Distribution and Synonymy of Juniperus californica Carr. (Cupressaceae) in Baja California, Mexico

T. A. ZANONI AND R. P. ADAMS
Department of Botany and Plant Pathology
Colorado State University
Fort Collins, Colorado 80521

BULLETIN OF THE TORREY BOTANICAL CLUB
Vol. 100, No. 6, pp. 364–367
November–December 1973
Distribution and synonymy of *Juniperus californica* Carr. (Cupressaceae) in Baja California, Mexico

T. A. Zanoni and R. P. Adams

Department of Botany and Plant Pathology
Colorado State University
Fort Collins, Colorado 80521


Vasek (1966) has recently discussed the distinctiveness of *Juniperus californica* Carr. and its relationship to *J. occidentalis* Hook. and *J. osteosperma* (Torrey) Little. The objective of this paper is to establish the geographical distribution and the synonymy of the species relative to Baja California. The distribution and synonymy of *J. californica* in Baja California are presented at this time since this taxon will not be treated in a detailed study of the junipers of Mexico which is currently being conducted by the authors. *Juniperus californica* in Baja California will be examined in detail in conjunction with *J. osteosperma*, *J. occidentalis*, etc. in the latter phases of the junior author’s studies of the junipers of North America.

*Juniperus californica* Carr. is an arborescent (to 12 m tall) constituent of the conifer woodland in California, southern Nevada, eastern Arizona, and Baja California (see inset, Fig. 1). It is found in the Upper Sonoran and occasionally in the Lower Sonoran life zones (Shreve and Wiggins, 1964) of the Sierra Juarez, Sierra San Pedro Martir, Sierra San Borja, and Sierra de Calamujue y San Luis and in nearby desert fringes in Baja California from approximately 270 to 1200 m elevation (Fig. 1). It also exists at lower elevations on Isla de Cedros (75–1200 m) and Isla de Guadalupe (15–500 m).

Martinez (1963) listed this taxon for 5 localities on the mainland of Baja California, but did not note the occurrence on the two Pacific islands. It is now known from the length of Estado de Baja California. The insular localities have been reported in the American botanical literature since 1859 (Kellogg, 1859, Watson, 1875).

The mainland trees and the Guadalupan trees have been consistently recognized as *Juniperus californica* Carr. However, several different names have been used for the specimens from Isla de Cedros (Cedros or Cerros Island). This confusion has arisen, in part, from the different names applied to Isla de Cedros. The confusion concerning the name of the island was examined by Eisen (1901). He determined that the true name of the island is Isla de Cedros (or Cedros Island) and that this is the name used by the island’s discoverer, Ulloa, in 1539, although both Cedros and Cerros Island have been commonly used.

In 1859, Kellogg (1859) published a new species, *J. cedrosiana*, from Cedros Island (i.e., Isla de Cedros) using the specimen collected by Veatch (specimens at NY and GH). Later, Kellogg (1860) published the name *J. cedrosiana* for junipers from Cedros Island (i.e., Isla de Cedros). Veatch, in a note (Kellogg, 1860), indicated that the specimens were actually from Cerros Island! Thus, it appears that Kellogg had assigned two names to the same juniper from the Isla da Cedros. Examination of the species descriptions for *J. cer-

---

1Submitted as a portion of a M.S. thesis to Colorado State University. This study was supported by research grants GB24920 and GB37815X from the National Science Foundation. The authors wish to thank the following herbaria for use of specimens: A, ARIZ, BH, CAS, DS, F, G, INIF, MEXU, MICH, MO, MSC, PH, POM, RSA, UC, and US.

Received for publication August 8, 1973.
rosianus and J. cedrosiana revealed that they are identical.

Engelmann (1877) first recognized that J. cerrosianus was synonymous with J. californica. Standley (1920) and Shreve and Wiggins (1964) concurred. Examination of specimens from mainland Baja California, Isla de Cedros, and Isla de Guadalupe leads us to conclude that they are all of the same species, J. californica.

Juniperus californica had been frequently reduced to synonymy under J. occidentalis Hooker by various European authors. This practice appears to have begun with Gordon (1862). Gordon's J. occidentalis is listed as being present in

Fig. 1. Distribution of Juniperus californica Carr. in Baja California, Mexico. Inset shows distribution of the species in North America, including Isla de Cedros (C); Isla de Guadalupe (G) (adapted from Little, 1971).
Oregon Territory (states of Oregon and Washington). *Juniperus californica* is not known from that region. The two specimens cited are *J. occidentalis* Hooker as recognized today. However, Parlatore (1868) specifically includes *J. californica* Carr. under *J. occidentalis* since specimens from California and Cerros Island are cited.


Common names of the species include cedro (apparently the only name used in Mexico), California juniper, Cerdos Island juniper, Cedar Island juniper, desert white cedar, sweet-berried juniper, and white cedar (Kellogg, 1859, 1860; Eisen, 1901; Standley, 1920; Sudworth, 1927; Little, 1953; Gaussen, 1968). Distribution records were obtained from herbarium specimens from A, ARIZ, BH, CAS, DS, F, GH, INIF (Inst. Nacional de Investigaciones Forestales, Mexico), MEXU, MICH, MO, PH, POM, RSA, UC and US.

