much as 10 in. including petiole); leaflets broadly ovate with wedge-shaped base, irregularly lobed, coarsely mucronate-toothed, 1 to 4 in. long, reaching $2\frac{1}{2}$ in. in breadth: umbel long-peduncled, equally 8 to 18-rayed, with involucels of bractlets which vary from rather short linear-setaceous to oblanceolate, foliaceous, entire or toothed and much exceeding the rays; rays 2 to 4 in. long; pedicels 6 to 8 lines long: flowers yellow: fruit glabrous, with broad wings: oil-tubes solitary in the intervals.

Los Angeles county, California, March 27, 1888 (*Dr. H. E. Hasse*). Distributed as *Ferula Californica*.

This is an interesting addition to the *Euryptera* section on account of its tall caulescent habit, and in this respect the section character should be modified. In its general habit it bears some resemblance to *Leptotænia Californica*, but can be distinguished from that species even by its leaflet characters, while the fruit is evidently that of *Peucedanum*.

✓ **Peucedanum Torreyi.** Short caulescent, 3 to 12 in. high, glabrous, slender, clothed at base with old leaf-sheaths: leaves small, ternate-pinnate or bipinnate, with very short (1 to 3 lines) linear acute-tipped segments: umbel unequally few-rayed, with involucels of 1 or 2 small bractlets or none; rays an inch long or less; pedicels a line or two long: flowers yellow; calyx-teeth small or obsolete: fruit narrowly oblong, 4 to 6 lines long, with wings not half as broad as body: oil-tubes solitary in the intervals.—Described without name in Bot. Calif. i. 263, as a plant closely allied to *Podoscium*.

Yosemite Valley, California (*Torrey & Gray; M. K. Curran* 16, June, 1883).

This very distinct little *Peucedanum* was first collected by Drs. Torrey & Gray in immature condition. In 1883 it was rediscovered by Mrs. M. K. Curran in so much better condition that its generic relationship is evident. It is most nearly related to *P. Oreganum* and *P. Parryi* in habit and structure, but is very distinct in fruit characters, having narrower and longer fruit, unusually narrow wings, and solitary oil-tubes.

✓ ***Peucedanum evittatum*.** Acaulescent, 8 to 18 in. high, from a deep-seated small tuber, glabrous: leaves once or twice ternate then more or less pinnate into linear callous-tipped segments ($\frac{1}{2}$ to 2 in. long): umbel somewhat unequally 8 to 18-rayed, with no involucre, and involucels of numerous purplish lanceolate acuminate gamophyllous bractlets; rays 1 to 2 in. long; pedicels short (1 to $1\frac{1}{2}$ lines): flowers white: fruit oblong, glabrous, 4 to 5 lines long, $2\frac{1}{2}$ lines broad, with very thin membranous wings more than half as broad as body, and no oil-tubes.

Ellensburg, Spokane county, Washington, May, 1889 (*G. R. Vasey*).

In the absence of oil-tubes this species is entirely different from all our known species of *Peucedanum* excepting *P. bicolor*; and it notably differs from that species in its broad thin fruit-wings and prominent gamophyllous involucels. It would properly come in the tuberous-rooted section of our *Revision*, probably nearest to *P. Canbyi*, but it contradicts the section characters, as there drawn up, in its broad fruit-wings and absence of oil tubes. Its affinities seem also to be very close with *P. bicolor*, which species it most resembles in habit.

✓ ***Peucedanum Lemmoni*.** Caulescent, with most of the leaves near the base, 12 to 15 in. high, clothed at base with old leaf-sheaths, from an elongated rather slender root, glabrous: leaves broad triangular in outline (5 to 8 in. long including petiole), twice or thrice pinnate (or so broad as to appear at first ternate), the ultimate segments linear (1 to 2 in. long); uppermost leaves much smaller and simply pinnate: umbel 6 to 8-rayed, with no involucre, and involucels of a few almost filiform bractlets; rays short (3 to 7 lines long), making the fruits appear in a head-like cluster; pedicels a line long: flowers white (?): fruit oblong, glabrous, $2\frac{1}{2}$ lines long, scarcely 2 lines broad, with thickish wings about half as

broad as body, and distinct dorsal and intermediate ribs: oil-tubes solitary in the dorsal intervals, 2 or 3 in the lateral, 4 to 6 on the commissural side: seed-face plane.

