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## *Dicoria canescens* T. & G., an Aboriginal Food Plant in the Arid West

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Although its use is not documented in published ethnobotanical accounts of the Indians of the western deserts, archaeological evidence suggests that two subspecies of

*Dicoria canescens* T. & G. provided edible seeds that were used to a considerable extent as a food source in aboriginal times. The seeds (achenes) are available for harvesting in the winter, the season in which very few seeds of this region could be gathered and a great reliance was placed on stored food supplies. The related species *D. brandegei* A. Gray is reported to have been eaten by the Hopi of Arizona (Hough 1898), although details of collection and processing are lacking.

*Dicoria canescens* ssp. *canescens* is a much-branched herb of the family Asteraceae that germinates following summer thunder-showers in sandy areas of the Creosote Bush Scrub plant community of the Mojave and Colorado deserts (Munz 1974:156). It flowers in the autumn and early winter, and the seeds (4.5-5.5 mm. long) are available for collection from about December through February, depending on local conditions. It is very common on the open sandy plain of the Coachella Valley, the northern end of the Salton Basin of southeastern California, where it has been found in archaeological contexts at two localities (Fig. 1).

Flotation analysis of ash samples from a hearth at site TC-27N at the mouth of Tahquitz Canyon, near Palm Springs, upper Coachella Valley, California, revealed the presence of *Dicoria canescens* ssp. *canescens* seeds (Fig. 2), as well as seeds of *Chenopodium* sp. and lowland purslane (*Sesuvium verrucosum* Raf.) (Wilke, King, and Hammond 1975). The radiocarbon age of this hearth is  $245 \pm 50$   $^{14}\text{C}$  years (= A.D. 1480-1620). This site was occupied in historic time by Cahuilla speaking peoples—possibly the *kauisiktum* and *paniktum*, some of whose descendants are now members of the Agua Caliente band of Cahuilla, a Shoshonean-speaking tribe (Strong 1929).

About 25 km. to the east of Tahquitz Canyon, the site of Myoma Dunes yielded substantial data on aboriginal use of this species.

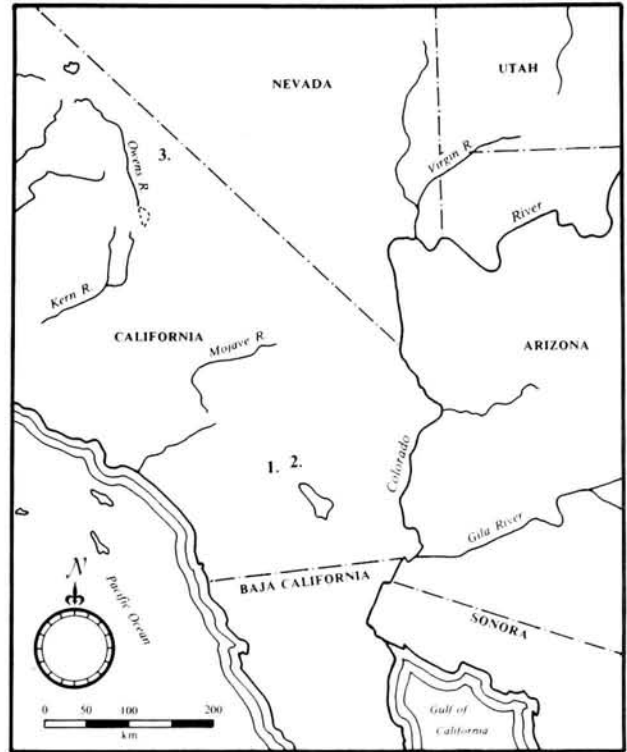


Fig. 1. Locations of archaeological sites where aboriginal use of *Dicoria canescens* is documented. 1: Tahquitz Canyon; 2: Myoma Dunes; 3: Last Chance Mountains.

The site overlooked and was occupied during the most recent stand(s) of Lake Cahuilla, a freshwater lake over 160 km. long formed by incursion of the Colorado River into the Salton Basin. The site yielded a large quantity of human coprolites. Analysis of 77 coprolites from a large prehistoric refuse deposit (Coprolite Bed A) showed significant use of *Dicoria*, along with a wide range of other low desert and aquatic plant and animal resources (Wilke 1978). *Dicoria* seeds (Fig. 2) were present in 21 (27%) of the samples. We believe that the majority of these samples containing *Dicoria* were deposited during the winter. Other items in the apparent winter diet were of great variety and included the pinyon nut (*Pinus monophylla* Torr. & Frém.), represented by seed hull fragments, which occurred in eight of the samples containing *Dicoria*, and screwbean

