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over a skull.

In 1877, the Reverend Stephen Bowers recorded two copper vessels among the aboriginal artifacts excavated at Goleta (near Santa Barbara). These may have been from the historic village of *Saspilil* (Wilcoxon, personal communication).

Articles of "white manufacture" from Santa Cruz Island were cited by Rogers (1929:312, 320); these include glass beads, and artifacts of iron and copper. Also, in deep gorges on the island he found small camp sites that featured bits of cloth, rusty iron fragments, glass beads, brass buttons, and bottle fragments. Rogers (1929:341) suggested this evidence could indicate that the islanders may have been attempting—in historical times—to isolate themselves in the interior portions of the island.

Clearly, such exotic items were considered to be objects of special power by indigenous populations who placed them in graves as either offerings to the dead or as prized possessions of the deceased.

It is assumed that the sword grip originated in either Mexico or Spain. The double outline around the front legs of the lion is a stylistic tradition, diffused from the Near East, which was common in Europe from Romanesque times onward. This would fit in with a Spanish origin, as much Near Eastern influence can be seen in Spanish art and artifacts. It is difficult to say if the design reflects a time period or merely a workshop unaware of the latest stylistic changes, or an heirloom design. Obviously, any Mexican workshop would have been heavily influenced by Spanish designs. The palmette motif above the stud hole is too widely disseminated to be suggestive of a given area or time period. Metallographical examination of the sword grip might help to affix a place of origin for this object. It is hoped that, by bringing this sword grip to the attention of others, similar examples may be located.

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Costanoan Astronomy from the Notes of John P. Harrington

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Data which concern Costanoan astronomy are of considerable importance to California scholars, since so little of this aspect of that culture has survived. It was thus with great delight that I received from Miss Barbara Bocek, a Stanford graduate student under-

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taking Costanoan research at the Smithsonian Institution, some notes on astronomy housed in the Harrington collection of the National Anthropological Archives. Recorded by anthropologist John P. Harrington in October 1929, March 1932, and April, November 1935, the notes were apparently based upon work with his major Costanoan consultant, Isabel Meadows of Carmel (Walsh 1976:26). The notes consist of seven typed slips and three pages of original, handwritten notes, with the abbreviation "Iz." on them. Iz. doubtlessly stands for Isabel Meadows. Two of the slips have been stamped with the words "Pinart, Ventura Soto Voc.," which indicate that these pages relate to Harrington's practice of rehearsing vocabulary in an effort to check and to correct when necessary.

I have lightly edited the notes to remove or correct for incomplete, awkward, or extraneous sentences, but with the primary objective of faithfully retaining the detail and flavor of the original. Translations of occasional Spanish sentences were required, and where doubt or elaboration was encountered, brackets have been added. Following Harrington's data, the reader will find a few notes which I have added to remove confusion or to elaborate where justified.

COSTANOAN ASTRONOMY

Sun

Among the Indians they say that the sun comes in summer, turning as it were to make the days longer. The stars also vary as to where they rise.¹

Moon

When the ears of the moon are dark, it will rain.² And when one sees the stars big it will rain. These were the signs of Mr. Meadows.

Eclipses

Loreta and also Omesia talked of using a

rope so as not to get lost when going to get water and wood when the sun should be eclipsed. And Iz. was scared. But they did not do it, and no more was said. The idea was to stretch a rope and to feel along it as a blind man does.

Once at Meadows Ranch, Diego Onésimo, brother of Loreta (old Carmel Indian) was up on a tapeiste [framed structure?]. He had put a hide on the tapeiste and slept up there to watch the cornfield. A bear came and killed a [word missing] at the very same time that the moon was eclipsed. "Ah, what things are happening!" Diego was afraid to come down from the tapeiste, and it just happened thus.³

Venus

'ak, morning star. Soothsayer, wizard, no more.⁴

Stars

pakrar, star. pakraxt, starry sky, but better to say pakraot.

Omesia knew the names of the stars, but Iz. forgets them. Iz. now remembers that the little girl, Omesia, used this word as the name of that bunch of stars that are called the Seven Sisters [The Pleiades]. Omesia said 'atcankwakay, The Pleiades. Holds her thumbs and forefingers of both hands < > to show the shape of this constellation.⁵

Iz. never heard of the Deer Constellation but would translate it *totr*.

Milky Way

Iz. does not know name of Milky Way in Carmel, but would translate it as "backbone of the world," *pirre rums*. "night's backbone," *'orpetrewx rums*. Iz. never heard Omesia call Milky Way as "road from San Diego."⁶

Comets

Omesia told Iz. that when a comet came, war would come in three years.⁷

Meteors

Get text on Isabel, older sister of Julia, being at Cañada de Robinson and thinking "this canyon is going to burn, so many stars fell."⁸

SUMMARY COMMENT

Although Harrington's notes on Costanoan astronomy are unfortunately brief and cryptic, they nonetheless indicate that these people shared in a number of concepts about the sky found among the Chumash to the south and the Pomo to the north. Given the complexity of astronomical knowledge known for both of these groups, it would suggest that the centrally positioned Costanoan very probably possessed a similar complexity. Perhaps additional Harrington notes will be found to provide further insight into this question.