Huachuca Mountains, S. E. Arizona, June, 1887 (*Lemmon* 392).

The appearance of the leaves of this species is quite unusual for *Peucedanum*, but its affinities with that genus are clear. The specific relationship is not so clear. Mr. Lemmon writes that the plant seems very rare.

✓ ***Peucedanum Plummeræ***. Short caulescent with a cluster of stout widely spreading peduncles (8 to 12 in. high) rising much above the leaves and from a thick tuberous root, glabrous and somewhat glaucous: leaves ternately decom-pound, the numerous crowded ultimate segments very small, oblong, more or less confluent: umbel very unequally 6 to 12-rayed, with no involucre, and involucels of numerous lanceolate acuminate bractlets; rays $\frac{1}{2}$ to 3 in. long; pedicels 2 to 4 lines long: flowers white: fruit oblong but usually acute at apex, glabrous, 4 to $4\frac{1}{2}$ lines long, 2 to $2\frac{1}{2}$ lines broad, with wings from half as broad as body to fully as broad, and indistinct dorsal and intermediate ribs: oil-tubes 2 to 3 in the intervals, 4 to 6 on the commissural side.

California, Sierra Valley, Sierra county, May, 1889, and near Shasta, Shasta county, June 28, 1889 (at both stations by *Mr. & Mrs. J. G. Lemmon*, 32 and 40).

This species seems most closely related to *P. Nevadense*.

LIGUSTICUM SCOPULORUM Gray. The range of this species must be extended so as to include Sierra county, California (*Lemmon* 19), and the coast mountains of Oregon (*Howell* 708).

LIGUSTICUM PORTERI C. & R. was collected in S. Utah in 1877 by Dr. E. Palmer (no. 176).

LIGUSTICUM APIIFOLIUM Benth & Hook. has been collected in Pierce county, Oregon (*C. V. Piper* 644).

LIGUSTICUM GRAYI C. & R. was collected, August 20, 1889, by Prof. E. L. Greene, on "open ground, near timber-line, Mt. Rainier, Washington; and by Prof. John Macoun, August 5, 1889 (in flower), on "mountains north of Griffin Lake, B. C., at 6500 ft. altitude. Specimens collected on Mt. Rainier, Washington, altitude 5,000 feet (*Piper & Smith* 629) show smaller fruit than recorded before, some being but $1\frac{1}{2}$ lines long; but they occur along with many of recorded size.

LIGUSTICUM FILICINUM Watson was collected in great abundance near Lake City, Colorado, by E. J. Ebert, in 1888,

and in the mountains back of Denver by John Kochan in July, 1889. This is the "Osha" of the Indians, who use its very large aromatic roots. It was referred to *L. apiifolium* by Rothrock in report of Wheeler's Expedition, who collected it about Twin Lakes, Colorado.

CÆLOPLEURUM GMELINI Ledeb. In our Revision of N. Am. Umbelliferae (p. 90) we ventured the opinion that this species would be found along the coast of Washington Territory, and now Mr. C. V. Piper sends abundant material from near Seattle, where it grows just above high tide mark or in salt marshes on the sea-shore. The specimens are very stout, becoming 3 or 4 feet high, and the leaves are very large, the leaflets tapering at both extremities and conspicuously reticulate-veined, 2 to 4 inches long and 1 to 2 inches broad. The rays are also sometimes nearly $3\frac{1}{2}$ inches long and the pedicels 4 to 8 lines. The fruit is more narrowly oblong than usual, averaging about $1\frac{1}{2}$ lines in breadth by $3\frac{1}{2}$ lines long. The seed soon becomes very loose in the pericarp and has a distinct lunate outline in section. The "hollow ribs" of Ledebour's description appear very prominently, and undoubtedly these specimens from Puget Sound represent more nearly those of Ledebour than any others we have seen.

