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SOME WEST AMERICAN RED CHERRIES.

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According to standard treatises upon North American general systematic botany, the later as well as the earlier, we have in the United States and Canada only two, or possibly three species of genuine cherry; that is red-fruited kinds, bearing their flowers in subumbellate or corymbose short clusters, as distinguished from the choke cherries—genus *Padus*—the fruits of which are almost or quite black, and are borne in long cylindric racemes. Our true cherries are supposed to be *Cerasus Pennsylvanica* of the Atlantic slope of the continent, and *C. emarginata* of the vaster and far more varied regions lying between the Rocky Mountains and the Pacific Ocean; two species, one for the Atlantic and one for the Pacific slope.

That *C. Pennsylvanica*, one and indivisible as a species should range from Newfoundland to Florida, and from New England to Colorado, is a proposition not easily accepted. But that *C. emarginata* or any other species of tree or shrub so highly organized, should occur all the way from the humid woodlands near the sea at Puget Sound, down to the heated and dry hills of the interior of California or the still more desert regions of southeastern California, Arizona, Utah and the Mexican border—this is beyond the belief of any botanist familiar with those extreme diversities of soil, altitude, humidity and heat that mark different sections of the Pacific slope of the continent, and the Great Basin.

There was published in Hookers' Flora Boreali-Americana, some seventy years since, two new cherries from the Columbia River, *C. emarginata* and *C. mollis*. Some twenty years later Dr. Kellogg, of San Francisco, assuming the cherry-bush of the San Francisco Bay region to be the *C. emarginata* of Douglas, named as new the red cherry just then discovered to be indigenous to middle elevations of the great Sierra Nevada. Precisely what Dr. Kelloggs' *C. glandulosa* was, one can not determine, no fewer than four species of the genus being now recognizable as inhabiting the Sierras of middle California; but that is unimportant, since the name he assigned his species does not hold.

In 1891, having seen the red-cherry trees and shrubs of the Columbia, and studied them on their native soil, I was able to perceive that the shrub of the hills of middle western California could not be referred to either of the Columbian species, and I described it in the Flora Franciscana as new, under the name *C. Californica*.

In 1903 there were sent in from the Mogollon Mountains of southern New Mexico, some branches with good foliage and ripe fruits of a cherry the investigation of which has led me to examine with care a large amount of herbarium material of these western red cherries lying in the National Herbarium, all of it under the name of *C. emarginata*.

Noticing in the herbarium even, what I had long since observed in the western field, considerable differences as to the size and outline of the drupes, I proceeded to extract and cleanse the nuclei or stones of these from different regions, finding to my great surprise that in these there seemed to reside good specific characters. I say to my surprise, because throughout the genus *Cerasus* as heretofore known, the stones are smooth and nearly or quite orbicular, hence not at all available for purposes of specfic diagnosis. How very different the case is here, in these West American cherries, the descriptions following will show.

Cerasus crenulata sp. nov.

Shrub with rather rigid copiously leafy branches puberulent the first and second seasons, later glabrous, grayish; leaves elongated, seldom with any hint of the obovate, on fruiting branches oblong or elliptic-oblong,

about 1½ inches long including the slender and not very short petiole, obtuse or acutish, never emarginate, obviously and evenly crenulate, neither glabrous nor yet very distinctly puberulent, only the midvein conspicuous, basal gland rarely one and small, usually none, those of sterile shoots 2 inches long or more, exactly lanceolate, acute, subserrate-crenulate, usually with 2 small but well developed glands at the junction of blade and petiole; corymbs short-peduncled, 4-flowered, pedicels and rachis minutely hirtellous; calyx with glabrous campanulate tube and somewhat hairy truncate or emarginate, often more or less erose teeth; drupes ovoid; stone ovoid, 2½ or 3 lines long, obtuse at both ends, obtusely and rather obscurely low-rugose.

Mogollon Mountains, New Mexico, at 8,000 feet, Aug. 23, 1903, O. B. Metcalfe, as to the fruiting specimens, those in my herbarium to be taken as the type. The flowering specimens are from a not far distant locality in the Black Range, by the same collector, in the spring of 1904. The half grown leaves of these have a somewhat obovate-oblong outline, and it is possible that they may prove to be of another species.

Cerasus arida sp. nov.

