IV. A MESCAL KNIFE FROM NEAR OVERTON, MOAPA VALLEY, SOUTHERN NEVADA

Robert F. Heizer

In December, 1969, my son Michael found imbedded in a ratnest in a low horizontal crevice on property owned by him about 5 miles northeast of Overton, Clark County, Nevada, an unusual mescal knife. The low crevice was apparently not occupied, and the knife was probably cached there by some Indian within the past century with the aim of later recovery and use. The knife is described here and notes on ethnographic usage and other archaeological examples are provided.

The handle of the knife (Fig. 1a) is a section of mesquite wood branch 24 cm. long and 3.5 cm. in diameter. The ends, somewhat rounded, are rough and the wood appears to have been cut with a rough chopping tool such as a stone cleaver or ax. Nothing which can be interpreted as cutting marks of a steel knife or ax are in evidence. The unusual feature of this mescal knife is in its having one stone and one iron cutting blade, both of which are set in line with the run of the handle opposite each other. The stone blade, of mottled yellow-brown flint, is set in an oval socket filled with dark brown pitch. The socket is 6.0 cm. long and 3.0 cm. wide. The exposed blade is 4.0 cm. wide, 2.3 cm. long, and 1.0 cm. thick in the center. The cutting edge is sharp and unabraded.

Opposite the stone blade is a metal one, similarly socketed, and held by a pitch mastic which is somewhat lighter in color, and fills the socket more evenly than the pitch holding the stone blade. The iron blade is 3.5 cm. wide, 2.0 cm. long, and 4 mm. thick. All three visible edges are ground down to a sharp edge, the only difference being that the forward edge is slightly convex and the side edges are straight. One has the distinct impression that the iron blade has been set in the handle at a later time than the stone blade. It is possible that originally the tool had two flint blades and that one was replaced by the blade of iron.

Other archaeological mescal knives are on record for the Overton area. Harrington (1942) describes a double bladed knife (Fig. 1b) found near Logandale which lies a couple of miles north of Overton in the Moapa Valley. This specimen, except for having both cutting blades of flint and roughly cut grooves around the shaft at each end, is practically a duplicate of the specimen presented here. Nothing is known of its occurrence, but the fact that it bears two stone blades encourages one to think of it as dating from pre-contact times. Harrington (1930:120-121) recovered a complete mescal knife from Paiute Cave, about 1.5 miles south of Overton. The simple wooden handle has

an iron blade seated in pitch (Fig. 1c). Harrington believes the specimen to be of Paiute manufacture. Another mescal knife (Fig. 1d) with an iron blade found in a rockshelter 3.5 miles southeast of the former town of St. Thomas, Clark County, is described and illustrated by Baldwin (1944). A second and similar specimen from a nearby shelter is described but not illustrated by Baldwin (op.cit). Both of these knives are associated with identifiable artifacts of Paiute manufacture.

Other archaeological examples have been recovered from northwestern Arizona, not far to the southwest and across the Colorado River from the Overton area. Fewkes (1898:571) illustrates a complete mescal knife (Fig.1e) with a single ground stone cutting blade which he recovered from a depth of 3.0 feet in a room at the Pueblo site of Honanki on Lower Oak Creek, south of Flagstaff. It is undated, but Fewkes believes the site to have been abandoned before the beginning of the historic period. I am indebted to G. Metcalf, Supervisor, Processing Laboratory, Department of Anthropology, USNM, for providing me with details on this specimen. Bartlett (1934:18-19) describes and illustrates a complete mescal knife from Medicine Cave (site N.A. 863) with a single flint blade (Fig. 1f). Like the Logandale knife (Fig. 1b) it bears an encircling groove near each end. Bartlett is uncertain of the age of the Medicine Cave specimen, but believes that it is either of Pueblo II or Yavapai manufacture.

Other mescal knives are reported to have been found near Alpine, Brewster County, Texas (Bartlett 1934:19; Harrington 1930:121). The only published Texas example seems to be the specimen illustrated by Martin (1939:80, Pl. XXXIII) which has a flaked flint blade set in an excavated socket and held with juagilla gum (Fig. 1g). The blade is reinforced by two parallel-laid twigs which are bound to the handle. This piece was recovered from Shumla Cave, Val Verde County, Texas. Two unusual examples of what may be a double-bladed mescal knife from Carved Rock Shelter, Sunny Glen Canyon, near Alpine, Texas collected by Victor J. Smith are described and illustrated by Sayles (1941:Pl.29, Fig. 2). A section of oak limb 31.5 cm. has a longitudinal slot cut through it from both sides and into this is inserted a round-based chert blade which is held in place by wedges of yucca stalk (Fig. 1h). This is the only known double-bladed mescal knife reported from Texas. The circumstances of their occurrence suggest that they are fairly recent.

