

## NOTEWORTHY COLLECTIONS

## CALIFORNIA

*NAJAS MINOR* Allioni (HYDROCHARITACEAE).—Alameda Co., Lake Del Valle Park, southeast end of Lake Del Valle, along east side of peninsula extending northward from southeast side of West Swim Beach swimming area, 37°34'47.7"N, 121°41'48.5"W, drifting fragments fairly common along the margins of the lake in shallow water, flowers and some fruits present, 23 July 2011, Donald H. Les 1029 [with Hamid Razifard] (CONN). This California material was collected under the East Bay Regional Parks permit #596 held by the University and Jepson Herbaria, University of California, Berkeley, Alameda Co., San Francisco Bay Area Pond in Del Valle Park, 7000 Del Valle Rd, Livermore, 07 August 2003, K. Simmons PDR 1283308 (CDA) [misidentified as *Najas marina* L.]. Alameda Co., San Francisco Bay Area Pond in Del Valle Park, 7000 Del Valle Rd, Livermore, 07 August 2003, K. Simmons PDR 1283309 (CDA) [misidentified as *Najas marina* L.].

*Previous knowledge.* *Najas minor* was unknown in California prior to our collection and a search of the University of California-Berkeley herbarium failed to disclose any material. However, a survey of herbarium material from CDA disclosed three specimens identified as *Najas marina*, which were collected from the same locality (Lake Del Valle, CA) in 2001 and 2003. We confirmed the identity of the specimen collected in 2001 (*J. R. Willson PDR P199008-C*, [CDA]) as *Najas marina*; however, the two specimens collected in 2003 were misidentified and actually represent specimens of *Najas minor*. Consequently, the 2003 records provide the earliest verification of this nonindigenous species in the state of California. The closest known locality of *N. minor* occurs in Texas, approximately 2400 km south-eastward of the California occurrence (see Texas Noteworthy Collection). An early paper dealing with dermatitis in California rice field workers suggested that the malady might be caused by contact with the leaf “thorns” of the water plant *Najas minor* (Alderson and Rawlins 1925). However, the authors clarified that *Najas minor* did not occur in California, and that this ailment had been reported in the European literature. Certainly it is highly unlikely that this species would have been known from California a decade before the first verified occurrence in North America (Wentz and Stuckey 1971) and preceding by 78 years the first known voucher specimen from the state. However, *Najas* species (e.g., *N. graminea*) are known to occur as rice field weeds in both Australia and California as a result of contaminated planting stocks (McIntyre and Barrett 1985) and it is intriguing to think that the plants could have escaped detection for so long in such a thoroughly botanized region.

*Significance.* *Najas minor* is a nonindigenous, invasive aquatic plant introduced to North America from Eurasia at some point before 1932 (Wentz and Stuckey 1971). Because of its nuisance status and expanding distribution, this record raises concern for the possible proliferation of new sites for this weedy plant in the western United States, where it fortunately has not yet established. The source of introduction for *N. minor* in California is unknown. However, because this species is

known to spread from rice fields, it should be searched for thoroughly not only in the Sacramento Valley, but also throughout other rice-growing portions of the state.

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## TEXAS

*NAJAS MINOR* Allioni (HYDROCHARITACEAE).—Bastrop Co., Lake Bastrop Park, boat launch site at the northwest end of the lake, 30°09'55.3"N, 097°16'49.0"W, abundant along the pier in 1–2 m of water, with *Najas guadalupensis* and *Hydrilla verticillata*, 11 July 2010, Donald H. Les 843 and Nicholas P. Tippery 320 (CONN).

*Previous knowledge.* This material represents the first verified record of *N. minor* in Texas. The Texas Parks and Wildlife Department (TPWD 2012) lists only “marine naiad” and “southern naiad” among the aquatic vegetation of Lake Bastrop. We confirmed the existence of southern naiad (*N. guadalupensis*) at the site; however, we found no evidence of marine naiad (*Najas marina*) and suspect that *N. minor* had been misidentified as the latter because of their similarly toothed leaves. The strongly toothed leaves of *N. marina* differ from all other North American species except *N. minor*, and this character often is used as a distinguishing trait for the former in keys written for areas where *N. minor* is not known to occur. Because of its proximity in Louisiana and Oklahoma, Diggs et al. (2006; p. 676) concluded that *Najas minor* “... would thus not be unexpected in East TX.” Our collection substantiates that prediction.

*Significance.* This record confirms the continued westward spread of this invasive aquatic plant in North America and provides the first verified floristic record for the species in the state of Texas. This locality also represents the most westward extension of *N. minor* in North America with the exception of the highly disjunct material from California, which is described above. A

re-examination of “*Najas marina*” specimens from Texas is suggested, given that it is likely to disclose additional, earlier records of *N. minor* from the state.

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