Evidently a low shrub, the stout branches remarkably naked as to foliage, the bark of a dull dark-brown; leaves and flowers borne very sparsely along short lengths of the season's growth of the main branches, or a few on some of the stout gnarled lateral branchlets, but these mostly only leafy; all parts glabrous; leaves rather dull-green, 1 to 1½ inches long, obovate-oblong, obtuse or acutish, very faintly subserrate-crenulate; glands at the very base of the blade large and obvious though often one only; corymbs often represented by a solitary pedicel and flower, the largest only about 5-flowered; calyx-tube sub-campanulate; petals small; fruit unknown.

Borders of desert at eastern base of the San Bernardino Mountain, Calif. S. B. Parish, June, 1894. In the nakedness and gnarled aspect of this shrub it recalls the genus *Peraphyllum*. Some of the lateral twigs an inch long represent a six or seven years' growth.

Type in U. S. Herb.

Cerasus prunifolia sp. nov.

Shrub stout and rigid, the short branches grayish and glabrous after the second season, at earlier stages very glaucous, as well as minutely hirtellous-villous, this pubescence also clothing the rachis of the short and almost corymbose 5 to 8-flowered raceme, as also the pedicels and calyx; small early leaves round-oval, 1 inch long, the later ones exactly obovate, short-petioled, 1½ to 2¼ inches long, 1¼ inches broad above the middle, obtuse or acutish, crenulate, glabrous above, hairy beneath along the veins, less so

between them, one sub-basal gland usually present but small, sometimes 2, as often none; calyx-tube campanulate, 10-striate, the deflexed oblong-oval segments nearly equalling the tube; fruit unknown.

At 8,000 feet in the mountains of Fresno Co., Calif., Hall & Chandler, June, 1900, distributed to U. S. Herb. under No. 385. Remarkable for broad leaves like those of a plum tree.

Cerasus rhamnoides sp. nov.

Larger than the last, rather more pubescent, some downy hairiness apparent on young branches; leaves oval to obovate-oblong, the larger 2½ inches long, apt to be acutish, crenulate, both midvein and pinnate veins obvious beneath; corymbs sub-sessile, about 5-flowered; drupes oval; stone elongate-ovoid, 3½ lines long, acutish at apex, margin on the one side little elevated, the whole surface smooth.

Mud Springs, Amador Co., Calif., Geo. Hansen, 1893, being his No. 1474, as in U. S. Herb. The only western true cherry known to me of which the stones are smooth. They are also remarkably long and narrow. The foliage is larger than in other species of the Sierra Nevada, and resembles that of *Rhamnus Californica.*

Cerasus Kelloggiana sp. nov.

Cerasus emarginata Greene, Flora Franciscana, 50, in part, not of Douglas; probably *C. glandulosa* Kell., Proc. Calif. Acad i, 59, 1855, not of Loiseleur, 1818.

Shrub with slender red-brown branches glabrous, at least after the first season; leaves oval or obovate on fruiting branches, lanceolate on sterile shoots, serrulate, 1 to 2 inches long, glabrous above, scarcely pubescent beneath except along the veins, even here only sparingly so; corymbs short, subsessile, 4 or 5-flowered; calyx-tube campanulate, segments short, obtuse; drupes small, round-ovoid, scarlet; stone ovoid, barely 3 lines long, mucronately acute at apex, slightly one-sided by a narrow obtuse margin, very distinctly rugose around the base, the wrinkles faint above, though obviously anastomosing.

Types: Mrs. Austin's specimens of 1896 in U. S. Herb., the flowering ones from mountains east of Chico, California, collected in June; the fruiting, from near Quincy, in September, both from the middle Sierra Nevada. Another sheet is from a little southward of these localities, namely at Emigrant Gap, this by M. E. Jones, June 28, 1882.

It was from this region that Dr. Kellogg had his *C. glandulosa;* but that it was this present species must remain doubtful. His description seems to call for a shrub more pubescent, even as to the branches, than anything now known from that part of California; though that may not be of so much importance.

Cerasus padifolia sp. nov.

Shrub glabrous in every part except the caducous stipules, these in their time glandular ciliolate; leaves of flowering branches quite copious, 1 to 1¾ inches long, obovate-oblong, obtuse, tapering to the short-petiole, minutely crenulate, the midvein beneath conspicuous, the pinnate veins less so; corymbs fastigiate, about 7 to 9-flowered, on peduncles of ½ inch or less, the pedicels rather longer; calyx-tube turbinate, one-third longer than the deflexed segments, these oblong-ovate, very obtuse or even truncate; petals not large, round-obovate above the tapering base.

Foothills at Carson City, Nevada, June 2, 1897, Marcus E. Jones. Type in U. S. Herb. Though in flower only, the specimens, by their ample fastigiate inflorescence and long slender calyx-tube with short segments, refuse to be consociated with those of any other western cherry.