The presently known archaeological distribution of this distinctive form of mescal knife thus ranges from Brewster and Val Verde Counties, Texas in the south to the Moapa Valley in southern Nevada in the north. Some examples may be prehistoric, as judged from their bearing stone cutting blades; others are clearly of historic manufacture, and are attributed with some probability to Southern Paiute manufacture. A number of tribes (Southern Paiute, Yavapai, Maricopa, Mohave) are reported to have used this form of mescal knife, but we are quite uncertain how ancient the form is since

the archaeological examples are undated.

The wide natural distribution of "mescal", a term used in a general way for a large number of species of century plant, Agave, which grow from 1000 to 5000 feet above sea level in the Sonoran and Transitional life zones (for distribution of species see Castetter, Bell and Grove 1938:13-27), and its wide recognition by native peoples as a food resource accounts for the wide occurrence of mescal pits in which the plant was roasted to make it edible. Castetter, Bell and Grove (1938:Fig. 4) and Greer (1965:Fig. 5) have mapped the distribution of such pits in the stretch between west Texas and southern California. Such pits are common in southern Nevada, the area which has produced a number of mescal knives, (Shutler and Shutler 1962: 22-23), Arizona (Baldwin 1944) and Texas (Greer 1965:Fig. 5; Castetter, Bell and Grove 1938:Fig. 4).

The mescal plant was cut off at its base with a sharp-edged or chisel-pointed tool made of hardwood which was pounded with a stone (Spier 1933:55; Spier 1928:105-106). The thorny-edged leaves were then cut off with a mescal knife (perhaps better termed "mescal hatchet" by Spier 1933:55) and the remaining crown (also called the "heart" or "cabbage") was baked. The baking was done in a dug pit in which stones were laid, and on which a fire was built. The mescal cabbages were then laid in the pit on the heated stones, covered with a layer of grass, topped with a layer of earth and allowed to cook (actually steam) for from 24 to 48 hours. This method of gathering and roasting is widespread in the Southwest, and is reported for the Maricopa, Havasupai, Jicarilla, Mescalero, White Mountain and San Carlos Apache, Navajo, Southern Paiute, Pima, Cahuilla and Huichol (Spier 1928:119; Spier 1933:55-56), the Paipai, Cocopa, Kiliwa, Papago, Diegueno (Castetter and Bell 1951:202; Henderson 1951; Greer 1965), the Yavapai (Gifford 1932:206-207), the Walapai (Mekeel 1935:49, 52-53), the Cochimi, Concho, Jumano, Sonora, Sinaloa, Culiacan and unnamed tribes of Nuevo Leon, Jalisco and Mexico in Mexico (Beals 1932:164).

The mescal knife or hatchet with a wooden handle and flint blade set in the center is a form which will be preserved archaeologically only rarely. How widely such implements were used in prehistoric times can probably be determined only by identifying the flint blades found in open sites. Kowta (1969:55) discusses the implemental assemblage used for the collection and preparation of Agave and this is a first step toward our understanding of the technological complex associated with the prehistoric utilization of this important food plant.

Explanation of Illustrations

Figure 1. Mescal knives from Nevada, Arizona and Texas. For location and description of specimens see text.

Figure 2. Infrared spectra of pitches (KBr pressed plates).

a. Spectrum of pitch holding iron blade;
b. spectrum of pitch holding stone blade.

Plate 1. Mescal knives from Southern Nevada and Texas.

a-c From near Overton, Clark Co., Nevada
- a. profile
- b. stone blade
- c. iron blade

d-e From west Texas (site unknown). Specimen in Sul Ross College Museum, Alpine, Texas. Mus. No. SR 1058A. By permission of the Director.

