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Olivella Grooved Rectangle Beads from a Middle Holocene Site in the Fort Rock Valley, Northern Great Basin

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In this paper, the age and context of two distinctive shell beads recently found at the DJ Ranch site in south-central Oregon are discussed. These beads, which almost certainly originated on the southern California coast, clearly indicate the existence of extensive trade networks during the Middle Holocene. Such beads have also been identified as evidence of an early cultural interaction sphere linking the southern Channel Islands and adjacent mainland coast with peoples of the western Great Basin. The examples from the DJ Ranch site significantly extend the spatial distribution of such beads. Archaeologists working throughout the Great Basin and California should be aware of these distinctive beads and their potential implications.

RECENTLY, considerable attention has been given to the implications of the spatial and temporal distributions of *Olivella* grooved rectangle (OGR) beads in sites of the southern California coast and the western Great Basin (Raab and Howard n.d.; Bennyhoff and Hughes 1987; King 1990; Howard and Raab 1993; Raab et al. 1994; Vellanoweth 1995). For the southern California coast, for instance, Howard and Raab (1993) proposed that these distinctive beads are found primarily in sites dated between about 4,300 and 5,200 RCYBP, and are limited almost exclusively to the southern Channel Islands and the Orange County coast. Largely on this basis, Raab et al. (1994) identified a Middle Holocene "cultural interaction sphere" encompassing these areas.

Curiously, only one of these OGR beads has been found in the Santa Barbara Channel area immediately to the north (see King 1990; Howard and Raab 1993). However, they have been found in several western Great Basin sites (Bennyhoff and Hughes 1987), including Hidden Cave, Kramer Cave, Lovelock Cave, Shinners Site F, and Stillwater Marsh in Nevada. King (1990:111) noted that OGR beads have been found predominantly in areas occupied historically by Uto-Aztecan peoples. Raab et al. (1994: 254) and Vellanoweth (1995) suggested that these distributions might indicate that such peoples arrived on the southern California coast—including the southern Channel Islands—a thousand or more years earlier than most models suggest (see Kowta 1969; Koerper 1979; Moratto 1984:560).

In this paper, we describe the recent discovery of two OGR beads from the Middle Holocene DJ Ranch site (35LK2758) in the Fort Rock Basin of central Oregon (Fig. 1). This discovery extends the spatial distribution of OGR beads during the Middle Holocene to a site located approximately 1,200 km. north of their apparent point of origin on the southern California coast. This broader distribution, in turn, further emphasizes the differential distribution of such beads within areas of the far western United States. After describing the context and chronology of the DJ Ranch beads, some possible implications of this discovery for California and Great Basin prehistory are discussed.

THE DJ RANCH SITE: CONTEXT AND CHRONOLOGY

The DJ Ranch site, covering an area of about 24,700 m.^{2}, is located on a lunette dune in the Fort Rock Valley, Oregon (Fig. 1). The Fort Rock region is a high desert environment (more than 1,200 m. in elevation), part of a xeric shrub-steppe biotic community that covers much of south-central Oregon (Franklin and Dyrness 1988:234). This community is composed largely of sagebrush (*Artemisia tridentada*), greasewood (*Sarcobatus vermiculatus*), saltbush (*Atriplex* sp.), juniper (*Juniperus occidentalus*), and grasses (e.g., *Festuca idahoensis* and *Elymus cinereus*). The area lies in the rainshadow of the Cascade Mountains, which commonly rise above 2,250 m. along the western border of the Fort Rock Basin. Historically, precipitation in the region rarely exceeds 15 to 30 cm. annually.

The Fort Rock Basin is divided into three subbasins by low ridges: Fort Rock Valley, Christmas Valley, and Silver Lake Valley. The Fort Rock Valley currently receives no water from a perennial source. Lakes and marshes which stood in its lowlands in the past must have originated with either increased discharges from ephemeral drainages or overflow water from Silver Lake. During unusually wet periods of the past, Silver Lake has discharged excess water through a series of channels into the lakes, playas, and blowouts of the Fort Rock Valley. The DJ Ranch lunette formed on the northeast side of a small blowout pond situated at the northeast terminus of a short feeder channel that branches off the main overflow channel.

