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A New Possible Function of Crescents

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Crescents are enigmatic flaked stone artifacts commonly associated with Western Stemmed Tradition and Paleocoastal complexes in western North America. Despite a number of suggestions, their function remains unclear. It is proposed here that at least some crescents may have been hafted on projectile shafts below (but near) their stone or wooden points as "spurs" to limit the penetration of the projectile into the body of a targeted animal, such as a large bird. This would have served to minimize the post-mortem damage to the prey and increase the chances of recovering both the projectile and the prey. This is the same concept found in some ethnographic bird arrows that have wooden cross members fastened below their wooden tips.

Crescentic artifacts, better known as crescents, are a group of commonly occurring, but poorly understood, bifacially flaked stone artifacts generally seen as markers for various Western Stemmed Tradition (WST) and Paleocoastal complexes in western North America. Crescents come in a variety of shapes, are made mostly from cryptocrystalline stone, and those associated with WST complexes are generally found in or near ancient wetland ecozones. Their function is unknown, although it is commonly believed that they were transversely-hafted projectile points for use on birds, particularly waterfowl, or other small animals.

A new possibility is suggested here—that at least some crescents may have been hafted perpendicularly to the shaft of a projectile (presumably a dart foreshaft with or without a stone point) below its tip as a spur to limit the weapon's penetration. This is the same concept found in ethnographic bird arrows, which have wooden cross members tied at right angles below their wooden tips (e.g., Fowler and Matley 1979:65; Laird 1984:165; Steward 1933:260, Fig. 3c; Zigmond 1986:401; also see Shimkin 1947:268, 269).

CRESCENTS IN CONTEXT

Crescentic artifacts, along with large stemmed, shouldered, lanceolate points of various types, are markers of the Western Stemmed Tradition (WST) in interior western North America (Smith and Barker 2017: Willig 1991; Willig and Aikens 1988) and of the Paleocoastal Tradition in California (Erlandson et al. 2011). Crescents are often, though not always, found in spatial association with stemmed points, and occasionally with both fluted and unfluted concave-base points (e.g., Beck and Jones 2010; Lenzi 2015; Sanchez et al. 2016; Smith 2008:95; Smith and Barker 2017). The focus of this paper is the crescents associated with WST complexes.

The dating of the WST is unclear, and while many believe it dates between about 12,000 and 8,000 B.P., there is a growing belief that certain WST complexes may be as old as, or even older, than Clovis (e.g., Beck and Jones 2010; Bryan 1980, 1988; Jenkins et al. 2012)—perhaps even as old as 16,000 cal B.P. (e.g., Davis et al. 2019). Although only a few crescents have been found in well-dated contexts, they appear to have been used during late Pleistocene and early Holocene times (Beck and Jones 2009; Craven 2004; Jew et al. 2015; Smith et al. 2014), and persisted until about 8,000 cal B.P. (Smith and Barker 2017:27, Table 3).

Sites associated with the WST are commonly found in the Great Basin and California near areas that were lakes, marshes, or other wetlands during the late Pleistocene/early Holocene (LP/EH) (e.g., Beck and Jones 1997:206; Chatters et al. 2012; Clewlow 1968; Hattori 2008:39; Pettigrew 1984:72; Sanchez et al. 2016; Smith 2008:57; Sutton 2019; Tadlock 1966:664; but see Hoffman 1997). In addition, many crescents have been found on the northern Channel Islands in southern California (Fig. 1) (Braje et al. 2013; Davis et al. 2010:86; Erlandson 2013; Erlandson et al. 2011; Moss and Erlandson 2013:176; Rick 2008; also see Mohr and Fenenga 2010:Table 1) but they are rare east of the Rocky Mountains (Sanchez et al. 2016:108). The association between WST materials and mesic environments suggests a subsistence system that included a breadth of resources from aquatic margins, such as fish, shellfish, small game, and birds. There is currently little evidence for the exploitation of large game during this time.