CENANTHE SARMENTOSA Presl., as is to be inferred from the name, has a decidedly sarmentose habit. Our attention has been called to it by S. B. Parish in S. California, and by L. F. Henderson and E. L. Greene in Washington. Professor Greene describes it as follows: "The stems, though slender, are erect, but after flowering there go forth from among the umbels and upper axils long slender sterile branches which strike root at the joints or tip."

CYNOSCIADIUM PINNATUM DC. Mr. F. W. Thurow has sent from Texas a large coarse form of this species 2 feet high. He has also collected this year the var. *pumilum*.

Eryngium Lemmoni. Glaucous: stem erect, branching above, 1 or 2 feet high: leaves rigid, from long oblanceolate below to broad ovate above, all sharply dentate or pinnatifid-toothed (but not pectinate), the uppermost leaves most deeply cut, teeth cuspidate-tipped: heads short-oblong (4 to 6 lines high), much surpassed and enveloped by the conspicuous involucre of broadly cuneate (becoming 4 or 5 lines broad) leaf-like cuspidate-toothed and -lobed bracts; bractlets scarcely exceeding the flowers and rather weak, the

terminal ones not at all prominent: fruit with short ovate cuspidate-tipped calyx-lobes, and long slender styles.

Chiricahua Mountains, S. E. Arizona, September, 1881 (*J. G. Lemmon* 17).

This species is most nearly allied to *E. Wrightii* Gray, but the leaves are broader and much less finely cut, and the very conspicuous involucre bracts are unlike those of any other North American *Eryngium*.

SANICULA NEVADENSIS Watson is sent by S. B. Parish from the San Bernardino Mountains, California, thus extending the recorded range southward. It is his no. 2085, and is said to grow on "dry ridges, 4000 ft. altitude."

SANICULA LACINIATA H. & A., was collected on Mt. Tamalpais, California, March 30, 1889, by Prof. E. L. Greene.

SANICULA MENZIESII H. & A. has been found by C. R. Orcutt in N. Lower California, where it blooms as early as March.

SANICULA BIPINNATA H. & A. was collected by Mr. Thos. Howell (no. 799), April 1889, in N. California and S. Oregon, thus extending the known range of this species considerably northward. Mr. Howell's plants are lower and more bushy-branching from the base than heretofore noted. They range from $3\frac{1}{2}$ to 8 in. high above ground.

SANICULA BIPINNATIFIDA Dougl. should be credited with larger fruit than given in our *Rev. Umbell.* (p. 106). Numerous specimens show fruit reaching 2 lines in length.

FÆNICULUM VULGARE Gært., the "cultivated fennel," seems to be common in California. It is reported by Prof. E. L. Greene as abundant, and is also sent by Dr. H. E. Hasse from Los Angeles, where he reports it as "escaped and apparently established."

APIASTRUM ANGUSTIFOLIUM Nutt. has been collected in San Diego county, California (*Orcutt*), Lower California, flowering in February (*Palmer* 643), and on Cedros Island (*Palmer* 679), all in 1889. It is the only known umbellifer on Cedros Island, where it grows "under bushes in cañons."

MUSENIUM DIVARICATUM Nutt. has been sent in fine condition by Dr. V. Havard from Fort Buford, Dakota, where it occurs in great abundance. We find that the seed-face may be plane as well as somewhat concave.

MUSENIUM TENUIFOLIUM Nutt. has at last been rediscovered in fruit. In our Revision (p. 111) we stated that the fruit had been lost from the type specimens and questioned the generic relationship. Fine fruiting material has been

sent by Mr. H. J. Webber, of the Nebraska State University, who collected it in the northwestern part of Nebraska, where he says it is very common. Dr. Bessey found it at Belmont, Dawes county, early in July, and later it was collected in the same locality by Mr. Webber, who also found it quite common on high ridges in Sioux county, on Hat Creek Basin divide. Its relation to *Musenium* is undoubted, and Nuttall's opinion amply confirmed.

EULOPHUS BOLANDERI C. & R. is sent from Sierra county, California, by Mr. J. G. Lemmon (no. 47).

EULOPHUS PRINGLEI C. & R. was found by Mrs. R. W. Summer, at "Chalcedon Hill," San Luis Obispo, California, during the last season, "in stony open ground."

