

Notes on Umbelliferæ of E. United States. VII.

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(WITH PLATE XV.)

TREPOCARPUS Nutt.—Fruit linear-oblong, flattened laterally: carpel somewhat dorsally flattened, with the 5 primary ribs filiform or obsolete, the 4 secondary ones prominent: oil-ducts solitary under secondary ribs, two on commissural side: stylopodium conical, with very short style (figs. 87, 88).—Glabrous annuals, with thin pinnately decomposed leaves and linear segments, lateral few-rayed umbels opposite the leaves, white flowers, and prominent calyx-teeth.

1. **T. Æthusæ** Nutt. DC. Mem. Umbel. 56, t. 14. From a few inches to three feet high: umbels 2 to 5-rayed; umbellets few-flowered: involucre and involucels of few linear bracts, entire or divided: fruit 4 to 5 lines long; pericarp wall thick and mostly made up of strengthening cells: secondary ribs corky.—From Arkansas to Louisiana, Indian Territory and Texas. Fl. July.

SIUM Linn.—Fruit ovate to oblong, flattened laterally: carpel with 5 corky primary ribs (each with a well-developed group of strengthening cells at tip): oil-ducts 1 to 3 in the intervals (never solitary in all the intervals), 2 to 6 on commissural side, near center of pericarp: seed-section roundish or sub-angular: stylopodium depressed or wanting, with short style (figs. 89-92).—Smooth perennials growing in water or wet places, with pinnate leaves and serrate or pinnatifid leaflets, involucre and involucels of several bracts, and white flowers, in summer.

Bentham and Hooker refer our two species of *Sium* to *Apium*, but to us they seem abundantly distinct, as also indicated by Watson, Bot. Calif. i. 261. The oil-ducts are never solitary in all the intervals, and the prominent group of strengthening cells in the outer edge of each rib still further emphasizes the distinction. There is no better defined generic group in Umbelliferæ than that formed by our

two species of *Sium*, being so nearly identical in fruit and so easily separated from all other genera.

1. *S. cicutæfolium* Gmelin, Syst. 2. 482. Stout, 2 to 6 feet high: leaflets 3 to 8 pairs, linear to lanceolate, sharply serrate and acuminate, 2 to 5 inches long: fruit larger in section and with more prominent ribs than in the next; oil-ducts 2 to 6 on commissural side (figs. 89, 90). *S. lineare* Michx. *Apium lineare* Benth. & Hook.—Throughout our range, and west to the Pacific.

2. *S. Carsoni* Durand, Gray's Man. 196. Weak, 1 to 2 feet high: leaflets 1 to 3 pairs, linear, sharply serrate, 1 to 2 inches long; when submersed or floating, very thin, ovate to oblong, usually laciniate-toothed or dissected, the leaf sometimes reduced to the terminal leaflet: oil-ducts 2 to 4 on commissural side (figs. 91, 92). *Apium Carsoni* Benth. & Hook.—Pennsylvania, Connecticut, Rhode Island, and Massachusetts.

BERULA Koch.—Fruit nearly globose, somewhat flattened laterally, emarginate at base: carpel with 5 filiform primary ribs: pericarp thick and corky, with no strengthening cells: oil-ducts numerous and contiguous, closely surrounding the seed cavity: seed-section round: stylopodium conical (figs. 93, 94).—Smooth aquatic perennial, with pinnate leaves and variously cut leaflets, and white flowers, in summer.

1. *B. angustifolia* Koch, Deutsch. Fl. 2. 455. Stout, $\frac{1}{2}$ to 3 feet high: leaflets 5 to 8 pairs, linear to oblong or ovate, serrate to cut-toothed, sometimes crenate: fruit $\frac{3}{4}$ line long. *Sium angustifolium* L.—Throughout our range and westward.

CRANTZIA Nutt.—Fruit globose, slightly flattened laterally: carpel with 5 primary ribs, each subtended by a small group of strengthening cells; the laterals thick and corky; the others filiform: oil-ducts solitary in the intervals, two on the commissural side: seed-section round (figs. 95, 96).—Small perennials, creeping and rooting in the mud, with hollow cylindrical or awl-shaped nodose petioles in place of leaves, simple few-flowered umbels, and white flowers. July.

1. *C. lineata* Nutt. Genera, 1. 178. Leaves very obtuse, 1 to 3 inches long, 1 to 2 lines broad: fruit a line long, the thick lateral wings forming a corky margin.—In brackish marshes along the coast, from Massachusetts to Mississippi.

CICUTA Linn.—Fruit ovoid to oblong, slightly flattened laterally: carpel with 5 strong flattish corky primary ribs (laterals somewhat larger): oil-ducts solitary in the intervals, two on the commissural side: stylopodium conical or depressed (figs. 97–100).—Smooth poisonous marsh perennials, with pinnately or ternately compound leaves, and white flowers, in summer.