Initially recorded in 1992, the DJ Ranch site was excavated in the summers of 1993 and 1994 by participants in the University of Oregon field school. Excavations at the site revealed cultural deposits to a maximum depth of 325 cm. The upper 280 cm. of site deposits are composed primarily of reworked volcaniclastic sediments from the eruption of Mount Mazama ca. 6,800 RCYBP. Intermixed with this tephra are eolian silts eroded from the bed of Pleistocene Lake Fort Rock and other local sources. The primary cultural components, defined by large and diverse assemblages, were encountered in the upper 150 cm. of the site (Fig. 2). Hearths and probable house floors were common throughout these deposits, as were lithic and bone debris, manos and metates, mortars and pestles, net weights, bone tools, and beads of *Olivella* shell, stone, and bone. Associated projectile points

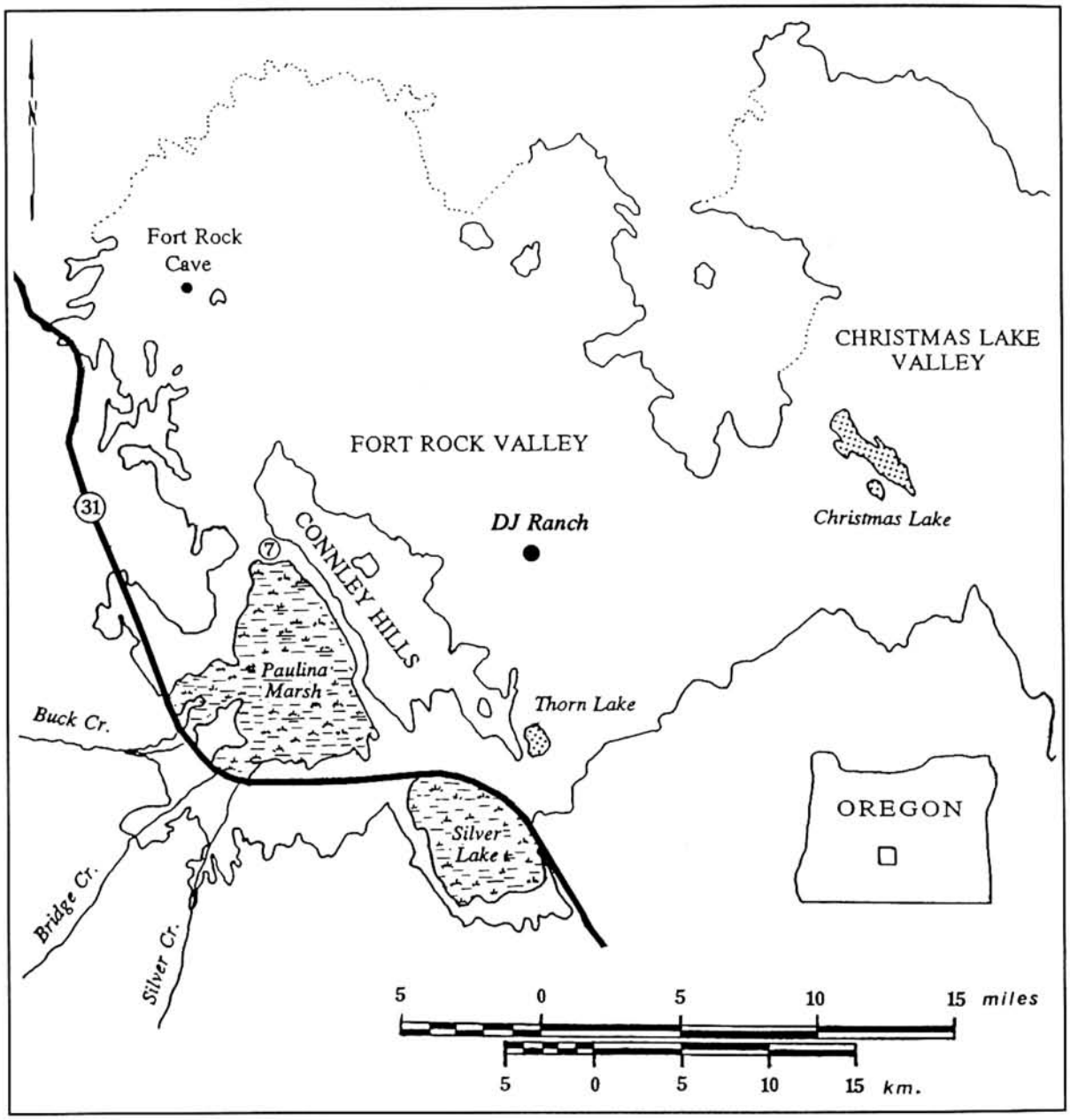

Fig. 1. Location of the DJ Ranch site (35LK2758).