Specimens examined:

**ESTADO DE BAJA CALIFORNIA. Mountains of N. Baja, Orcutt 830 (MO); Jacumba, Fisher 32 (US); 50 mi. SE of Tecate, Munz 9579 (RSA, UC); 10 mi. S of Alaska, Harbison s.n. (RSA, UC); 9 mi. W of Alaska on road to Ensenada and Tijuana, Wiggins 11238 (CAS, DS, UC); Alaska, Cota s.n. (UC); 8 mi. S of La Rumorosa near La Teta de la India, Raven 16814 (DS, GH, RSA); 8 mi. S of La Rumorosa, Henrickson 4160 (RSA); summit of grade about 6–8 mi. W of Ojos Negros Rancho, Wiggins and Gillespie 4064 (CAS, DS, F, GH, MEXU, MICH, MO, RSA, US); 10–20 mi. E of Ensenada to Ojos Negros, Goldmann 1116 (US); vicinity of Ojos Negros, Wiggins and Gillespie 4081 (CAS, DS, F, GH, MICH, MO, RSA, US); Ojos Negros in Sierra de Juarez, Madrigal S. s.n. (INIF, MEXU); 3 mi. SW of Santa Catalina, Broder 453 (DS, US); 3 mi. W of Santa Catalina, Broder 447 (DS, US); hill of Santa Catalina Mission, Broder 302 (DS, US); 5 mi. W of Valle Trinidad, Wiggins and Wiggins 16077 (ARIZ, CAS, DS, UC); 1.9 mi. NW of Trinidad de la Valle, Hastings and Turner 66–33 (ARIZ, DS); Arroyo Grande in Sierra Juarez, Kauwe 698 (CAS, DS); El Coyote, Sierra San Pedro Martir, Moran and Thorne 14511 (RSA); Rancho Las Suerte in Sierra San Pedro Martir, Thorne 31903 (MICH, RSA); Vallederos, Brandegee s.n. (UC); 20 mi. E of El Socorro and 30 mi. N of El Rosario, Humphrey 6838a (ARIZ); 24.4 mi. E of El Rosario, Hastings and Turner 63–235 (ARIZ, DS); 27 mi. E of Rosario, Wiggins 7567 (F, MICH, UC, US); 5 mi. E of Quail Springs (27 mi. E of Rosario), Wiggins 7567 (DS); between Las Cuevas and Mission San Fernando, Cronemiller 3086 (DS); 7 mi. N of Rancho Arenosa between San Augustin and Rosario, Wiggins 20924 (DS, MICH); Agua Dulce, Brandegee s.n. (UC); Cerro Santa Maria, Moran 11469 (DS, INIF, RSA, UC); Cerro el Sauco in Sierra San Borja, Moran 8089 (DS, INIF, UC); San Juan Valley in Sierra Borja near El Terminal, Thorne and Henrickson 32741 (RSA); 1 mi. S of Rosarito on trail to San Antonio, Wiggins 9979 (DS, MICH, UC, US); Cerro Potrero, Moran 12151 (DS, INIF); Portezuelo de Jamau, Moran 13653 (ARIZ, INIF).

**ISLA DE CEDROS.** Cerros Island, Rose 16132 (A, US); Greene s.n. (GH); Solis 40 (US); Palmer s.n. (US); Anthony 107 (DS, GH, MO, PH, POM, US). Cerros Island, Veatch s.n. (A); Stewart 75 (CAS); Cerros Island, SE Anchorage Hanna s.n. (CAS, A, US); near middle of island, Moran 3025 (UC); Canyon 2 mi. W of village, Haines and Hale s.n. (UC); near spring above Cerdos village, Moran 10579 (INIF, UC); arroyo bank, middle of east coast, Moran 10694 (DS); head of central valley, Hanna s.n. (CAS); south slopes of cerros Peak, Haines and Hale s.n. (CAS); “near type locality,” Mason 1991 (CAS, GH, US); near top of Cerdos Mt., NW side of peak, Rodierchi 189 (CAS). Also, Madrigal Sanchez (1970) notes the following localities: near the middle of the island at Agua Macheteada, Calipatria, and the extreme north end of the island.

**ISLA DE GUADALUPE.** Guadalupe Island, Palmer 91 (GH, MO, PH); on SE coast, Lindsay 2635A (CAS, DS, RSA); north of Lobster camp on SE shore, Newcomb 187 (BH, DS, UC, US); near ruins of old whaling operation on SE coast, Kuitj and Miller 1077 (UC); mouth of Juniper
canon, Moran 6454 and 6454A (DS, MEXU, RSA); cliff on south side of canyon on east slope of El Picacho, Moran 12062 (ARIZ, INIF, MICH).

A California company purchased Isla de Guadalupe for raising Angora goats in approximately 1865. Palmer (see Watson, 1875) noted that the junipers were “all over the middle of the island and occasionally at the south end, in the ravines and low valleys, forming groves about fifteen feet high.” By 1885, Greene (1885) had noted that the species was on the verge of extinction due to the excessive grazing by goats. Howell (1941) found a “ghost grove” of dead *Juniperus californica* trees in the center of the island and reported the species as being extinct. However, collections by Newcomb in 1957 and Moran in 1965 indicated that a few trees still existed in several areas protected from the goats.

**Literature Cited**