NOTES

1. "to make the days longer" would be referring to the winter solstice event. Elsewhere, Harrington (1942:29, items 1120, 1124) reported that the Costanoans observed the winter solstice and used it in their descriptive calendar. Concerning the Costanoan living near Mission San Jose, a Franciscan priest wrote:

... They adored the sun when it receded towards the south pole. They thought it was angry and they held dances in its honor and offered it seeds, etc., until they knew it was about to return to them [Geiger and Meighan 1976:92].

Broadbent (1972:74-75) noted the importance of Sun, Moon, and other celestial beings among these people.

For an analysis of the implications of solstice ceremonies and the possibilities of Costanoan solar observatories for this purpose, see Hudson, Lee, and Hedges (1979).

2. It is not clear what is meant by the statement that when the ears of the moon are dark, it will rain. What perhaps is more typical is the widespread California Indian belief that the position of the

"horns" or "cusps" determined weather conditions. When horizontal (both pointing up or down) it was a good sign for rain among the Costanoan (Harrington 1942:42, item 1667), as it was among other central and southern California groups (Hudson 1980:18). When the horns were vertical (one above the other) it was a sign of drought and was equated with death.

3. Everywhere in California, both solar and lunar eclipses were known, and these phenomena were considered ill omens. According to Harrington (1942:42, item 1674), the Costanoan believed that a lunar eclipse was caused by a grizzly eating the moon. The belief may have been similar to the Pomo one in which they held that the Milky Way was Bear's path, and when Bear met Sun on this path, it would result in a fight leading to an eclipse. Bear also fought with Moon (Loeb 1926:228-229). Harrington (1942:42, item 1677) added that it was considered bad among the Costanoan for a pregnant woman to see a lunar eclipse, for it would result in giving birth to a deformed child. The Chumash and many other California groups held similar beliefs concerning the moon's powers over unborn children (Hudson and Underhay 1978:75).

4. Over much of central and southern California, prayers were delivered to Morning Star (Hudson 1980:22-25). The Pomo and Yokuts, for example, delivered prayers to Morning Star because this being aided in all events (Loeb 1926:228; Gayton 1948:89, 156, 229, 267). It would appear from Isabel Meadows' statement that the Costanoans must have held similar beliefs.

5. It is unfortunate that so few names and identifications of stars and constellations were recorded for the Costanoan, for as we know from other California tribes a considerable number were recognized, named, and associated with ritual behavior and used to mark the months in the calendar (Harrington 1942:29, item 1126; Hudson 1980:27-40).

Throughout much of California the Pleiades were identified as sisters, wives, maidens, or girls. The Costanoan, however, may have considered these stars to be a bunch of little ones shaking (Harrington 1942:29, item 1131).

6. Although not a star nor constellation, the Milky Way was considered a single entity by native Californians. Often it was conceived as a ghost's road, the path taken by the dead to reach the next world. A few considered it to be the path taken by an important supernatural, as for example the Pomo considering it Bear's path (Loeb 1926: 228-229), or

the Maidu belief that it was traveled by Morning Star (Kroeber 1925:439). Harrington (1942:30, item 1143) reported that some Chumash groups considered the Milky Way to be Night's backbone, although in other ethnographic data collected by Harrington it would appear that the Milky Way was also the path taken by the dead in their journey to the other world (Hudson and Underhay 1978: 116-119). Isabel Meadows' translation of "Night's backbone" into Costanoan represents an attempt by Harrington to reconstruct an otherwise unknown term by assuming that this was the original meaning. It may well have been the profane meaning for the Milky Way, but one could also speculate that the Costanoan, like the Chumash, gave it a sacred meaning as well, especially since the land-of-the-dead was believed to be to the west, a direction that the winter solstice Milky Way leads to among the Chumash and their neighbors (Hudson and Underhay 1978:116-119).

7. Harrington (1942:30, item 1150) reported that comets were considered an ill omen among the Costanoan. Little is known of native California beliefs concerning comets, but from what little information there is it would appear that other tribes also considered them to be omens. The Chumash considered them such (Hudson and Underhay 1978:99), while the Luiseño believed them to be omens coming in the form of a former chief who has returned wearing a headband tied around his head (Harrington 1933:201).

As for warfare, Broadbent (1972:73-74) notes that the Costanoan were at almost continuous warfare with their Esselen neighbors, though conflicts were of short duration.

8. According to Harrington (1942:30, items 1147, 1149), the Costanoan believed that falling stars indicated death. Elsewhere in California, it was generally believed that these objects were associated with sickness or death (Hudson 1980:25). The reference that falling stars may have also been associated with fire ("this canyon is going to burn, so many stars fell") is mirrored by the Pomo belief that such objects were fire dropping from heaven (Loeb 1926:229).

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