include Northern Side-notched, Elko Corner-notched, Elko Eared, Gatecliff Split-stem, Cascade, and Western Stemmed varieties (Jenkins et al. 1994; Moessner 1995). These cultural materials seem to date mostly from three periods of relatively intense occupation during the Middle Holocene (Table 1).

Below the primary cultural components are coarse volcaniclastic sediments mixed with diatomite flakes. Within this basal stratum were two charcoal-stained lenses with no clear cultural associations. The upper lens (175 to 185 cm.) dated to 6,220 ± 140 RCYBP (Beta-75090), and the lower lens (215 to 240 cm.) to 6,060 ± 80

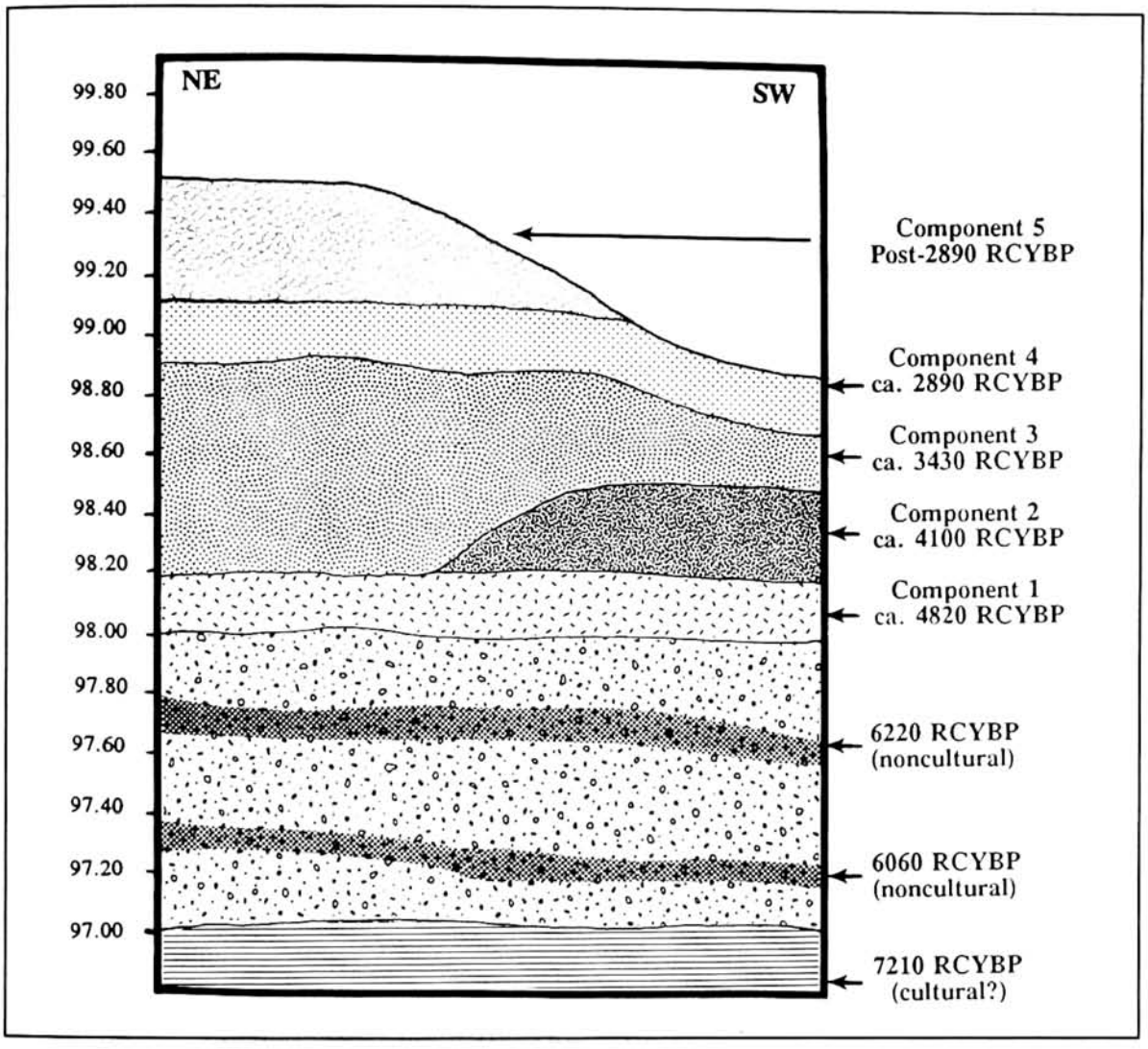

Fig. 2. Idealized stratigraphic profile of the DJ Ranch site (35LK2758) (adapted from Moessner 1995:62).

RCYBP (Beta-75089). Below these lenses (270 to 280 cm.) were small remnants of primary Mazama tephra deposits capping a silty dune deposit. Within this basal silt was another thin, charcoal-stained lens, dated to 7,210 ± 170 RCYBP (Beta-75091), which produced small quantities of cultural material.

DESCRIPTION AND CONTEXT OF THE OGR BEADS

Two OGR beads, both type N2 beads in the classification scheme of Bennyhoff and Hughes (1987:141-142), were recovered from separate activity areas approximately 35 m. apart at the DJ Ranch site (Fig. 3). The first specimen (902-DJ2-1/3.5-10-5) is 6.5 mm. long and 6.2 mm. wide, with a groove 5.15 mm. long and 2.5 mm. wide, an aperture 2.0 mm. long and 1.0 mm. wide, and a shell thickness of 0.7 mm. This bead came from a depth of about 95 cm. in a 50 x 50 cm. test probe excavated in the west wall of Backhoe Trench No. 1, below the dune crest on the southwest slope of the lunette. The bead came from the upper 5 cm. of a dark, an-

Table 1
RADIOCARBON CHRONOLOGY FOR THE DJ RANCH SITE (35LK2758)

