

NOTES

ADDITIONS TO THE VASCULAR FLORA OF YELLOWSTONE NATIONAL PARK, WYOMING.—Continued floristic work based at the Rocky Mountain Herbarium (RM) has resulted in 23 new records for the vascular flora of Yellowstone National Park. Field work in the northern Absaroka Range was done by Hartman and Nelson in 1985; the southwest Absarokas were collected separately and together by Hartman and Snow in 1987 and 1988 (Snow 1989, Floristics of the headwaters region of the Yellowstone River [Wyoming], M.S. thesis, Univ. Wyoming). Both areas had been virtually unbotanized as they are remote, are inaccessible except on foot, and are composed mostly of rugged volcanics reaching over 3200 m in elevation. These records are from a total of 850 collection numbers. Four additional specimens encountered in RM are also cited.

All 23 reports represent range extensions of these taxa in Wyoming (R. D. Dorn 1988, Vascular plants of Wyoming). Yellowstone distribution records are based on D. G. Despain (1975, Field key to the flora of Yellowstone National Park) and G. P. Hallsten, Q. D. Skinner, and A. A. Beetle (1987, Grasses of Wyoming, 3rd ed.). Nomenclature follows Dorn (1988) and the Wyoming Species List (B. E. Nelson and R. L. Hartman unpubl., at RM); voucher specimens are deposited at RM.

Senecio fuscatus Hayek (Asteraceae).—Park Co., above Hoodoo Basin at the head of Lamar River between Lamar Mountain and Hoodoo Peak, alpine meadows and slopes, T55N R108W sect. 35, 3108–3168 m, 22 Jul 1985, *Nelson and Hartman* 12761.

Senecio werneriiifolius (A. Gray) A. Gray var. *alpinus* (A. Gray) Dorn (Asteraceae).—Park Co., on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman* 21571; Republic Pass, ca. 5 km SE of Amphitheater Mountain, dry meadows and slopes above treeline, T57N R108W sect. 5, 3048 m, 14 Jul 1985, *Nelson and Hartman* 12455; near summit of The Thunderer, rocky slope, T57N R109W sect. 20, 3139 m, 13 Jul 1899, *A. Nelson and E. Nelson* 5822 (all collections verified by R. D. Dorn, 1988).

Taraxacum eriophorum Rydb. (Asteraceae).—Park Co., on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman* 21594 (collection verified by R. Doll, 1986).

Eritrichium nanum (Villars) Schrader ex Gaudin var. *elongatum* (Rydb.) Cronq. (Boraginaceae).—Park Co., Hoodoo Basin trail, ca. 10 air km NW of Stinking-water Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman* 21335.

Draba lonchocarpa Rydb. var. *lonchocarpa* (Brassicaceae).—Park Co., 0.8–1.6 air km S of Republic Pass, alpine meadows and rocky slopes, T57N R108W sect. 5, 2804–2987 m, 26 July 1985, *Hartman* 21554.

Arenaria nuttallii Pax ssp. *nuttallii* (Caryophyllaceae).—Park Co., 0.8–1.6 air km S of Republic Pass, alpine meadows and rocky slopes, T57N R108W sect. 5, 2804–2987 m, 26 Jul 1985, *Hartman* 21543; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N T108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman* 21564; Sylvan Pass to Top Notch Peak, spruce-fir and whitebark pine forests and bald summits and rocky outcrops, T52N R110W sect. 19, 20, 29, 30, 2651–3108 m, 29 Jun 1987, *Hartman and Snow* 23505.

Arenaria rubella (Wahlenb.) Smith (Caryophyllaceae).—Park Co., The Hoodoos, ca.

3 km SSW of Mammoth, limestone rock crevices, T57N R115W sect. 1, 2286 m, 3 Aug 1985, *R. D. Dorn* 4284; immediately SW of Republic Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson* 20812; Hoodoo Basin trail, ca. 10 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman* 21340; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman* 21577.

Cerastium beeringianum Cham. & Schldl. var. *capillare* Fern. & Wieg. (Caryophyllaceae).—Park Co., Hoodoo Basin trail, ca. 10 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman* 21338.

Silene hitchguirei Bocq. (Caryophyllaceae).—Park Co., Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman* 21355; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman* 21617.

Stellaria monantha Hultén (Caryophyllaceae).—Park Co., immediately SW of Republic Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson* 20827; Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman* 21370.

Carex capitata L. (Cyperaceae).—Park Co., above Hoodoo Basin at the head of Lamar River between Lamar Mountain and Hoodoo Peak, drier hummocks below snowfield, T55N R108W sect. 35, 3108–3168 m, 22 Jul 1985, *Nelson and Hartman* 12725.