TABLE 1

Archaeological mescal knives

	1	2	3	4	5	6	7
Handle length	24.0 cm.	24.3 cm.	21.7 cm.	23.0 cm.	22.8 cm.	31.6 cm	33.6 cm.
Handle diameter	3.5 cm.	3.3 cm.	4.5 cm.	4.5 cm.	4.5 cm	3.7 cm.	4.2 cm.
Number of cutting blades	2	2	1	1	1	1	1
Material of cutting blades	1. Iron 2. Flint	1. Flint 2. Flint	Iron	Iron	Iron	Basalt	Flint
Material of handle	Mesquite	Willow(?)	Mesquite(?)	Mesquite	?	?	Oak(?)
Treatment of handle	Plain	Grooved near each end	Plain	Tapered ends	Plain(?)	Plain	Grooved near each end

1. From 5 miles NE of Overton, Clark Co., Nevada (Fig. 1a).
2. Near Logandale, Clark Co., Nevada (Fig. 1b).
3. Paiute Cave, Clark Co., Nevada (Fig. 1c).
4. Near St. Thomas, Clark Co., Nevada (Fig. 1d).
5. Near No. 4, Clark Co., Nevada (Baldwin 1944:331).
6. Honanki Ruin, Arizona (Fig. 1e).
7. Medicine Cave, Arizona (Fig. 1f).