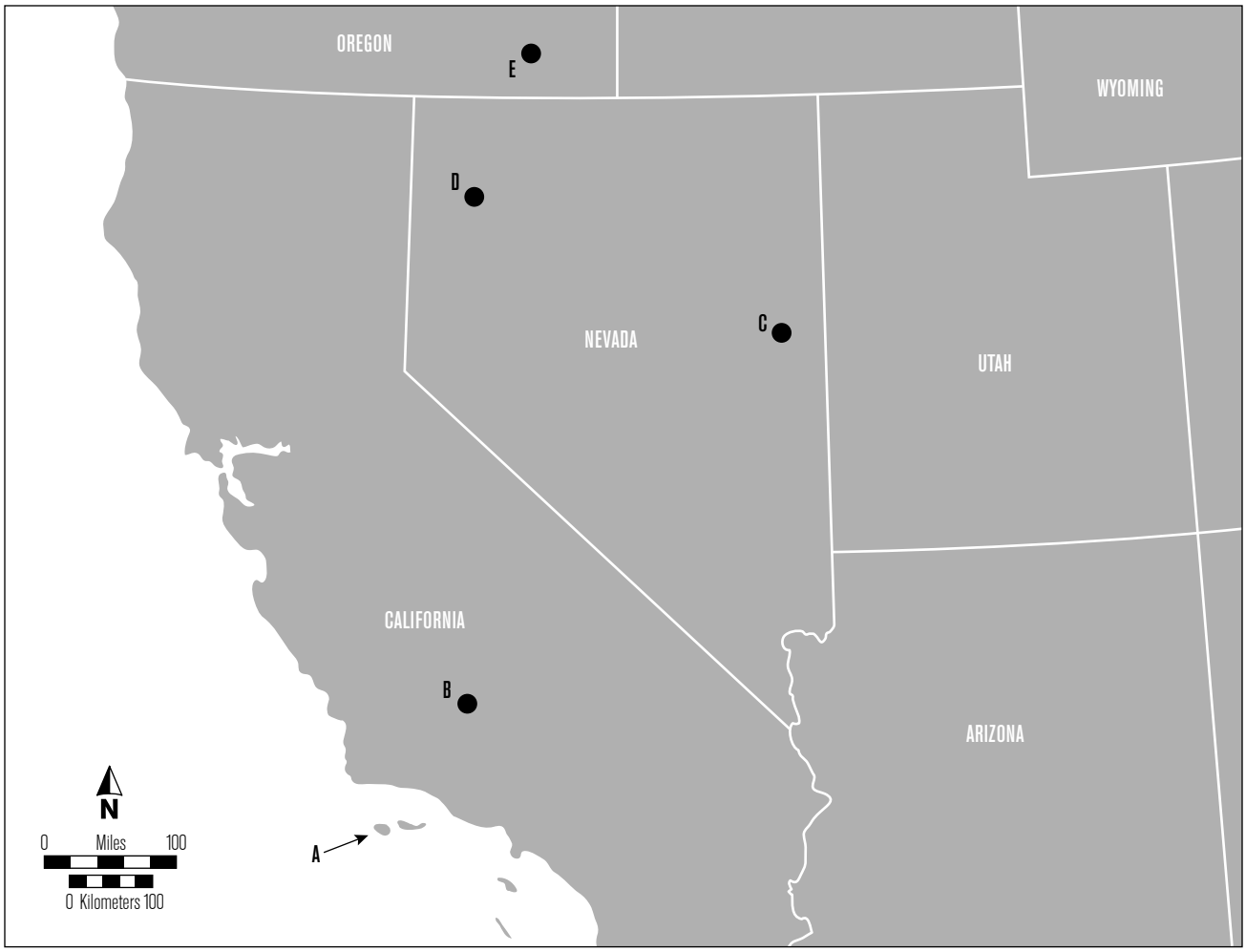

Figure 1. Location of sites and localities discussed in the text: (A) Northern Channel Islands, California; (B) Tulare Lake, California; (C) Sunshine Locality, Nevada; (D) Black Rock Desert, Nevada; (E) Coyote Lake, Oregon.