Component	Median Depth	Median Age	Uncorrected ^{14}C Dates (RCYBP)	Lab Number
1	130 to 150 cm.	4,840 RCYBP	4,900 ± 80	Beta-67527
			4,780 ± 130	Beta-67528
2	110 to 130 cm.	4,160 RCYBP	4,280 ± 220	Beta-75086
			4,160 ± 120	Beta-67524/CAMS-9895
			4,050 ± 100	Beta-71832
3	70 to 120 cm.	3,420 RCYBP	3,510 ± 80	Beta-75087
			3,380 ± 100	Beta-75085
			3,370 ± 60	Beta-75088

thropic soil penetrated by the probe. Excavations of nearby structural floors in this same cultural stratum yielded charcoal samples dating to 4,050 ± 100 and 4,160 ± 120 RCYBP, suggesting that the OGR bead is associated with Component 2.

The second OGR bead (932-DJ2-7-2-B-3-4) is 5.6 mm. long by 5.5 mm. wide, with a groove 4.2 mm. long by 1.1 mm. wide, an aperture 1.3 mm. long and 1.0 mm. wide, and a shell thickness of 0.9 mm. The aperture of this specimen has been uniformly widened by additional drilling from the interior surface of the shell. It was recovered from a 1 x 2 m. test unit excavated over a probable cache pit exposed in a backhoe trench dug on the lee side of the dune. This short trench, designated as Trench 1 extension, was located 20 m. northeast of the northern end of Trench 1. Charcoal from the floor of the 170 cm. wide and 40 to 65 cm. deep pit was dated to 4,280 ± 220 RCYBP (Beta-75086). The OGR bead was recovered from a depth of 20 to 30 cm., near the top of a pinkish-brown stratum deposited between about 2,800 and 4,900 RCYBP, and from which the pit apparently originated. A Northern Side-notched point was recovered from within the pit and a second was found several meters away. This point type is most common in sites dated between 6,500 and 4,000 RCYBP in the Fort Rock Basin (Aikens and Jenkins 1994). No Elko or Gatecliff Split-stem points, most common in cultural components dating after 4,000 RCYBP, were recovered near this cache pit.