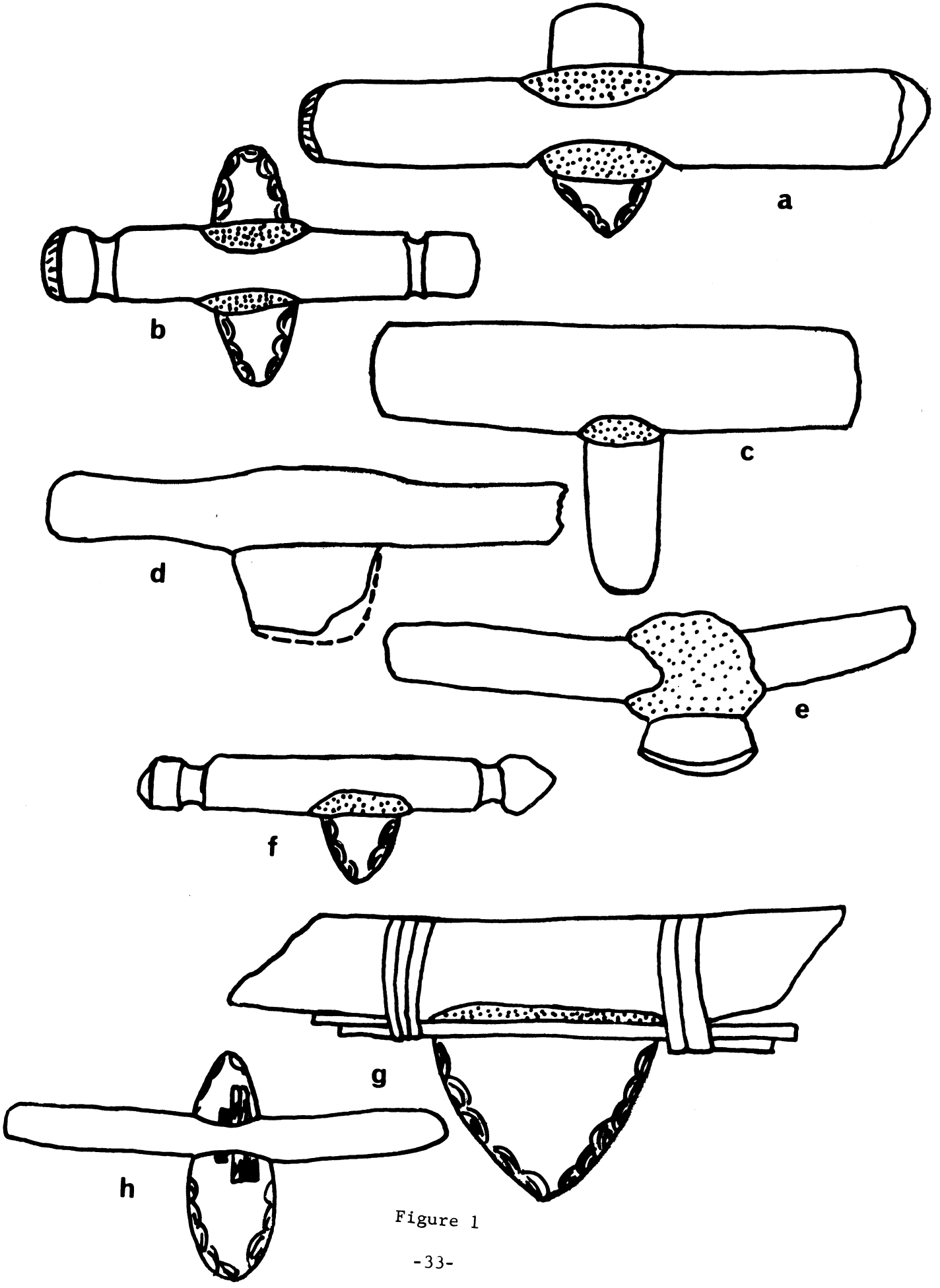
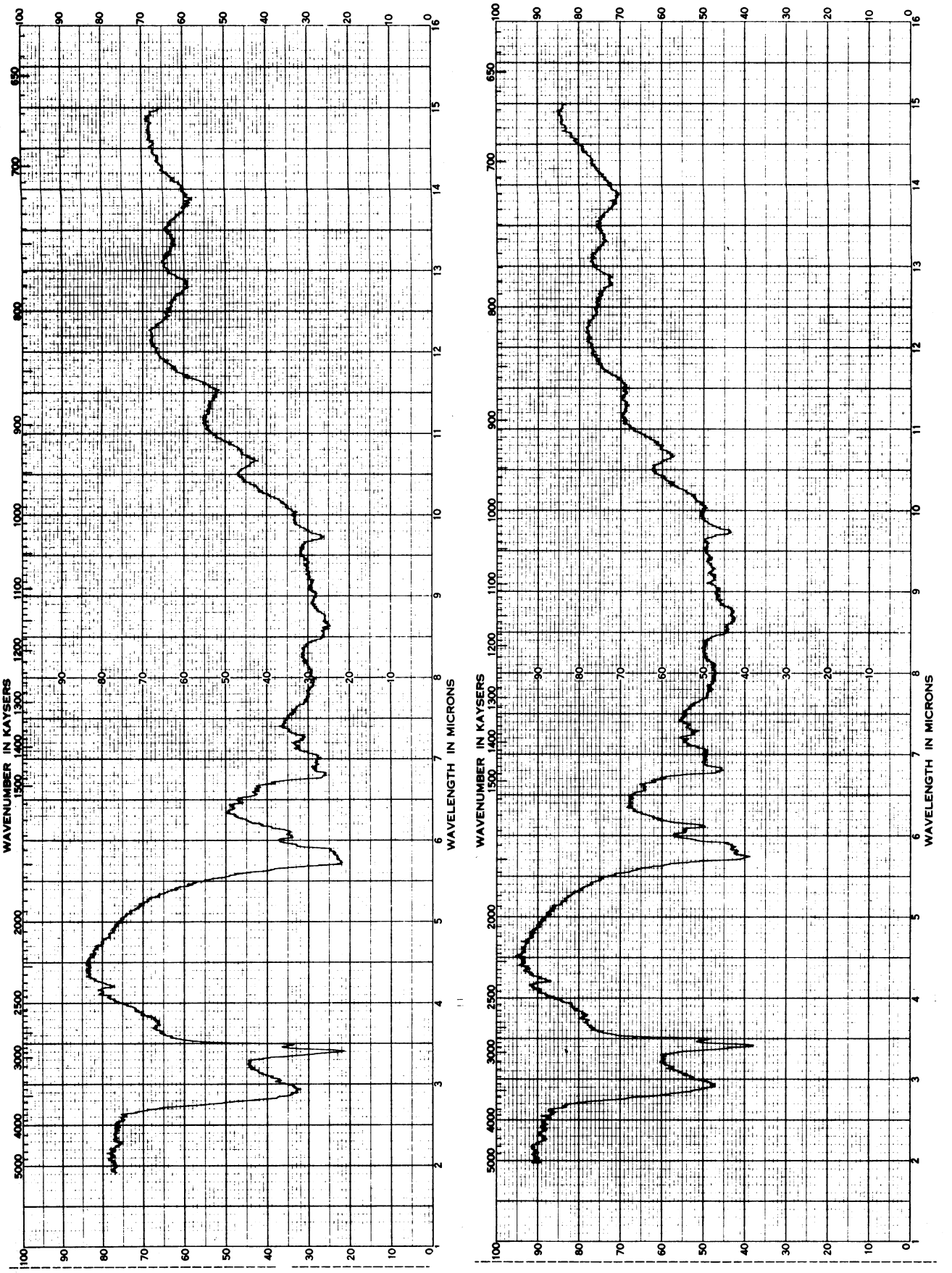
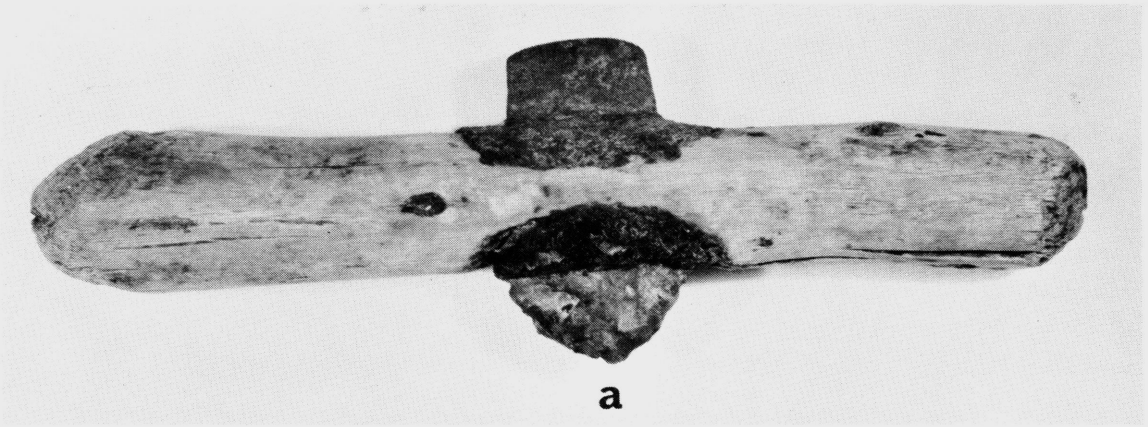