Cerasus obliqua sp. nov.

Slender red and shining leafy branches nearly glabrous, clothed with only sparse appressed hairs; leaves of fruiting branches mostly obovate-oblong and obtuse, rarely emarginate, crenulate, 2 or 2½ inches long, glabrous above, sparsely short-hairy beneath both along the veins and elsewhere, those of sterile branches lanceolate, acutish, not larger than the others; flowers not seen; drupe evidently subglobose; stone obliquely ovoid, obtuse at both ends, prominently but obtusely rugose, inequilateral at base by the strong development of thick margin below the middle.

Known to me in but a single sheet of specimens in U. S. Herb. obtained at Oroville, Calif., Oct. 2, 1896, by H. E. Brown. Strongly marked by the characters of its pubescence and oblique thick-margined stones; and these specimens are the only ones known or heard of by me of any cherry from the plains or foot-hills of the interior valley of California.

Cerasus parvifolia sp. nov.

Slender shrub, either fastigiately or more widely branching; branches red-brown and polished, puberulent at first, when mature glabrous, copiously leafy; leaves small, short-petioled, those of fructiferous branches cuneate-obovate to oblong-cuneiform, ½ to 1 inch long, thinnish, obtuse but never emarginate, finely crenulate, those of sterile shoots larger, 1 to 1¼ inches long, broadly elliptic, acute, all faintly puberulent when young, still more obscurely so in age, notably white-venulose beneath, suprabasal glands mostly wanting altogether, occasionally present in reduced form; flowers unknown; drupe ovoid; stone about 3 or 3½ lines long, narrowly ovoid, very acute at apex, equilateral, one side with a broad flat marginal development, the other showing a mere impressed line, surface with several traces of longitudinal ridges radiating about the base but soon vanishing, otherwise smooth, or wholly smooth, and showing no traces of rugosity.

Known only from the vicinity of Mt. Shasta, California, the specific type being best represented in a sheet collected on the south side of Mt. Shasta, July, 1897, by H. E. Brown, being sheet No. 324,667, U. S. Herb. In this the diminutive spiraea-like leaves are of the smallest, and the stones of the drupes are perfectly smooth, though less emphatically acute than in those collected by Mr. Pringle somewhere in the same general region, August 28, 1882. In his specimens the stones, which are very acute, are a little larger, and show at base the hints of rugosity described. Other specimens from "Mt. Shasta and vicinity" were collected by Dr. Palmer in July, 1892, but these are past flowering, yet without mature fruit.

Cerasus obtusata sp. nov.

Shrub stoutish and with rather rigid copiously leafy branches, and glabrous in all its parts; leaves of fruiting branches narrowly obovate, obtuse, near emarginate, very obscurely subserrate-crenulate, 1 to 1¼ inches long, only the midvein prominent, seldom with even a faint trace of one suprabasal gland; corymbs short, subsessile, about 4-flowered; flowers not seen; drupe scarlet, subglobose; stone ovate, even broadly so, 2½ lines long, abruptly acutish at apex, marked with a few prominent though not acute rugosities.

The type is from Silvies, on the border of the arid interior of southeastern Oregon, by David Griffiths and E. L. Morris, August, 1901, sheet No. 402,822, U. S. Herb. The only other specimens of *Cerasus* from this climatic region seen by me are from Steins Mountains, both collected in 1896, one by Mr. Coville, the other by Mr. Leiberg. They are evidently from different sections of this isolated mountain range, and seem as if representing each another species; but the specimens were taken at the wrong season of the year for showing either flowers or fruit. They are past flowering altogether, while in neither is the fruit full-grown.

C. emarginata, the counterpart of *C. obtusata* in northern Oregon and Washington, is not glabrous, its leaves are comparatively narrow and twice as large, also emarginate, and with well developed suprabasal glands, while its nucleus has never been described as otherwise than smooth.

Cerasus trichopetala sp. nov.

Stoutish branches glabrous, the younger red and shining, the older gray; leaves at flowering time obovate-elliptic, very acute, about 1½ inches long, obscurely subserrate-crenulate, glabrous; flowers large, in subsessile corymbs of about 5, the rachis, pedicels and calyx glabrous, the large round-obovate petals appressed-villous externally at base and up and down the middle part; mature foliage not seen; stone obliquely ovoid, the thick ventral margin much elevated, the rugosity obtuse, low, obscurely reticulate.

Type in U. S. Herb., from Columbia Falls, Montana, by R. S. Williams, in flower May 24, 1894.