DISCUSSION AND CONCLUSIONS

Contextual and radiocarbon data indicate that the OGR beads from the DJ Ranch site are Middle Holocene in age, most likely dating to about 4,150 RCYBP (calibrated to about 4,700 calendar years B.P. [Stuiver and Reimer 1993]). Because digging by animals and humans had disturbed the site stratigraphy to some extent, we cannot be absolutely certain with which Middle Holocene component the beads are associated. However, there is little question that they are associated with one of these components, which span the period from about 3,400 to 5,000 RCYBP.

Similar contextual or dating problems prevent the construction of a high-resolution chronology for OGR beads found in other sites of the Great Basin and the southern California coast. The most precise chronological data come from sites on the southern Channel Islands, where stratigraphic mixing is limited. Howard and Raab (1993) proposed that southern California coastal specimens date between about 4,300 and 5,200 RCYBP, and Vellanoweth (1995) found a number of specimens in strata at a San Nicolas Island site (CA-SNI-161) that dated between about 4,200 and 4,800 RCYBP.

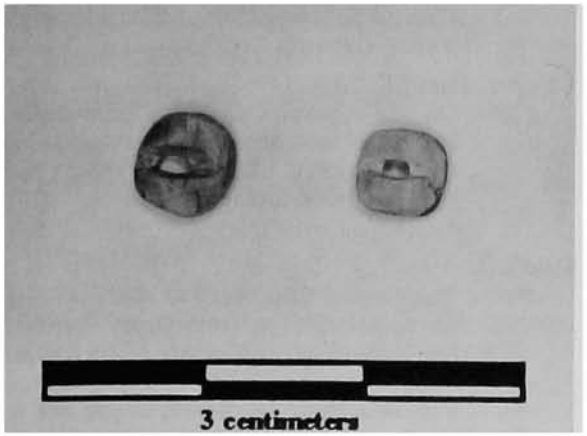

Fig. 3. *Olivella* grooved rectangle beads from the DJ Ranch site.

The OGR beads from the DJ Ranch site appear to date to the younger end of the known temporal range for southern California specimens.

The dating of OGR beads in archaeological sites of western North America remains somewhat fuzzy, but the distinctiveness and distribution of such beads recovered so far is much less so. To our knowledge, at least 225 OGR beads have been recovered from a total of 16 sites, 10 sites on the southern California coast and six sites in the Great Basin (Raab and Howard n.d.; Bennyhoff and Hughes 1987; King 1990; Howard and Raab 1993; Vellanoweth 1995). At this time, roughly two-thirds of all known OGR beads (n = 146) come from San Nicolas Island, including seven specimens that appear to have been unfinished (Vellanoweth 1995). The remaining southern California specimens come primarily from Santa Catalina and San Clemente Islands and mainland coastal sites in Orange and Los Angeles counties (Raab and Howard n.d.). Raab et al. (1994:254) recently linked OGR beads from the southern California coast to the existence of a southern interaction sphere separate from the Santa Barbara Channel region to the north:

> . . . Santa Catalina and San Clemente islands, and probably San Nicolas Island as well, were occupied at the time of European contact by populations with cultural affiliations to the Gabrieleno Indians of Los Angeles and Orange counties . . . The distribution of OGR beads may reflect their movements within a social network that linked the southern islands and the mainland as early as 4,800 RYBP.

As suggested by Howard and Raab (1993) and others, the distribution of OGR beads along the southern California coast and their presence in Middle Holocene sites in the western and northern Great Basin may support the existence of an early cultural interaction sphere, possibly linking Uto-Aztecan peoples of the southern California coast and the western Great Basin. Remarkably, more OGR beads have now been found at the DJ Ranch site in central Oregon, up to 1,200 km. from their probable point of origin on the southern Channel Islands, than have been found in the heavily studied Santa Barbara Channel region immediately north of the proposed cultural interaction sphere. While at least 46 OGR beads have been recovered in Great Basin sites in Nevada and Oregon, only one OGR bead has been found in the Santa Barbara Channel region, suggesting that a cultural boundary or frontier may have existed between proto-Tongva and proto-Chumash peoples as early as 5,000 years ago. Ultimately, however, more data on the spatial and temporal distributions of OGR beads and other distinctive artifact types are needed to effectively examine the relationships between archaeological and linguistic models of human migrations in prehistoric California and the Great Basin. Clearly, however, archaeologists should pay more attention to the recovery, recognition, and precise dating of *Olivella* grooved rectangle beads found at sites in the western United States.

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