Figure 1


WAVENUMBER IN KAYSERS
WAVELENGTH IN MICRONS
WAVENUMBER IN KAYSERS
WAVELENGTH IN MICRONS

a b

Figure 2



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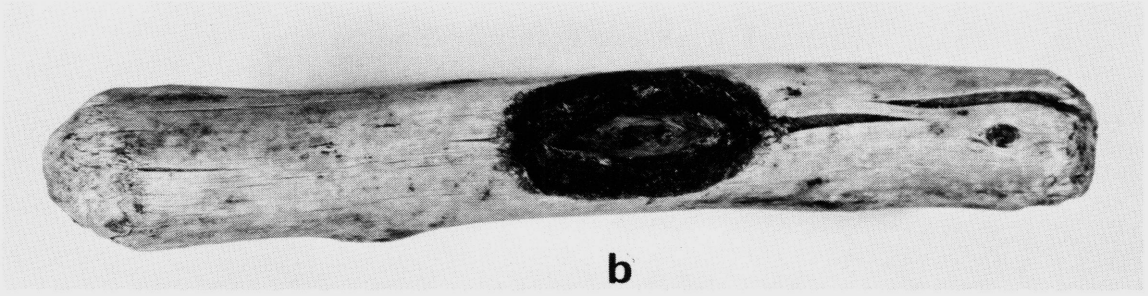

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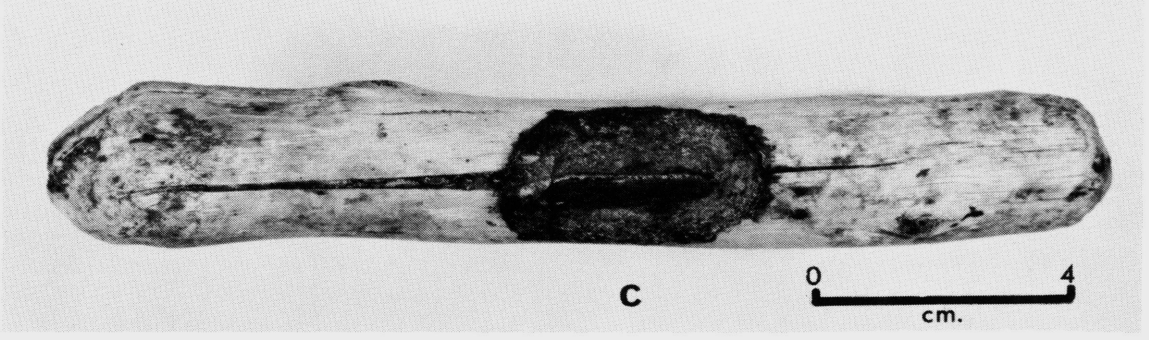

