

NOTES

SOUTHERN RANGE EXTENSION OF *JUNIPERUS SCOPULORUM* SARG. (CUPRESSACEAE) INTO MEXICO.—Little (Atlas of United States Trees. USDA Misc. Publ. 1146, 1971) recorded the range of Rocky Mountain juniper, *Juniperus scopulorum* Sarg., as being from British Columbia and Alberta into central Arizona and southern New Mexico. The species is found on low mountain slopes, canyon bottoms and dry, exposed sites; from sea level in northern areas to 2700 m elevation at the southern end of its range.

This species has not been reported for Mexico (Martinez, Las Pinaceas Mexicanas. UNAM. 1963), although collections by J. T. Marshall, Jr., (Marshall 38, ARIZ 102157 and Marshall 78, ARIZ 102154) were made in 1952 and C. H. Townsend and C. M. Barber (Townsend and Barber 370, A) in 1899. Another collection of *J. scopulorum* was recently made by C. W. Pennington (Pennington 101, TEX 264066) in Maicoba (Maycoba), Sonora in 1968. These areas of Sonora and Chihuahua have apparently been poorly explored, botanically (LeSueur, Univ. Texas Pub. 4521, 1945).

One Chihuahuan collection (Marshall 38) was on the Rio Gavilan, 1.6 km SE of the mill at Gavilancito (Gavilan). Maple, sycamore and oak are associated trees on the floodplain of the river at 1737 m elevation. The other Chihuahuan collection (Townsend and Barber 370) was at 2134 m in the Sierra Madres near Colonia Garcia (Garcia).

One Sonoran collection (Marshall 78) was in Molino Canon in the Sierra de los Ajos, west of Esqueda. The collection was made from a large tree (0.9 m d.b.h.) on the canyon bottom along the stream at 1676 m elevation, other trees of this species were observed growing to 1829 m. The other Sonoran collection (Pennington 101) was at Maycoba at about 1524 m. Pennington did not note the abundance but did note that the trees were used for firewood and posts and the seeds for necklaces in 1968, which could indicate a sizeable population of *J. scopulorum* if the local inhabitants recognize "Sabino" as *J. scopulorum* only, as inferred from Pennington. We have seen several other specimens from the Sierra Madre Occidental, but collection locality data were insufficient for mapping.

These range extensions (see Fig. 1, in Mexico) add further evidence for the existence of this species over a broader range in earlier times (Wells, Science, 167: 1574–1582, 1970). The scattered populations suggest that the present distribution is resultant from the development of a drier, interior climate in western North America since the Pleistocene (Wells 1970). The species is now restricted to less xeric localities within its range (Hall, Ann. Missouri Bot. Gard. 39: 1–64, 1952). The discovery of these populations in the Sierra Madre Occidental does lend support to the Mexican refugia hypothesis (Axelrod, Bot. Rev. 7: 433–509, 1958) which has commonly been used to explain island populations, presumably left stranded during Pleistocene fluctuations in species ranges.

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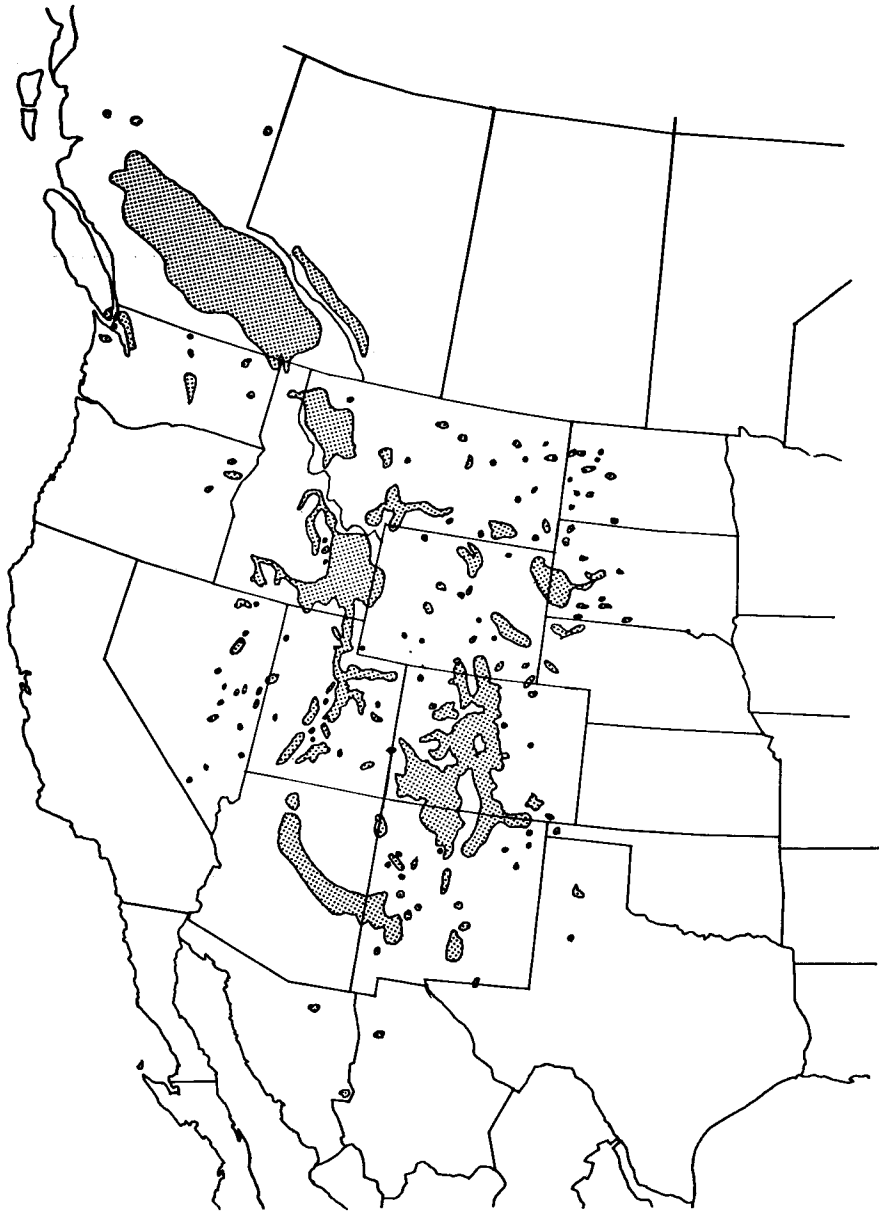


Fig. 1. Revised distribution of *Juniperus scopulorum* Sarg. as adapted from Little (1971). Note the new sites in northern Mexico, which show the southern-most locations of this species. See text for discussion.