CRESCENT MORPHOLOGY, MATERIALS, MANUFACTURE, USE WEAR, AND BREAKAGE

A very brief discussion of crescents is presented below as background. Crescents have been classified into various types. Tadlock (1966) identified three basic types: (1) Quarter-Moon (lunate), (2) Half-Moon, and (3) Butterfly (Fig. 2), with the most recognizable form being the quarter-moon shape (Tadlock 1966). Most researchers continue to follow Tadlock's basic classification (e.g., Amick 1999; Beck and Jones 2009; Fenenga 1992, 1993, 2010; Hopkins 2010; Jertberg 1986; Mitchell et al. 1977; Mohr and Fenenga 2010) while noting that "eccentric" varieties—found mostly in California (e.g., Fenenga 1993), with rare examples in the Great Basin and Baja California (Hopkins 2010:47; Jew et al. 2015:137; Smith 2008:80)—also exist.

Crescents are made predominantly from cryptocrystalline silicates (CCSs), including chalcedony, agate, chert, and jasper (Amick 1999:164, 2007; Beck and Jones 2009:104; Hopkins 2010:Table 1; Tadlock 1966), although obsidian was sometimes used (e.g., Garfinkel et al. 2008; Hopkins 2010; Jew et al. 2015). For example, 86 percent of the some 434 crescents reported from Tulare Lake, California (see Fig. 1) were CCS (Hopkins 2010:52, Appendices 1, 2; also see Sutton 2019; Wallace 1989), 94.3 percent of the 245 crescents reported from the Sunshine Locality in Nevada (see Fig. 1) were chert (Beck and Jones 2009:104), and 96 percent of the 158 specimens from the Nevada State Museum collections examined by Beck and Jones (1997:207) were chert.

Rondeau (1985:55) reported that crescents from Tulare Lake had been manufactured through the produc-

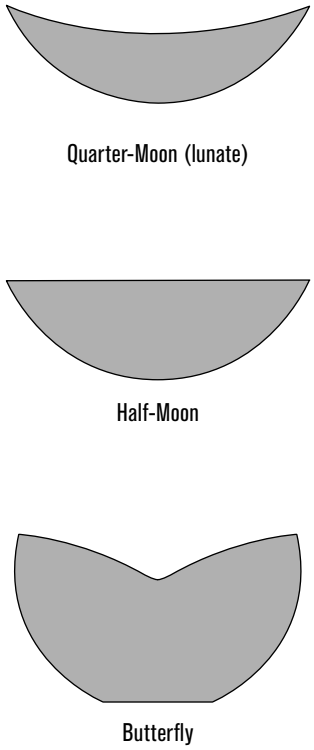

Figure 2. A general classification of crescents (after Tadlock 1966: Fig. 1).

tion of a flake blank, with soft-hammer biface thinning, and were finished by pressure flaking. Rondeau (1985:55; also see Amick 1999) further noted that manufacturing issues typical of biface thinning were evident, including failure at edge control, thinning failures, and breakage due to excessive force or material flaws. Beck and Jones (2009:104–105) reported a similar manufacturing pattern. Smith (2008:99) suggested that many crescents may have been made from the remnants of other, exhausted tools.

A number of studies of use-wear on crescents have been conducted. Mitchell et al. (1977) looked at use-wear patterns on 210 crescents from four collections from the Black Rock Desert, Nevada (see Fig. 1). They reported damage on the wings, tips, and body of the artifacts and concluded that they had been used in a "number of ways" (Mitchell et al. 1977:40). Fenenga (1993) looked at use-wear on eccentric crescents and reported polish on flake-scar arrises, on the wings, and on the convex edges, and also concluded that the specimens had been used for a wide variety of tasks (Fenenga 1993:106). Most of the 158 crescents from the Nevada State Museum examined by Beck and Jones (1997:207) were heavily ground along both concave and convex edges, and considerable re-sharpening of the tips was noted. Edge grinding suggests that the specimens were hafted, and the resharpening at the tips indicates that they were a curated tool. A similar pattern was reported by Amick (1999:164) for crescents from the Black Rock Desert.