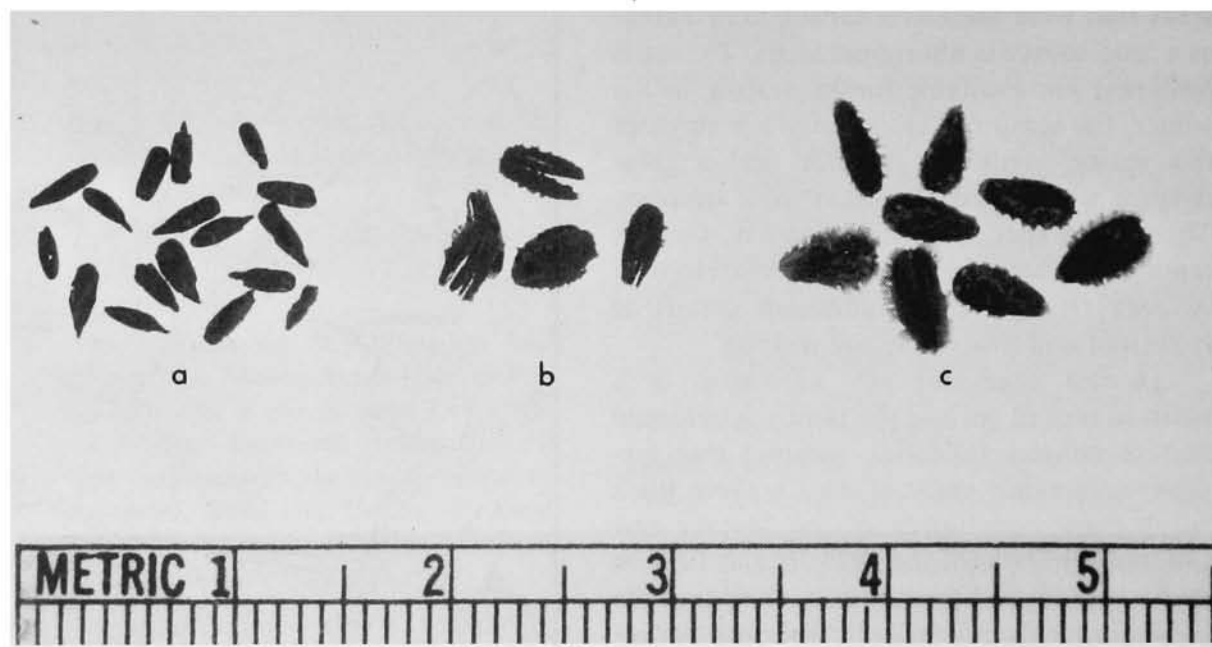


Fig. 2. Seeds of *Dicoria canescens* from archaeological contexts. a: carbonized seeds of *D. c. ssp. canescens* recovered by flotation from a hearth at Tahquitz Canyon, Coachella Valley, California; b: seeds of the same subspecies from human coprolites recovered at the Myoma Dunes, Coachella Valley; c: *D. c. ssp. clarkae* seeds from a basket recovered in the Last Chance Mountains just off Eureka Valley, California.

(*Prosopis pubescens* Benth.), which occurred in 19 of the samples containing that species. Both of these were important winter foods of the historic Cahuilla (Barrows 1900; Bean and Saubel 1972), and it is probable that the occupants of the Myoma Dunes just prior to A.D. 1500 (when the samples were deposited there) were prehistoric Cahuilla. In none of the samples did the *Dicoria* seeds appear to have been milled, but the papery wings of the seeds seem to have been possibly burned off. Such burning would result from parching with live coals. The total coprolite assemblage from Bed A is suggestive of year-round, sedentary lakeshore occupation (Wilke 1978). *Dicoria* was also present in three of 12 coprolites analyzed from nearby Bed D and two of 25 samples from Bed B (Wilke 1978; Todd Hannahs, unpublished data). (The coprolite assemblage from Bed B apparently was deposited at seasons other than the winter.)

Although further data are not available, it appears that *Dicoria canescens* ssp. *canescens* was an important winter food in the Coachella Valley in late prehistoric times, and its use probably persisted into historic time as well. The Cahuilla name for this plant is *awk-nish* (Katherine Saubel, personal communication).

*Dicoria canescens* ssp. *clarkae* resembles the previous subspecies, but the seeds are slightly larger, being 5.5-6 mm. long (Munz 1974:156). It is known in archaeological context only from the Last Chance Mountains, which lie west of the northern end of Death Valley about 350 km. northwest of Coachella Valley (Fig. 1). Eureka Valley lies just west of the Last Chance Mountains and the site in question lies only a few kilometers from the impressive Eureka Dunes where *D. c. ssp. clarkae* occurs in abundance. One of us (DeDecker), while on a plant collecting trip,

found a basket in a small rockshelter near the base of the Last Chance Mountains. Although somewhat rodent-gnawed, the basket was in an upright position and still contained a small quantity of *D. c. ssp. clarkae* seeds (Fig. 2). Machine-woven cloth on the base of the basket indicates that it dates from the historic period. Eureka Valley is exceedingly arid, there being no source of surface water except for an ephemeral lake that sometimes forms there and a small spring recently discovered in a canyon draining the Last Chance Mountains. In historic time the valley was not occupied. It was visited by Shoshoni groups from nearby Saline Valley and possibly also Death Valley, who are said to have obtained water from a well dug in the lower end of the valley or may have carried with them supplies of drinking water while gathering seeds of Indian rice grass (*Oryzopsis hymenoides* Ricker) and other species (Steward 1938:79; 1937:105).

