

Toloache and archaeology in the border region

Ken Hedges
San Diego Museum of Man

Toloache is a distinctive feature of the botanical and cultural environment of southern California and northern Baja California. The terse, unflattering botanical description of *Datura inoxia* as an “erect or spreading coarse rank-smelling herb” (Munz 1974:830) belies the rich history and sheer beauty of this plant (Figure 1), of ritual and medicinal importance to cultures throughout California, the Southwest, and Mexico.

The name “toloache” derives from the Aztec *toloatzin*, from *toloa*, *datura*, and *-tzin*, a suffix meaning “inclined” or “reverential.” The earliest reference is from the Badianus Manuscript (Figure 2), written in 1542, in which *tolohuaxihuitl* is illustrated with the characteristic spiny fruit, and in a separate illustration with flowers only (Emmart 1940:Fo. 25r, 29r). Also shown (Fo. 29r) is *nexehuac*, a similar plant with smooth fruit that has been identified with *Datura ceratocaula*, a powerful relative of toloache (Emmart 1940:253). In the Florentine Codex, written between 1547 and 1569, two plants, *tlapatl* and *toloa* or *toloatzin*, were identified by early scholars as *Datura stramonium* (Dibble and Anderson 1963:129-130), but current research suggests that the proper identification for *toloatzin* is *Datura inoxia*, to which the modern term toloache is applied. The identification of *tlapatl* is not so certain. Illustrations in the Florentine Codex do not show the fruit of either plant, but the text says, “There are two kinds; the name of still another is toloatzin. And *tlapatl* is somewhat tall [and] its fruit is smooth” (Dibble and Anderson 1963:147). This suggests that *tlapatl* may also be identified as *Datura ceratocaula*, with its smooth fruit.

Depending on local water and soil conditions, toloache is extremely variable in habit: sometimes a small, upright shrub, at other times a straggling vine-like shrub or a dense thicket of branches and leaves forming a large, rounded bush 1 m or more in height. The botanical descriptions are correct in describing the plant as rank-smelling, but under favorable conditions the leaves are a smooth, velvety gray-green, and the flowers are always spectacular. Toloache bears large trumpet-shaped flowers ranging from pure white to a deep purple tinge (Figure 3), or sometimes delicate shades of pink, yellow, or tan. Flowers bloom after sunset, pollinated by a night-flying hawk moth, and quickly wilt in the morning sun. Blossoms are followed by spherical, spiny fruits that split when dry to disperse hundreds of small, kidney-shaped seeds (Figure 4). Toloache is perennial but also sprouts readily from seeds, so that colonies of the plant are persistent, even under the most adverse conditions.

Botanical references struggle to describe the habitat of toloache. Munz (1974:830-831) says, simply, “Sandy and gravelly dry open slopes, below 4000 ft.” Others say protected areas along roadsides, riverbeds, canyon bottoms, beach margins, disturbed areas, and on and on. Personal observations and a review of herbarium specimens show that toloache grows in every imaginable environment and soil type and in every southern California native plant community from coastal strand to montane forest. Clearly, the common denominator that determines where toloache grows has not been determined. This paper is a step in that direction.



Figure 1. Toloache (*Datura innoxia*).