Wylie and Green (1998) examined 330 crescents from the Coyote Lake area in southeastern Oregon (see Fig. 1). They reported that there were abraded edges, and striations on the edges and wing surfaces (Wylie and Green 1998:2–3). They concluded that the observed wear was the result of cutting and scraping and not from being hafted as projectile points (Wylie and Green 1998:4).

Specimens from the Sunshine Locality showed a pattern of edge grinding, but only one showed any wear on the arrises in the midsection, suggesting they had not been hafted (Beck and Jones 2009:105, 107). The Sunshine specimens also had both the wear and resharpening primarily on the tips, suggesting that those areas were the focus of use (Beck and Jones 2009:108). The breakage patterns of the Sunshine specimens favored the idea that they were hafted tools (Beck and Jones 2009:109).

PREVIOUSLY PROPOSED FUNCTIONS OF CRESCENTS

A variety of possible functions have been proposed for crescents (e.g., Lenzi 2015:Table 1.3; Smith 2008:Table 8.2). These include usage as surgical instruments (Wardle 1913), scrapers (Cressman et al. 1936), cutting implements (Cressman 1942; Daugherty 1956; Gifford and Schenck 1926:86), butchering tools (Amick 2007; Mohr and Fenenga 2010; Smith 2008:125), engravers (Amick 2007), fish or duck gorges (Cassinelli 2006:95), being hafted at both ends of a throwing stick (Cassinelli 2006:94), decorative amulets (Davis and Panlaqui 1978:61; Warren 1967), and as animal effigies (Koerper and Farmer 1987:282). In addition, Simms (2008) suggested that some crescents were used as plant processing tools, a supposition supported to some extent by the presence of plant phytoliths on a small number of specimens—3 out of 7 in one case (Hattori et al. 1976) and 1 out of 594 in another (Amick 2007). Moss and Erlandson (2013:185–189; also see Jew et al. 2015:120) suggested that discarded preforms and crescent fragments were likely reused for

other purposes. The discovery of fragments of several very large (ca. 100 mm.) crescents in the northwestern Mojave Desert (Rogers and Izzi 2016) suggests that at least some had uses other than as points.

The most common interpretation is that crescents (at least the lunate forms) were transversely hafted projectile points (Amick 2007; Clewlow 1968:8–9,44; Erlandson and Braje 2008:35; Grayson 2011:295; Heizer and Hester 1978:14–15, Fig. 7a–f; Justice 2002:116–125, Fig. 14; Lenzi 2015; Moss and Erlandson 2013; Tadlock 1966:672), although not everyone agrees (e.g., Smith 2008:121, 123). The association of crescents with wetlands suggests that they might have been components in a technology employed in hunting waterfowl such as geese (e.g., *Branta* sp.) and swans (e.g., *Cygnus* sp.) in areas that would have been part of the Pacific Flyway (Moss and Erlandson 2013; Sanchez et al. 2016).

Several experimental studies involving crescents have been conducted. Amick (2007) used replicated crescents as hafted transverse projectile points, as hand-held tools to incise antler and bone, as butchering tools, and as tools for cutting and scraping wood, willow, tubers, and hides (Amick 2007). His analysis supported the hafted projectile point hypothesis (Amick 2007).

Lenzi (2015) also conducted experiments with replicated crescents to evaluate several of their hypothesized functions. These experiments included using crescents to cut a variety of materials (e.g., leather and wood), as well as using them as the tips of weapons thrown at targets. In both cases, Lenzi evaluated the efficiency of the results and compared the breakage patterns to the archaeological record. He concluded that the crescents were less effective than unmodified flakes as cutting tools, but that they did function adequately as points when hafted to atlatl darts (Lenzi 2015:78–82).

