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A NOTE ON GERANIUM RICHARDSONII FISCH. & TRAUTV.

John W. Van Cott¹

While examining specimens of the genus *Geranium* it became apparent that there were discrepancies between published botanical descriptions based on herbarium specimens and plants as they occur naturally. It is always difficult to collect a large specimen and to arrange it to fit a herbarium sheet. Often, the specimen is separated into individual stems, or portions are discarded before pressing. When such an alteration is necessary and when incomplete or altered specimens are placed in collections, they form the basis upon which descriptions are made. Such circumscriptions have led to confusion of students attempting to understand taxonomic entities.

Descriptions of *Geranium richardsonii* are cited as an example. In 1907, Hanks and Small (p. 18) described *G. richardsonii* as "caudex often slightly branched." Jones and Jones (1943, p. 32) described it with "the usually simple caudex" whereas Harrington (1954, p. 352) cited that species as "plants . . . erect from a simple caudex." These three statements are slightly misleading because the Richardson Geranium is often definitely rhizomatous (Figs. 2, 3, 4) even though a great many specimens appear to have only a simple caudex (see Fig. 1). Plants such as those appearing in Figures 2, 3, and 4, are often broken apart in such a manner as to appear like the specimen in Figure 1.

Shaw (1952, p. 302), who did extensive field work on *G. richardsonii*, described it more accurately as having the "caudex often branched."

It seems probable that the more misleading descriptions cited above might well have been derived from specimens which lack complete caudices. Of course, there are specimens in herbaria which do represent the situation as it occurs in nature, but there are a large number of inadequate specimens and it is these which prompt this note. Thus, after an examination of some three hundred herbarium sheets and numerous plants in the field, I present herein a description of the caudex of *G. richardsonii*.

Caudex clothed with scale-like, brownish, remnants of petioles and stipules, simple or branched; rhizomes, when present, 3-17 cm long, one to several from a central, stout, woody, perennial rootstock with a more or less prominent, simple or branched taproot.

REPRESENTATIVE SPECIMENS. ARIZONA: Apache Co., White Mt. Scout Camp, *Deaver* 4660 (ASC). COCHINO Co., Weatherford Road, San Francisco Peaks, *Carson* 268 (ASC); road to Weimer Springs, N of Mormon Mts., *Carson* 49 (ASC); NW side of Mormon Mt., *Kynoch* 332 (BRY). CALIFORNIA: Alpine Co., head of East Carson River,

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Fig. 1. UTAH. Sanpete Co.: Head of Lake Fork, T19S, R4E, ca. 10,000'. *Van Cott* 943 (BRY).
 Figs. 2, 4. UTAH. Garfield Co.: Escalante Canyon, 5 mi E of Widstoe, T34S, R1W, ca. 8,000'. *Van Cott* 981a and 981b (BRY).
 Fig. 3. UTAH. Garfield Co.: 9 mi N of Boulder on Deer Creek, T32S, R5E, 7,500'. *Van Cott* 987 (BRY).

Johnson 213 (USU). COLORADO: Boulder Co., $\frac{1}{4}$ mi above Science Lodge, *Murdock* 542 (BRY). IDAHO: Bear Lake Co., Emigration Canyon Forest Camp, *Shaw* 69 (USU); Caribou Co. N of Pruess and Montpelier Creek Divide, S23, T11S, R45E, Caribou Natl For, *Major* 20 (USU). MONTANA: Beaverhead Co., U.S. Sheep Exp Station, Odell Creek, *Calvert* 102 (BRY). UTAH: Kane Co., left fork of headwater of Virgin River 15 mi NW of Orderville, *Maguire* 18823 (BRY); Summit Co., near Lost Lake, Uinta Mts., *Patrick* 150 (BRY); 3 mi west of Holiday Park, *Welsh et al.* 6305 (BRY); San Juan Co., shady places along Indian Creek 13 mi west of Monticello, *Conquist & Holmgren*, 9403 (USU).

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