EULOPHUS PARISHII C. & R. (Rev. Umbell. 112). Abundant material of this species from C. R. Orcutt enables us to recast certain parts of the description, especially with reference to the very variable leaves: Plant becomes as much as 3 feet high: leaves ternate (rarely biternate), on petioles 2 to 5 inches long (the whole leaf, including the petiole, sometimes reaching a foot in length), with narrowly linear (almost filiform) to narrowly lanceolate leaflets (1 to 3 in. long, $\frac{1}{2}$ to 5 lines wide), terminal leaflet often distant; uppermost leaves simple and bract-like: fruit 1 to 2 lines long, $\frac{1}{2}$ to 1 line broad.

Cuyamaca Mountains, San Diego county, California, July 1889 (*Orcutt*), and also probably *Palmer*, in 1875, from the same county.

The range of this species is thus extended to the southern limit of California. Mr. S. B. Parish writes that he is "satisfied that all he took for *Carum Gardineri* in the San Jacinto and San Bernardino Mountains is *E. Parishii*," and pertinently raises the question whether *Carum Gairdneri* really grows in S. California. Our range for that species given in *Rev. Umbell.*, is a general one, and we have yet to see genuine *C. Gairdneri* from S. California.

✓*Var. Rusbyi*. Leaflets filiform to linear, becoming as much as 6 in. long; fruit larger, about 2 lines long, $1\frac{1}{2}$ lines broad.

Arizona, Bill Williams Mountain, July 11, 1883 (*Rusby* 629), Flagstaff (*Lemmon*).

SCANDIX PECTEN L. is reported by Professor E. L. Greene (*Pittonia* i. 270) as naturalized in Napa Valley, California (*C. F. Sonne*). It is a low branching annual, with pinnately decomposed leaves, few-rayed umbels, and a remarkably

long-beaked fruit. In fruits becoming sometimes 2 in. long, more than three-fourths of this length is occupied by the stiff flattened beak. This is the "shepherd's needle" or "Venus-comb" of Europe and W. Asia, a common weed of the fields.

CHÆROPHYLLUM ANTHRISCUS Lam., a common weed of Europe, known as "burr chervil," has been found by J. G. Lemmon growing in the streets of Alameda, California. Prof. E. L. Greene sends the same plant, having been collected at the same station by Dr. Gibbons, May, 1889. It is *Anthriscus vulgaris* Pers.

OSMORHIZA BRACHYPODA Torr. is sent by C. R. Orcutt from near Julian, San Diego county, California, collected in May, 1889, thus extending its recorded range southward. He writes that it is called "ginsheng," and is of considerable medical value.

✓ VELÆA ARGUTA C. & R., var. **ternata**. More robust and taller (2 to 2½ feet high): leaflets larger (2 to 3 in. long) and broader, irregularly and sharply toothed, becoming more or less 3-lobed; the lowest pair with long petiolules (inch or more), giving a ternate appearance to the leaf: umbel 14 to 18-rayed.

Cuyamaca Mountains, San Diego county, California, July, 1889 (*Orcutt*): probably also *Palmer* 110a, a very immature specimen collected in 1875 in the same locality. Mr. Orcutt's specimens bring us for the first time good fruit of this species.

SIUM CICUTÆFOLIUM Gmelin, was collected in marshes of Lake Pend d'Oreille, Idaho, August 9, 1889, by Prof. E. L. Greene. The specimens show very dissected submersed leaves.

CARUM L.—Professor E. L. Greene (*Pittonia* i. 272) has adopted the views of Hooker & Arnott in separating our Pacific species from the Old World genus under the name *Atænia*. If such a separation is possible of course this generic name is inevitable. Aside from the fact that such a separation must involve a study of the numerous Old World species, we can not discover that the autumnal habit of blooming and fruiting can be made to hold in all our species, for our collections show dates of good specimens beginning with May and ending in October. Specimens of *C. Kelloggii* just received from Prof. Greene, collected in March, show abundant and vigorous leaves, while others collected in August have flowers and fruit and mere remnants of leaves. This apparently common habit of *C. Kelloggii* is a point well taken, but until

it is proved constant for that species, and a character in common with the other species, and also supported by other characters, we can not consider it a sufficient reason for separating genera.