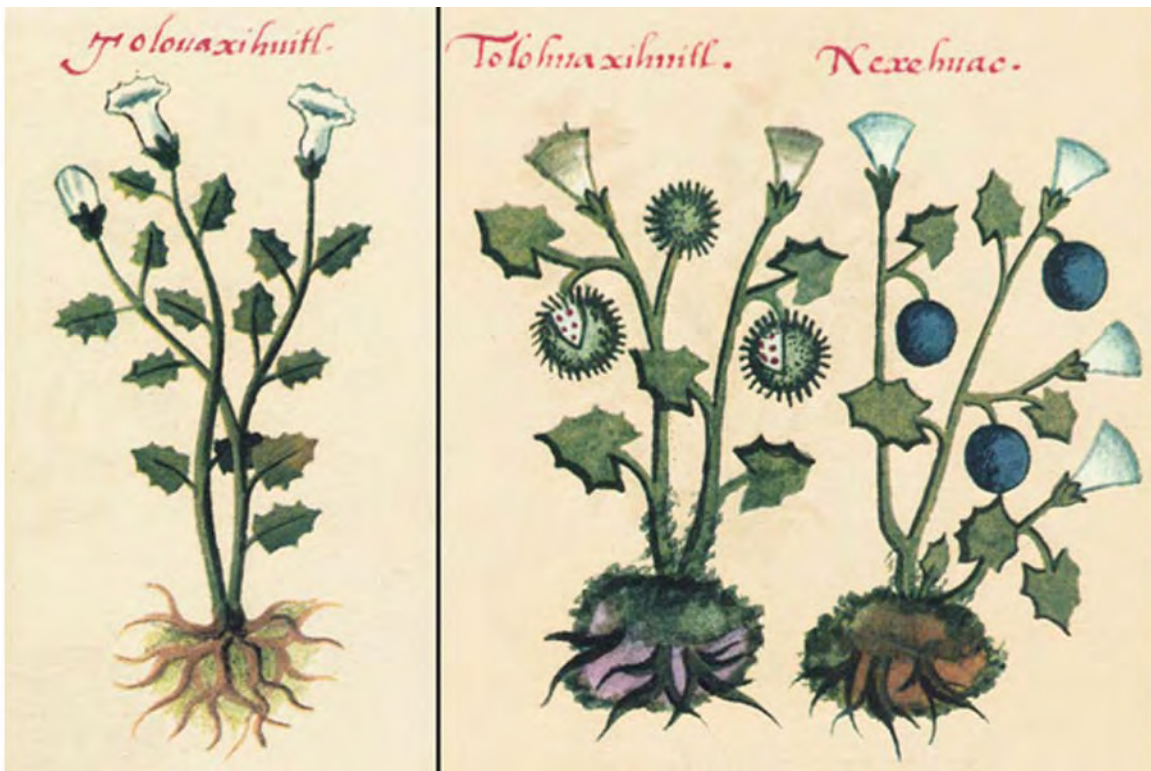


Figure 2. Images of *tolohuaxihuitl* and *nexehuac* from the Badianus Manuscript.



Figure 3. *Datura inoxia* blossom.



Figure 4. *Datura inoxia* fruit and seeds.

Toloache is known by several names in the botanical and ethnographic literature. Most early-twentieth-century sources refer to the plant as *Datura meteloides*, and more recently *Datura wrightii* and *Datura inoxia* have been applied to the plant or identified as closely related species. Current genetic studies confirm that these all represent a single species, and that *Datura inoxia* takes precedence as the earliest name, first applied in 1786. Common names for *Datura inoxia* include toloache, sacred datura, thornapple, and many others. The commonly used “jimsonweed” should not be used, since it is specific to *Datura stramonium*, the “Jamestown weed” of the eastern United States.

Datura inoxia grows throughout most of Mexico and south to northern South America. In the United States, it occurs from north-central California to the Mexican border and throughout the greater Southwest and Great Basin, including Nevada, Utah, southwestern Colorado, Arizona, New Mexico, Texas, and parts of eastern Oregon and Idaho (Munz 1974:831 and personal observations by the author). Although normally cited as a low-elevation plant growing below 4,000 ft., toloache occurs at higher elevations throughout its range. In Arizona, for example, it can be found almost anywhere below the Mogollon Rim, but is also widespread on the Colorado Plateau, from Holbrook at 5,000 ft. to Canyon de Chelly at 5,300 ft., Wupatki at 6,300 ft., and Flagstaff at 7,000 ft.

Beginning with the early Aztec references, toloache is cited as a medicinal plant used to treat a variety of illnesses, from fever and headache to gout and rheumatism (Dibble and Anderson 1963; Emmart 1940; Schultes and Hofmann 1979:109). In southern California, the primary medicinal use involved crushing the leaves to make a paste or ointment applied as a general pain killer, for pain and swelling in broken bones, for toothache, and for headache. The plant was also boiled to make steam for treating respiratory ailments, and an infusion might be administered as a painkiller when setting fractures (Bean and Saubel 1972:61-62).

Toloache is perhaps better known for its hallucinogenic properties, and is universally regarded as a powerful, dangerous plant that, if not administered properly, will cause delirium and death. Among the Aztec and many other cultures of Mexico, datura is regarded as an evil plant used by sorcerers, in addition to its more controlled uses in ritual and divination, as noted by Sahagún (Dibble and Anderson 1963): “He who eats it will no longer desire food until he shall die. And if he eats it moderately, he will forever be disturbed, maddened; he will always be possessed, no longer tranquil.” In the Southwest, toloache is used to achieve altered states of consciousness for divining the source of illness, to aid in hunting, and, for the shamanistic Zuni rain priest society, to contact the spirit world and to commune with the spirits of the dead, who intercede for rain (Schultes and Hofmann 1979:110-111).

The most intensive use of toloache occurred in California, where cultures from the Yokuts of the southern Sierra Nevada to the Kumeyaay of northern Baja California used the plant in elaborate boys’ initiation ceremonies. The root of toloache was pounded and placed in water to make an infusion administered to create altered states of consciousness, giving the initiate access to supernatural power and a spirit helper that would stay with him for life. Our most vivid description of the experience is Boscana’s 1822 account (Boscana 1933:45-46) from the Juaneño of San Juan Capistrano:

The poor Indian thus intoxicated, without food or drink, suffering under delirium, beheld all kinds of visions; and when he made known that he had seen any particular being, who explained the observances required of him, then they gave him to eat and drink, and made a grand feast; at the same time advising him to be particular in obeying the commands of the mysterious apparition.

