VII. BITE-MARKS IN TULE QUIDS OF PREHISTORIC NEVADA INDIANS

Christy G. Turner II
Department of Anthropology
Arizona State University
Tempe, Arizona

Abstract

Nineteen per cent of a sample of 345 tule quids from Lovelock Cave, Nevada, show bite-marks; of these, eight quids had impressions sufficiently distinct to provide information on age and dental conditions. Use of quids is suggested as a secondary (and novel) means of obtaining prehistoric dental data in the absence of actual skeletal remains.

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Quids are common refuse items left by prehistoric Indians in dry cave habitation and camp sites throughout the Southwest culture area, which includes Arizona, New Mexico, Utah, southern Colorado, southern Nevada, and northern Mexico. Various dated specimens occur from prior to A.D. 1 to later than A.D. 1500. Quids are the fibrous residue from chewing leaves, stems, shoots, roots, or stalks of yucca, mescal, tule, cactus, maize, grasses, and numerous other common native leafy or pulpy plants. Indians probably chewed the plant parts chiefly to extract juice and sugar, although tobacco has been found in the cores of some prehistoric quids (Jones and Morris 1960:40,116). Quids may also represent a stage in the preparation of some kinds of cordage (Jennings 1957:226). In addition, toothache may have been relieved by chewing parts of such plants as yarrow (Achillea lanulosa Nutt.), the green leaves of which are said to have been used by some Paiute and Shoshone Indians of Nevada for this purpose (Train et al.1941:31).[1] Some value should be attributed to quids as a tooth-cleansing mechanism. Bite-marks in quids have been previously noticed; the earliest published Southwest reference reporting quids with tooth marks known to me is that of Pearce and Jackson (1933:132), who relate their archeological findings from a Texas dry cave site.

In 1965, Robert F. Heizer and students of the University of California, Berkeley, working at Lovelock Cave in northwestern Nevada—a site previously

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[1] See p. 122 for end notes.

examined by L. L. Loud and M. R. Harrington (1929)—found, among other items, an abundance of tule (desert bulrush, Scirpus sp.) quids from two locations at this site.[2] Both lots of quids are presumably chiefly, if not entirely, prehistoric. Dental impressions occur in the Lovelock Cave quids from both locations. There is no significant difference in the two lots with respect to quids with or without recognizable bite-marks:

Provenience	Quids with bite-marks		Quids without bite-marks		Total
	No.	Per cent	No.	Per cent	
No. 154	57	20.6	219	79.4	276
No. 422*	12	17.4	57	82.6	69
Total	69		276		345

* Level II, Cache

The range of leaf or stalk reduction in both lots is about equal; namely, from that of a simple initial wadding of the tule leaf or stalk (pl. 1) to that of a highly pulverized and intermixed fibrous state (pl. 2). Color ranges from brown to yellow-brown and varies about the same in both lots; both contain burned and scorched quids in similar proportions. Bite-marks occur most frequently and most clearly on quids that seemingly had been chewed the greatest amount of time. These are often coated with a dried and adhering mealy film. Quids without clear bite-marks are more fibrous, and were probably chewed for shorter periods of time. Quid size varies from three to five cm in length; one to three cm in width; and the thickness is generally less than one cm.

Bite-marks. Nineteen per cent of all quids retain recognizable negative impressions of the Indians' last bite before the quid was discarded on the cave floor. Positive casts were made from the quids by pouring water-based alginate impression material ("Supergel") into the fibrous cast (pl. 3). This does essentially no harm to the quid, whereas rubber-based impression material is impossible to separate from the untreated dry quid without tearing and causing serious damage. Eight of the 69 quids with impressions have dental features sufficiently distinct to provide useful information about their chewer's teeth and age. (Individuals can be recognized by their distinctive bite-marks in food, and such identifications have been used in court trials, Strom 1963.) The quids were held and last impressed in the Indian's mouth with the bulkier side of the quid toward the cheek. Left and right sides of mouths are represented about