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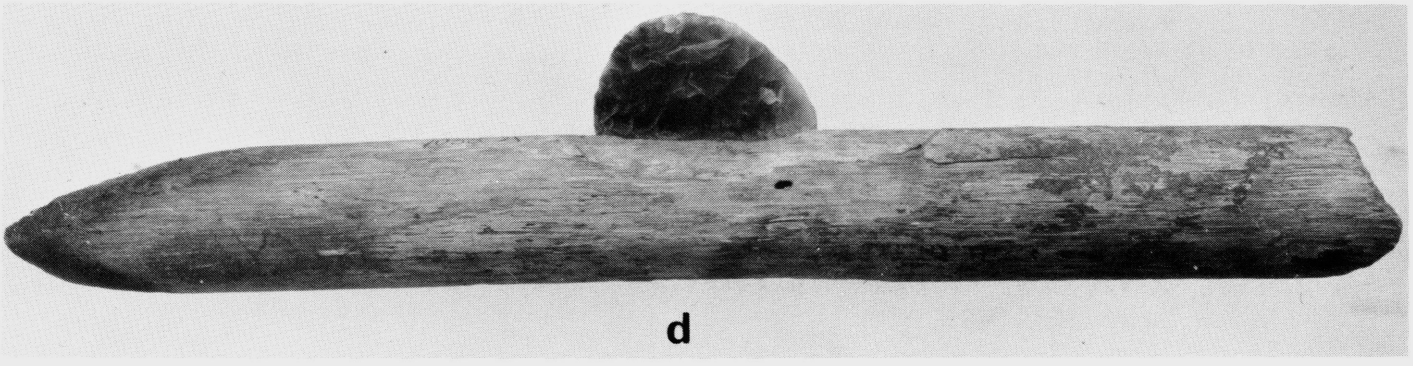
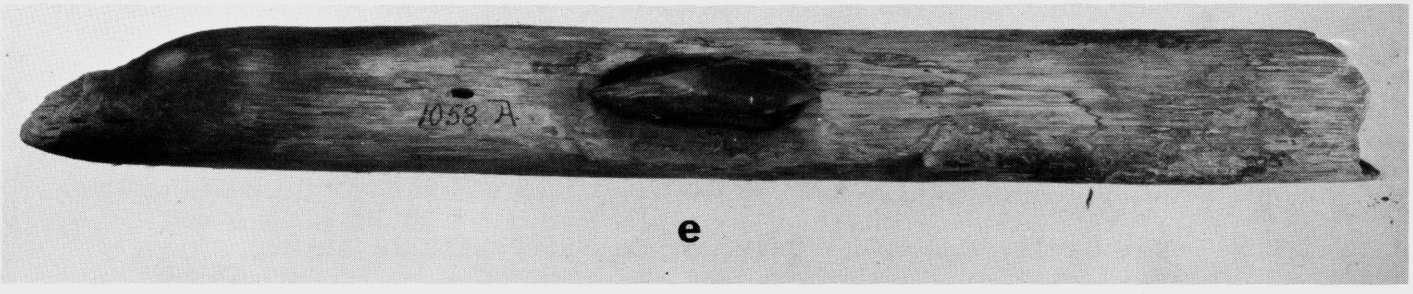


d



e

Plate 1

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APPENDIX 1. Analysis of pitch samples

Fred H. Stross

Two samples of pitch, one from the filling of the excavation holding the stone blade and the other from the gum holding the iron blade of the mescal knife shown in Pl.1a-c were analyzed by infrared spectroscopy.

The two pitches showed visual differences, that holding the stone blade being dark brown and that holding the iron blade being lighter and reddish in tone. The analysis was made to determine if the two gums or pitches were different or the same.

The samples were ground in KBr and formed into pressed plates for infrared spectroscopic analysis. The spectra were obtained in the region of 2 microns to 15 microns with a Beckman Model IR.4 spectrophotometer. The spectra show the two samples to be identical. Fig. 1a is the spectrum for the pitch associated with the iron blade; Fig. 1b is the spectrum of the pitch holding the stone blade. These spectra are quite similar to those of ancient and modern pitches from Nevada published earlier[1], but there are enough small spectra differences to indicate that the pitch of the mescal knife from near Overton comes from a different tree. Identification of the source of the pitch could probably be made by analyzing tree resins from this area of southern Nevada.

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[1] A. C. Jones, J. R. Weaver and F. H. Stross. Note on Indian Wood Carving in the Form of a Grasshopper Found in Lovelock Cave, Nevada. Univ. of Calif. Arch. Survey Report No. 70:123-128, 1967.