This apparition was said to be an animal of most terrible description.

The Kumeyaay observed attenuated versions of this ritual. At Mesa Grande, “during this sleep or unconsciousness they are expected to have a vision or dream which is to be important for them in their future life. This vision often takes the form of a dream about some animal” (Waterman 1910:296). At Campo, the toloache caused altered perceptions: “Near dawn I woke and looked about, but everything was strange.... I gazed at the fire; it appeared blue; the people about it looked red.” The initiate described his helping spirits: “When I drank the jimsonweed, I saw the horned owl (*a’u’*) and the raven (*xatai’*) in a trance.... These two looked like men, as we believe them to be” (Spier 1923:319-320). Near the Mexican border,

During a “dream” condition of forty-eight hours induced by the administration of toloache, the Diegueño [Kumeyaay] doctor-initiate obtains an animal guardian spirit and receives songs, cures, knowledge, a sexual name, and magical paraphernalia. He also has a conventional dream ... in which he puts his arms around the world and “sees everything in it”.... The guardian spirit of the Diegueño doctor is an animal—that of our informant was a mountain lion [Toffelmier and Luomala 1936:197-198].

Toloache is used principally for initiating young doctors: “Our informant stated, ‘Toloache puts you into a kind of a dream state of mind that stays with you for the rest of your life, and you never forget what you learned’” (Toffelmier and Luomala 1936:201) Among northern Baja California Kumeyaay in the 1950s, the boys’ toloache initiation was remembered, as was the process of preparing of the plant, but without specific details of the ceremony. A shaman, however, received his first indication of power through a spontaneous dream, after which he would fast and take toloache for three days and wait for a confirming dream. Thereafter, he could take toloache “with impunity” (Hohenthal 2001:207, 253-254, 281). In all other Kumeyaay accounts, toloache is taken only once during a lifetime, though a gambler sometimes would keep a small morsel in his mouth for good luck when playing peon.

One of the first associations recognized throughout its range is the frequent occurrence of toloache at rock art sites, whether from Archaic painting sites of the Pecos River in Texas, Basketmaker and Pueblo paintings of Canyon de Chelly in Arizona, late Archaic petroglyphs of Pahrangat Valley in Nevada, Patayan petroglyphs at Gillespie Dam in Arizona, petroglyphs at Arroyo de los Monos in Chihuahua, polychrome paintings at Brownstone Canyon, Nevada, or any one of hundreds of sites where this association has been noted.

In south-central California, many researchers have noted the association between intense ritual use of toloache and the dramatic polychrome paintings of the Yokuts and Chumash, beginning with Kroeber, who wrote that

the cave paintings of the south, therefore, represent a particular art, a localized style or cult.... Since these paintings farther fall well within the region of the toloache religion, in fact their distribution coincides fairly closely with the area in which this religion was the strongest, and since its cult was in certain tracts worked out in visible symbols such as the sand painting, an association with this religion is also to be considered [Kroeber 1925:938].

In 1977, Thomas Blackburn noted the close correspondence between Chumash rock art elements and the visual designs seen in altered states of consciousness.

In Kumeyaay sites both north and south of the border, this strong association between rock art and toloache is self-evident. Many believe that rock art may reflect the visions seen

while under the influence of toloache, descriptions of which include supernatural animals, animals in human form, altered colors and other perceptions, spirit beings, geometric designs in various colors, and other images of non-ordinary reality. Motifs at some Kumeyaay sites are consistent with this interpretation, even though ethnographic confirmation is lacking.

It is also evident that toloache frequently occurs on archaeological sites in our area. This general association has long been noted, and serves as the starting point for an informal investigation undertaken more than two decades ago but continued only on an intermittent basis. The data are anecdotal but highly suggestive. As noted above, botanical descriptions are vague about the growing conditions of *Datura innoxia*, but it is not limited to any particular soil type, plant community, or elevation. Frequent statements refer to disturbed or protected or well-watered areas along roadways, implying that toloache is a roadside weed. True roadside weeds, like Russian thistle, telegraph weed, wild mustard, broom baccharis, and many others, occur extensively and continuously along roadsides in areas where they become established. Even a cursory awareness as you drive along any road in the region reveals that the distribution of toloache is neither continuous nor random. In fact, it appears that toloache occurs along roadsides in localities where those roads intersect archaeological sites -- an hypothesis that this brief analysis attempts to address.