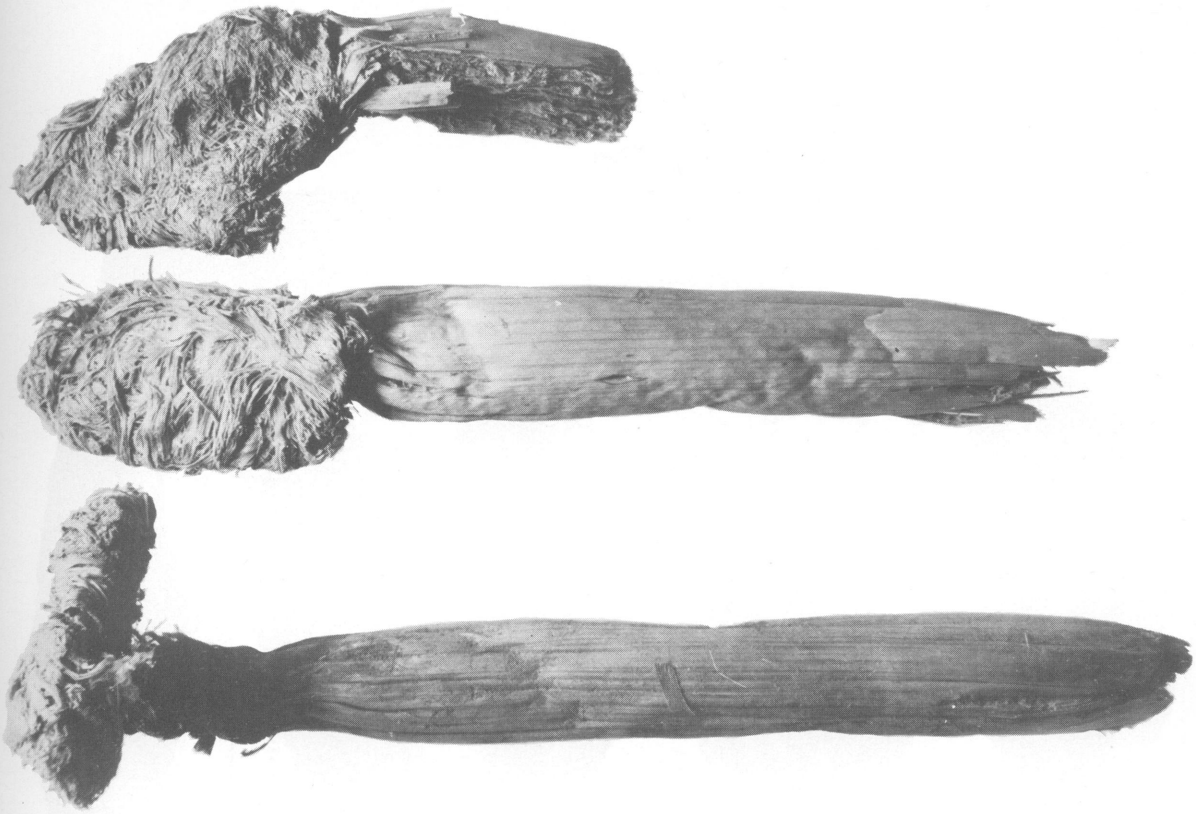

Plate 1. Chewed ends of tule stalks, illustrating a possible process in the reduction of stalks to discrete quids

Plate 2. Discrete quids with negative bite-marks of varying clarity

Plate 3. Positive alginate casts from tule quids

equally. Advanced tooth wear is a characteristic of these Indians. There is no evidence of dental caries.

Most important to physical anthropologists is the record of molar cusp numbers and the chewer's approximate age. Cusp patterns cannot be discerned. Table 1 lists information from the eight best bite-marks. One quid was apparently chewed by a child; the other seven were chewed by young and old adults. Another quid has an impression of a second lower molar with six cusps.

The potential importance of quids is that they provide an indirect and novel means of obtaining phenotypic and pathological data for dental studies of prehistoric Indians in the absence of actual dental remains.

TABLE 1

Dental Impressions in Tule Quids from Lovelock Cave, Nevada

Quid No.	Teeth Represented	Crown Features	Wear*	Probable Age†
1	Right maxillary premolars, 1st & 2nd molars	Premolars have usual two cusps; 1st molar has four cusps	Advanced	Adult
2	Right maxillary premolars, 1st & 2nd molars	Premolars have usual two cusps	Advanced	Adult
3	Right mandibular premolars, 1st & 2nd molars	--	Advanced	Adult
4	Left mandibular premolars, 1st & 2nd molars	--	--	--
5	Left mandibular 1st & 2nd molars	Second molar has six cusps	Slight	Young adult
6	Right mandibular 2nd premolar, 1st & 2nd molars	Second molar has five cusps	Moderate	Adult
7	Deciduous canine and molar	--	Advanced	Child
8	Left maxillary 2nd premolar, 1st & 2nd molars	--	Moderate	Adult

* Advanced = cusps almost entirely worn away; monderate = separate cusps can be easily discerned; slight = cusp apices sharp and well defined

† Age inferred from wear except in case of child

Notes

1. F. H. Elmore (1943:79-80) notes that tule or bulrush (Scirpus acutus) was mixed with yarrow and a number of other plants by the Navajo Indians of Chaco Canyon, New Mexico, to concoct a universal tonic or "life medicine." This mixture of herbs was kept on hand and taken along on journeys.

2. G. L. Grosscup (1960) recently examined the Harrington Collection from Lovelock Cave at the Museum of the American Indian, New York, but makes no mention of quids or other forms of food or fabricational refuse.

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