There is also some information on the species of game animals with which crescents might have been associated. Protein residue analysis of 30 crescents from Nevada resulted in the identification of taxa-specific residues on 17 specimens, representing rabbit (n=10), duck (n=4), trout (n=3), human (n=3), turkey (n=1), deer (n=1), and yucca (n = 1) (Hattori et al. 1990:8; Smith et al. 2014). While it is possible that these results might reflect materials used for hafting or as mastics, they nonetheless show that these species were used in WST times.

A PROPOSITION

It seems plausible that crescents were used in the hunting of small animals, including birds. However, it is suggested here that at least some of them may not have been points per se, but instead were hafted partway down the foreshaft of a compound dart, the presumed hunting implement of the time. Such a dart foreshaft might have had a (stemmed?) point attached, or it might have had a wooden point, depending on the size of the prey. The purpose of such a configuration (Fig. 3a–d) would be to have "spurs" that limited the projectile's penetration so that it did not pass through and exit the animal but remained in the body, much like ethnographically known bird points (Fig. 3e–f).

If a projectile penetrates too far into any animal, there is always a risk of damaging organs and thus contaminating the meat. On smaller animals, this issue could be mitigated by limiting penetration, such as by using something (e.g., a crescent) to prevent the dart from going through the animal. While small birds would likely be easily stunned by a transverse point, large birds might not be, depending upon the distance involved, so that some actual weapon penetration might be necessary. Perhaps a projectile with both a stone point and an attached crescent formed an integrated weapons system that could effectively be used for large birds, such as geese.

There are several advantages to this design. First, the dart foreshaft (assuming a compound dart was involved) could remain in the animal, hindering its movements and making escape difficult. If the animal was a bird, the weight of the weapon in the body would likely force the bird to the ground, facilitating its retrieval. Second, if the foreshaft remained in the animal, there would be a greater likelihood that that part of the weapon could be retrieved and not lost in the marsh (perhaps the source of many of the points and crescents now found at sites). Third, the increased mass should transfer greater kinetic energy to the body of the prey than a point alone, and should result in higher kill ratios. The design of contemporary broadhead bird arrows with spurs is intended to produce just such a result. Finally, while the use of lunate crescents as spurs seems the most practical configuration, many of the types and subtypes of crescents could have served the same function.

One issue to consider is that such finely made crescents would seem to be "over engineered" for the

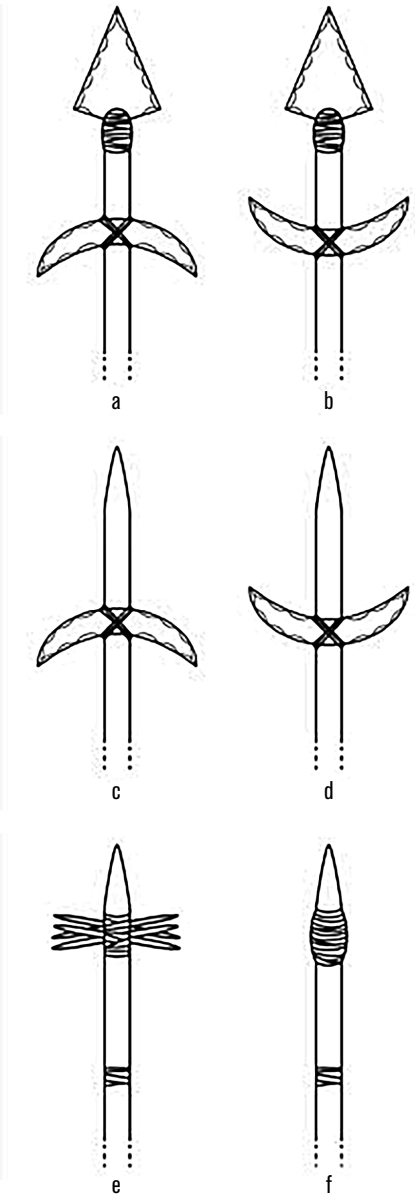

Figure 3. Hypothetical configurations of crescents hafted on a dart foreshaft, with stone (a, b) and wooden (c, d) points, and ethnographic examples of similar configurations, (e) a compound wooden projectile used for hunting "birds" by the Owens Valley Paiute, and (f) a sinew-wrapped compound wooden projectile used to hunt "ducks" by the Owens Valley Paiute (e and f redrawn from Steward 1933:Fig. 3c, d).

