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PSEUDOCROSSIDIUM AUREUM (BARTR.) ZAND.
(POTTIACEAE, MUSCI) NEW TO UTAH

John R. Spence¹

ABSTRACT.—*Pseudocrossidium aureum* (Bartr.) Zand. (Pottiaceae, Musci) is reported as new to Utah from a locality in Wayne County. The species distribution is noted and comparisons are made with the other three species of *Pseudocrossidium* found in North America.

Despite excellent recent floras for Utah (Flowers 1961, 1973), the bryophyte flora of the state remains incompletely known. This is even more obvious for the intermountain region (sensu Cronquist et al. 1972). Recent studies that have concentrated on dryland bryophyte floras (e.g., Magill 1976, Stark and Castetter 1982, McIntosh 1986) emphasize the diversity of dryland bryophytes. The studies of Magill and McIntosh in particular, which concentrated on intensive collecting in small regions, indicate that many elusive and poorly known bryophytes remain to be discovered in the western drylands.

While conducting studies on the bryophyte flora of southern Utah, I collected a species of *Didymodon*, which proved upon identification to be *D. vinealis* (Brid.) Zand. Intermixed with the *Didymodon* were a few small sterile plants that keyed to *Pseudocrossidium aureum* (Bartr.) Zand. using the key in Zander (1979). A duplicate of the collection was confirmed by Dr. Zander of the Buffalo Museum of Science. This species was not previously known from Utah, and the nearest known populations are in southern Coconino County in Arizona (Haring 1961). The site information and associated species for this collection were:

Utah: Wayne Co., Capitol Reef National Park, near the Rim Overlook. Growing intermixed with *Didymodon vinealis* at base of cliff of Navajo Sandstone in shaded, north-facing alcove on dry sand. In slickrock and pinyon-juniper communities, with *Pinus edulis*, *Juniperus osteosperma*, *Shepherdia canadensis*, *Coleogyne ramosissima*, *Bouteloua gracilis*, *Yucca* ssp., and *Opuntia* ssp. Elevation 2,195 m, 26 November 1986, Spence 3319a. pH of sand = 6.0 (pHydrion paper). Deposited in BUF and my personal herbarium.

Pseudocrossidium aureum was originally

described from the Santa Catalina Mountains of southern Arizona as *Tortula aurea* (Bartram 1924). The transfer to *Pseudocrossidium* was made by Zander (1979). An important component of the bryophyte stratum in the Sonoran and Chihuahuan deserts (Magill 1976, Nash et al. 1977), its distribution is Texas, Oklahoma, New Mexico, Arizona, Utah, California, and northern Mexico. Apparently it has not yet been reported from the Mohave Desert of California, Nevada, and Utah (Harthill et al. 1979). The Utah locality is several hundred miles north of the nearest previously reported locality in Arizona. It also occurs at a relatively high elevation compared to the rest of its distribution.

The genus *Pseudocrossidium* is distinguished from the related genera *Barbula*, *Tortula*, and *Bryoerythrophyllum* by *inter alia* its differentiated perichaetial leaves, strongly revolute leaf margins, and lack of an adaxial stereid band in the costa (Zander 1979, 1981). *Pseudocrossidium aureum* lacks many of the features of the genus, and sporophytes remain unknown (Zander 1981). The species has been illustrated by Bartram (1924), Steere (1938), Crum and Anderson (1981), and Zander (1981).

Three additional species of *Pseudocrossidium* are known from western North America. These are *P. hornschurchianum* (Schultz) Zand., *P. replicatum* (Tayl.) Zand., and *P. revolutum* (Brid. in Schrad.) Zand. *Pseudocrossidium aureum* is distinguished from these species by its conspicuous, yellowish-reddish, smooth awn. The other three species are generally apiculate or mucronate. The Eurasian species *P. hornschurchianum* has

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been reported from a botanic garden in Vancouver, British Columbia, and may be introduced (Tan et al. 1981). Another Eurasian species, *P. revolutum*, also occurs in California, Oregon, Washington, Idaho, British Columbia, Yukon Territory, and the Canadian Arctic Archipelago. The species *P. revolutum* is an important component of the shrub-steppe of Oregon, Washington, and British Columbia (McIntosh 1986). *Pseudocrossidium replicatum* has a distribution similar to *P. aureum*, although it is also found in the Andes of South America. Its North American distribution is Texas, New Mexico, Arizona, and Mexico (Zander 1979).

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