The following discussion is based on notes for over 125 specific observations made for roads selected at random throughout San Diego County. The sample is obviously biased toward toloache growing along roads, but efforts were made to examine off-road examples whenever they were noted, and I would also point out that efforts to note all observed occurrences also means that all intervening areas are localities of negative evidence. Observations in northern Baja California have not been specifically documented but appear to follow similar patterns. The sample can be grouped into three categories:

In areas above 4,000 ft., toloache occurs at elevations as high as 6,000 ft. on Mount Laguna, 4,700 ft. at Cuyamaca Lake, and 5,200 ft. on Palomar Mountain. In all mountain occurrences of toloache the plant is associated with archaeological sites with one exception near Julian, where toloache was noted along a fence line for which no permission was available for access. Just inside the fence is an active spring and bedrock outcrops, a type of location that almost certainly would show signs of aboriginal use.

In the area from the inland margin of the highly disturbed coastal zone to the purported elevation limit of 4,000 ft. for *Datura innoxia*, sites often show disturbance but are amenable to inspection, and the great majority of examples show a direct correlation between toloache occurrences and archaeological sites. In this area, future research is needed to examine specific occurrences for archaeological evidence, and/or to match toloache distribution with current site records.

Near the southern California coast, virtually all areas have been subjected to surface alteration, development, highway construction, stream channelization, and other modifications of the landscape such that original landforms are seldom available for inspection. Nonetheless, evidence of the pattern persists in many areas, as shown by the following examples.

In San Diego's Mission Valley, toloache frequently occurs along fence lines, freeway margins and traffic islands in the localities of highway interchanges. These highways follow natural lines of access through side canyons, with interchanges located on benches formed by the deltas of the canyon drainages. These locations provided favorable localities for habitation, and early site records document the presence of archaeological sites on these benches, marked today by the persistence of toloache and little else.



Figure 5. *Datura inoxia* growing on an archaeological site in Spring Valley, California.

In El Cajon, toloache persists today along fence lines and concrete drainage channels at the southeast margin of the Parkway Plaza shopping center, which is situated on the site of an old village location along Forester Creek, now confined in the concrete channel. Recently, all mature toloache plants were removed in landscape maintenance, but the plants immediately began to reestablish themselves.

In Spring Valley, toloache occurs in the landscape planters on the east margin and in a disturbed lot on the opposite west side of a freeway (Figure 5). At this location, which is also marked by a remnant spring, archaeological survey for the freeway revealed small Kumeyaay sites with artifacts and shell. A short distance to the south, toloache grows today just beyond the southern margin of a second archaeological site locus.

As a further test, I examined a site located on a bench adjacent to a tributary of Chollas Creek in the Encanto district of San Diego. This site, test-excavated in the 1950s by the Museum of Man, was for many years the only known archaeological site in this urbanized area. Over the years, the bench was first modified by the construction of a railroad, then by residential housing and warehouses. Recently, the entire surface south of the railroad tracks was completely removed and the stream was completely channelized. Today a new post office occupies the west half of the graded area. The only remaining vacant lot today is home to one of the largest colonies of toloache I have seen in San Diego, and close inspection revealed a single small plant at the opposite end of the former occupation site.

And finally, in Baja California, toloache is frequently observed as you drive on the old highway from Tijuana to Rosarito and beyond. This has not been formally documented, but virtually every occurrence is at an easily identified midden deposit with dark soil, high shell content, and lithic artifacts. For these and other sites along the coast, it is interesting to note that

toloache occurs even on sites ascribed to the ancient La Jollan culture. This indicates that these sites may have unrecognized Late Prehistoric components, or that toloache has been part of local cultural patterns for a very long time.

These observations suggest that toloache grows only on sites of former aboriginal use or habitation; occurrences at historic ranches, old house sites, and similar locations mark places where these historic remains occupy locations of former aboriginal occupation. The apparent association with human habitation is consistent with the opinion of some botanists that *Datura inoxia* originated in Mexico and was gradually introduced into the greater Southwest in pre-Columbian times. Whether it was spread through deliberate transportation and planting or simply arrived as a consequence of human interaction and the spread of cultural ideas and practices is impossible to determine, but it is interesting to compare the comments of botanist M. L. Bristol (1966) about the related tree daturas of South America:

Many writers have noticed the frequency with which the tree-Daturas are associated with human habitations, but the extent of this association and its implications have not been fully understood. I have seen no indication ... that any tree-Datura was not associated with human activity; and Schultes (pers. comm) ... has never seen a tree-Datura that he could say was truly wild.

Whether *Datura inoxia* is truly wild is not easily determined, but it appears that, at least in southern California, it seldom spreads beyond areas of former aboriginal human habitation on its own accord. When observed in seeming isolation, the location should be closely examined for signs of aboriginal use or occupation. It may be hard to find, but it is quite likely to be there.

By way of acknowledgement, I would like to note that this idea originated with Ila Álvarez, who, more than three decades ago, pointed out to me that toloache seemed to grow only on archaeological sites as we visited several such locations in the city of Ensenada.

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