task suggested here. That may be true from an etic point of view, but we do not know what the perspective of the makers and users of these artifacts might have been; perhaps having the finest crescents in the society was a source of status, or perhaps the makers were just proud craftsmen. One might argue that having both a stone point and a crescent on the same weapon would be an inefficient use of toolstone, but that would actually depend on whether or not the prey was procured. As an analogy, one can see many such examples of overly engineered products in our own society.

Finally, it is not suggested that this hypothesized function would apply to all crescents in all places at all times. It is simply a possibility to consider involving some crescents in some places at some times.

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REFERENCES

Amick, Daniel S.
1999 Using Lithic Artifacts to Explain Past Behavior. In *Models for the Millennium: Great Basin Anthropology Today*, Charlotte Beck, ed., pp. 161–170. Salt Lake City, Utah: University of Utah Press.
2007 *What Were Great Basin Chipped-Stone Crescents Used For?* Poster presented at the 72nd Annual Meeting of the Society for American Archaeology, Austin, Texas.

Beck, Charlotte, and George T. Jones
1997 The Terminal Pleistocene/Early Holocene Archaeology of the Great Basin. *Journal of World Prehistory* 11(2):161–236.
2009 Artifact Analysis. In *The Archaeology of the Eastern Nevada Paleoarchaic, Part 1: The Sunshine Locality*, Charlotte Beck and George T. Jones, eds., pp. 77–144. *University of Utah Anthropological Papers* 126. Salt Lake City, Utah.
2010 Clovis and Western Stemmed: Population Migration and the Meeting of Two Technologies in the Intermountain West. *American Antiquity* 75(1):81–116.

Braje, Todd J., Jon M. Erlandson, and Torben C. Rick
2013 Points in Space and Time: The Distribution of Paleocoastal Points and Crescents on the Northern Channel Islands. In *California's Channel Islands: The Archaeology of Human-Environmental Interactions*, Christopher S. Jazwa and Jennifer E. Perry, eds., pp. 26–39. Salt Lake City: University of Utah Press.

Bryan, Alan L.
1980 The Stemmed Point Tradition: An Early Technological Tradition in Western North America. In *Anthropological Papers in Memory of Earl H. Swanson, Jr.*, Lucille B. Harten, Claude N. Warren, and Donald R. Tuohy, eds., pp. 77–107. [*Special Publications of the Idaho Museum of Natural History*.] Pocatello: Idaho State University.

1988 The Relationship of the Stemmed Point and Fluted Point Traditions in the Great Basin. In *Early Human Occupations in Far Western North America: The Clovis-Archaic Interface*, Judith A. Willig, C. Melvin Aikens, and John L. Fagan, eds., pp. 53–74. *Nevada State Museum Anthropological Papers* 21. Carson City, Nevada: Nevada State Museum.

Cassinelli, Dennis
2006 *Preserving Traces of the Great Basin Indians*. Dayton, Ohio: Cassinelli Publications.

Chatters, James C., Steven Hackenberger, Anna M. Prentiss, and Jayne-Leigh Thomas
2012 The Paleoindian to Archaic Transition in the Pacific Northwest: In Situ Development or Ethnic Replacement? In *From the Pleistocene to the Holocene: Human Organization and Cultural Transformations in Prehistoric North America*, C. Britt Bousman and Bradley J. Vierra, eds., pp. 37–65. College Station, Texas: Texas A&M University Press.