The basket (Fig. 3), because of its rarity and documented context, deserves a description. Although it was probably made by one of the Shoshoni bands that utilized Eureka Valley resources, the water bottles of these Indians are practically unknown except from verbal descriptions, and no actual specimen so far as we know has ever been described in publication, so we cannot propose an identification of the piece based upon typology.

It is a pitch-coated twined water bottle, maximum diameter 32.5 cm., with rounded conical base and rounded shoulder. The base is more broadly rounded than those of Owens Valley Paiute bottles, and is woven in sturdy three-strand twining. The angle of flare from the base is about  $68^\circ$  from horizontal. The neck and part of the upper portion are weathered away. There are remains of two carrying loops apparently made of horsehair cordage on one side of the shoulder spaced 13 cm. apart. Next to one of the loops is a break in the basket that appears to have once been mended with a patch sewn on with split willow

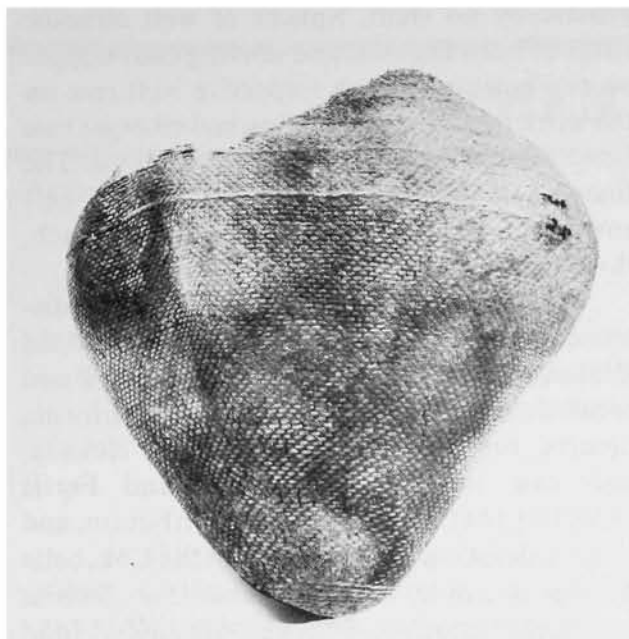


Fig. 3. Basket containing seeds of *Dicoria*, found in the Last Chance Mountains. Courtesy of the Lowie Museum of Anthropology, University of California, Berkeley.

strands. Main construction weave: diagonal twining over two warp sticks with up-to-the-right slant of turns. Supplementary weave: three strand twining on the base and five single spaced rows about 3.5 cm. apart on the upper portion above the shoulder. The materials are probably peeled willow shoots for warp sticks and split peeled willow shoots for weft strands with pinyon pine pitch used for caulking. The pitch is reddish in color, perhaps from addition of powdered red ochre. There is a piece of blue woolen tabby weave cloth adhered to the base. The side held toward the weaver was the exterior, and the work direction was to her right. The starting knot is obscured by pitch but appears to be like the Kawaiisu start: three pairs of warps held together with twining crossed over another three pairs at right angles. Warp additions: butts not sharpened, project about 2 to 6 cm. on the back face. The warp slant is irregular; above the shoulder it is about  $7^\circ$  to the left of vertical, but below there is

practically no slant. Splices of weft strands: stubs of both fag ends and moving ends appear on the bottom of each respective weft row on the work face, and the moving end emerges two warp sticks to the right of each fag end. The fineness of the weave averages 8.0 to 8.5 weft rows per inch (2.6 cm.) and 9.0 warps per inch, thus 36 to 38 weft turns per square inch.

The subspecies of *Dicoria canescens* discussed in this paper are widespread in the Arid West, ranging from northwestern Sonora and southwestern Arizona through the California deserts, north to Churchill County, Nevada, and east into Utah (Abrams and Ferris 1960[IV]:144). In view of this distribution, and in consideration of the data from the Coachella Valley, it would seem probable that *Dicoria* has been a much-overlooked aboriginal food source that was of considerable importance in eastern California and at least the southern part of the Great Basin, as well as regions to the southeast. It would have been particularly important when foods traditionally stored for winter use (such as pine nuts and mesquite beans) were in short supply.

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