CARUM KELLOGGII Gray. The recorded range of this supposed rare species has been increased by its discovery in abundance in Tuolumne county, California, August, 1889 (*Lemmon* 72-74), thus extending it throughout the central part of the state, where it is known as "wild anise." Professor E. L. Greene thinks its scarcity in herbaria is due more to its late blooming and fruiting than to its actual rarity. We also have it from Mr. Lemmon from the "Oakland Hills." Some of the Tuolumne specimens showed plants 5 feet high.

CARUM OREGANUM Watson was also collected in good fruit by Mr. Lemmon in Siskiyou county, California, June, 1889.

CARUM GAIRDNERI Benth. & Hook. we have not yet seen from S. California, and would ask collectors to note whether the specimens reported from that region are not really *Eulophus Parishii*.

✓ **Carum Lemmoni.** Resembling *C. Oreganum* except in the fruit, which is oblong, $1\frac{1}{2}$ lines long and a line wide, with prominent calyx-teeth concealing the small stylopodium, and broad low ribs each containing a small group of strengthening cells.

"Tuolumne forest," California, August 1889, (*Lemmon* 79).

The small stylopodium and the presence of strengthening cells are characters unknown among our other species of *Carum*. In dried specimens the fruit ribs look sharp and prominent, but this is explained by the collapsed condition of the large intervening oil-tubes. After soaking, the oil-tubes become plump, and the ribs are then seen to be broad and low.

TÆNIOPLEURUM, nov. gen. Calyx-teeth prominent. Fruit oblong, glabrous, flattened laterally. Carpel with broad salient ribs, each tipped with a large group of strengthening cells. Stylopodium prominent and conical. Oil-tubes solitary in the intervals, very large, 2 on the commissural side, and a small accessory one beneath each group of strengthening cells. Seed dorsally flattened, sulcate beneath the oil-tubes, becoming loose in the pericarp and invested by a layer of secreting cells, the face plane or somewhat concave.—Smooth, erect herbs, from a fascicle of thickened fibres, with

ternate-pinnate leaves, toothed (unusually broad) leaflets, involucre and involucels of numerous and conspicuous bracts, and white flowers.

✓ **T. Howellii.** Stem rather stout, 3 to $3\frac{1}{2}$ feet high; leaves few, ternate then once or twice pinnate; leaflets lanceolate to ovate, strongly toothed or lobed; umbels many-rayed, with involucre of long narrowly oblanceolate bracts (becoming reflexed), and involucels of prominent lanceolate scarious-margined bractlets; rays $1\frac{1}{2}$ to $2\frac{1}{2}$ in. long; pedicels 3 to 5 lines long; fruit $1\frac{1}{2}$ to 2 lines long.—*Carum Howellii* C. & R. Rev. Umbell. 129. *Atænia Howellii* Greene, Pittonia i. 274.

Wet places, Grant's Pass, Oregon, July, 1887, in flower; also 1888, in mature fruit (*Howell* 710).

An abundance of fine fruiting material collected by Mr. Howell has enabled us to determine the affinities of this heretofore puzzling species. In our Revision of N. Am. Umbelliferae we hesitated to include this species under *Carum* on account of its unusual leaves and bracts, but in the absence of fruit we left the matter in doubt. Now that mature fruit has been discovered, characters are found which plainly separate it generically from *Carum*. The prominent ribs, containing large groups of strengthening cells and accessory oil-tubes, are among the most noticeable features, while the investment of the seed with an oil-secreting layer in which are frequently developed small oil-tubes, and its becoming loose in the pericarp, are perhaps no less so. When to such characters as these there are added the broad toothed leaflets and very prominent bracts of both involucre and involucels, an unusually strong combination of characters is made upon which to establish a genus. The name refers to the fact of oil-tubes being found in the ribs.

CICUTA BULBIFERA L. has at last been collected with mature fruit. It comes from Mr. O. A. Farwell, Keweenaw county, Michigan. The fruit is quite small, a line long by half a line broad, and is broadly ribbed.

BERULA ANGUSTIFOLIA Koch is sent by Prof. John Macoun, have been collected at several stations in British Columbia.

Crawfordsville, Ind.



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