Bentham and Hooker, in *Gen. Plant.* i. 889, say “stylopodia crassiuscula, depressa, integra;” and Sereno Watson, in *Bot. Calif.* 1.260, says “stylopodium depressed.” While this is apparently true in most specimens of mature fruit, in many younger specimens, and some mature ones, the stylopodium will be found to be conical. In any event it is large and prominent, and may or may not become conical. When depressed, we have not found it entire.

1. **C. maculata** L. Spec. 256. Stout, 2 to 6 feet high, stem streaked with purple: leaflets oblong-lanceolate (narrower above), coarsely serrate: fruit oval, 2 lines long, with no strengthening cells and large oil-ducts; seed-section roundish (figs. 97, 98).—Throughout our range and westward.

2. **C. bulbifera** L. Spec. 255. More slender, 1 to 3 feet high: leaflets linear, sparsely toothed; upper axils bearing clustered bulblets: fruit (seldom matured) oblong, 2 lines long, with groups of strengthening cells beneath the ribs and smaller oil-ducts; seed-section somewhat dorsally flattened.—Common northward.

CYNOSCIADIUM DC.—Fruit ovoid, not flattened either way: carpel with 5 strong primary ribs, lateral ones much the larger, forming a broad corky margin, a large group of strengthening cells in each rib: oil-ducts solitary in the intervals, two on the commissural side: seed-section somewhat flattened dorsally: stylopodium conical (figs. 101–104).—Glabrous annuals, with pinnately divided cauline leaves (leaflets linear), mostly undivided lower and radical leaves, white flowers, and persistent calyx-teeth.

1. **C. digitatum** DC. Mem. Umbel. 44 t. 11. Slender, 1 to 2 feet high: radical leaves linear-lanceolate, entire; cauline leaves palmately 3 to 5-parted: fruit a line long, contracted into a neck at summit, with very prominent ribs and minute calyx-teeth (figs. 101, 102).—Wet ground, Arkansas, Alabama, Louisiana and Texas. Fl. May, June.

2. **C. pinnatum** DC. l. c. Smaller (in var. *pumilum* Eng. sometimes becoming cespitose): cauline leaves pinnately

divided into few distant segments, terminal one much the largest; radical leaves similar or often entire: fruit $1\frac{1}{2}$ lines long, not beaked at summit, with less prominent ribs and very prominent calyx-teeth (figs. 103, 104).—Wet ground, Arkansas, Indian Territory and Texas. Fl. April.

DAUCUS Linn.—Fruit oblong, flattened dorsally: carpel with 5 slender bristly primary ribs and 4 winged secondary ones, each bearing a single row of prominent barbed prickles: oil-ducts solitary in the intervals (that is, under the secondary ribs), two on the commissural side: seed-section dorsally flattened, the face somewhat concave or almost plane (figs. 105, 106).—Bristly annuals or biennials, with pinnately decomposed leaves, foliaceous and cleft involucre bracts, concave umbels (connivent in fruit), and white flowers.

1. **D. Carota** L. Stem bristly: ultimate segments of the leaf lanceolate and cuspidate: rays more numerous and elongated than in the next (figs. 105, 106).—Naturalized everywhere.

2. **D. pusillus** Michx. Fl. 1.164. Stems retrosely papillate-hispid: leaves more finely divided, the ultimate segments narrowly linear: umbels smaller, with fewer and shorter rays.—Throughout the southern states and westward.

The varieties *microphyllus* and *scaber* simply depend upon the varying character of the hairs, a character not to be relied upon. This species is a very close American representative of the European *D. Carota*, and it is really questionable whether they should be kept specifically apart. The fruit is so exactly similar in both species that it can not be distinguished, and hence our figures 105 and 106 represent *D. pusillus* just as well as *D. Carota*.

EXPLANATION OF PLATE XV.—Fig. 87, fruit of *Tropocarpus Æthusa*; fig. 88, section of carpel of same; fig. 89, fruit of *Sium cicutæfolium*; fig. 90, section of carpel of same; fig. 91, fruit of *S. Carsoni*; fig. 92, section of carpel of same; fig. 93, fruit of *Berula angustifolia*; fig. 94, section of carpel of same; fig. 95, fruit of *Crantzia lineata*; fig. 96, section of carpel of same; fig. 97, fruit of *Cicuta maculata*; fig. 98, section of carpel of same; fig. 99, fruit of *C. bulbifera*; fig. 100, section of carpel of same; fig. 101, fruit of *Cynosciadium digitatum*; fig. 102, section of carpel of same; fig. 103, fruit of *C. pinnatum*; fig. 104, section of carpel of same; fig. 105, fruit of *Daucus Carota*; fig. 106, section of carpel of same. Fig. 87, is $\times 5$; figs. 89, 91, 97, 99, 101, 103, 105 are $\times 8$; figs. 88, 93, 95, 98, 100, 102, 104, 106 are $\times 25$; figs. 90, 92, 94, 96 are $\times 40$.



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