Carex elynoides Holm (Cyperaceae).—Park Co., Hoodoo Basin trail, ca. 10 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman* 21339; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman* 21619.

Carex haydeniana Olney (Cyperaceae).—Park Co., immediately SW of Republic Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson* 20813; Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman* 21347, *Hartman* 21373; Teton Co., area between Thorofare Creek and Escarpment Creek, vicinity of Thorofare Ranger Station, dry sandbars of creek, T48N R110W sect. 5 and T49N R110W sect. 28, 33, 34, 2453 m, 4 Jul 1988, *Snow* 3136.

Carex obtusata Lilj. (Cyperaceae).—Park Co., immediately SW of Republic Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson* 20821; Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman* 21387; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman* 21614.

Carex pachystachya Cham. ex Steudel (Cyperaceae).—Yellowstone National Park, wet ground, 26 Aug 1913, *E. Bartholomew* 5216; Park Co., Sedge Creek, T53N R111W sect. 29, 2377 m, 20 Aug 1964, *W. M. Johnson* 499; Republic Pass, ca. 5 km SE of Amphitheater Mountain, dry meadows and slopes above treeline, T57N R108W sect. 5, 6, 3048 m, 14 Jul 1985, *Nelson* 12458 (first two collections verified by R. Whitkus, 1989).

Gentianella tenella (Rottb.) Börner (Gentianaceae).—Park Co., on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rocky slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman* 21600.

Lloydia serotina (L.) Reichenb. (Liliaceae).—Park Co., immediately SW of Republic

- Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson* 20802.
- Festuca baffinensis* Polunin (Poaceae).—Park Co., Hoodoo Basin trail, ca. 10 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman* 21344.
- Poa secunda* J. S. Presl var. *incurva* (Scribner & T. Williams ex Scribner) Beetle (Poaceae).—Park Co., immediately SW of Republic Pass, alpine meadows and grassy slopes, T57N R108W sect. 6, 3139 m, 14 Jul 1985, *Hartman and Nelson* 20830.
- Potentilla nivea* L. (Rosaceae).—Park Co., Hoodoo Basin trail, ca. 10 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 35, 3048–3168 m, 22 Jul 1985, *Hartman and Nelson* 21333.
- Saxifraga adscendens* L. var. *oregonensis* (Raf.) Breitung (Saxifragaceae).—Park Co., Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman* 21353; on the divide 10–15 air km SSE of Silver Gate, MT, alpine meadows and rock slopes, T57N R108W sect. 9, 16, 21, 2987–3230 m, 27 Jul 1985, *Hartman* 21636.
- Saxifraga flagellaris* Willd. ex Sternb. var. *crandallii* (Gand.) Dorn (Saxifragaceae).—Park Co., Hoodoo Basin trail, ca. 11 air km NW of Stinkingwater Peak, grassy alpine slopes, T55N R108W sect. 26, 3017–3078 m, 22 Jul 1985, *Hartman* 21376.
- Saxifraga rivularis* L. ssp. *rivularis* var. *flexuosa* (Sternb.) Engl. & Irmscher (Saxifragaceae).—Park Co., Sylvan Pass to Top Notch Peak, spruce–fir and whitebark pine forests and bald summits and rock outcrops, T52N R110W sect. 19, 20, 29, 30, 2651–3108 m, 29 Jun 1987, *Hartman and Snow* 23566.
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NOTEWORTHY COLLECTIONS

ARIZONA

CATHESTECUM ERECTUM Vasey and Hack (GRAMINEAE).—Pima Co., Ragged Top, ca. 6.5 km N of Silver Bell, South slope of foothills 1 km ENE of Wolcott Peak, T11S R8E sect. 25 NE¼ & sect. 30 NW¼, 760 m, in silty clay soil among high-feldspar quartzite rubble, occasional in some areas, but dense with relatively continuous populations up to a hectare in others, with *Encelia farinosa*, *Carnegiea gigantea*, and *Hibiscus denudatus*, 25 Oct 1989, *J. F. Wiens* 89-RT-41 (ARIZ), determined by J. R. Reeder, 17 Nov 1989, *J. F. Wiens* 89-RT-44 (ASU, ASDM).

Previous knowledge. Known from NC-Sonora, E to Trans-Pecos Texas, S through much of Mexico, Guatemala, and El Salvador (Swallen, J. R., The grass genus *Cathestecum*. J. Washington Acad. Sci., 1937, 27495–27501). Common on dry, rocky hills and plains in tropical and subtropical communities, and expected for Arizona (Gould, F. W., Grasses of Southwestern United States, Univ. Arizona Press, 1951, p. 154). Single Arizona collection by E. Palmer in 1869 (unnumbered at US) is labeled “southern Arizona”. Northernmost Sonoran localities are 25 km S of Pitiquito (1932,



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