Clewlow, C. William, Jr.
1968 Surface Archaeology of the Black Rock Desert, Nevada. *University of California Archaeological Survey Reports* 73:1–94. Berkeley, California.

Craven, S. L.
2004 New Dates for the Lind Coulee Site (45GR97), Washington. *Current Research in the Pleistocene* 21:28–30.

Cressman, Luther S.
1942 Archaeological Researches in the Northern Great Basin. *Carnegie Institution of Washington Publications* 538. Washington D.C.

Cressman, Luther S., R. J. Back, J. V. Berreman, H. S. Stafford, E. Hoffstead, and C. Reynolds
1936 Archaeological Survey of the Guano Valley Region in Southeastern Oregon. *University of Oregon Monographs, Studies in Anthropology* 1. Eugene, Oregon.

Daugherty, Richard D.
1956 Archaeology of the Lind Coulee Site, Washington. *Proceedings of the American Philosophical Society* 100(3):223–278.

Davis, Emma Lou, and Carol Panlaqui
1978 Stone Tools, the Action Units. In *The Ancient Californians: Rancholabrean Hunters of the Mojave Lakes Country*, Emma Lou Davis, ed., pp. 30–75. *Natural History Museum of Los Angeles County Science Series* 29. Los Angeles.

Davis, Loren G., David B. Madsen, Lorena Becerra-Valdivia, Thomas Higham, David A. Sisson, Sarah M. Skinner, Daniel Stueber, Alexander J. Nyers, Amanda Keen-Zebert, Christina Neudorf, Melissa Cheyney, Masami Izuho, Fumie Iizuka, Samuel R. Burns, Clinton W. Epps, Samuel C. Willis, and Ian Buvit
2019 Late Upper Paleolithic Occupation at Cooper's Ferry, Idaho, USA, ~16,000 years ago. *Science* 365(6456):891–897.

Davis, Troy W., Jon M. Erlandson, Gerrit L. Fenenga, and Keith Hamm
2010 Chipped Stone Crescents and the Antiquity of Maritime Settlement on San Nicolas Island, Alta California. *California Archaeology* 2(2):185–202.

Erlandson, Jon M.
2013 Channel Islands Amol Points: A Stemmed Paleocoastal Type from Santarosae Island, Alta California. *California Archaeology* 5(1):105–121.

Erlandson, Jon M., and Todd J. Braje
2008 Five Crescents from Cardwell: Context and Chronology of Chipped Stone Crescents at CA-SMI-679, San Miguel Island, California. *Pacific Coast Archaeological Society Quarterly* 40(1):35–45.

Erlandson, Jon M., Torben C. Rick, Todd J. Braje, Molly Casperson, Brendan Culleton, Brian Fulfrost, Tracy Garcia, Daniel A. Guthrie, Nicholas P. Jew, Douglas J. Kennett, Madonna L. Moss, Leslie A. Reeder, Craig Skinner, Jack Watts, and Lauren Willis
2011 Paleoindian Seafaring, Maritime Technologies, and Coastal Foraging on California's Channel Islands. *Science* 331(6021):1181–1185.

Fenenga, Gerrit L.
1992 *Regional Variability in the Early Prehistory of the American Far West*. Ph.D. dissertation, University of California, Berkeley.
1993 The Eccentric Crescent. In *The Scotts Valley Site: CA-SCr-177*, Robert Cartier, ed., pp. 94–109. Santa Cruz, California: Santa Cruz Archaeological Society.
2010 A Typological Analysis of the Temporal and Geographic Distribution of the Eccentric Crescent in Western North America (1984). In *A Riddle Wrapped in a Mystery Inside an Enigma: Three Studies of Chipped Stone Crescents from California*, Gerrit L. Fenenga and Jerry N. Hopkins, eds., pp. 3–46. [*Contributions to Tulare Lake Archaeology* V.] Redondo Beach, California: Tulare Lake Archaeological Research Group.

Fowler, Don D., and John F. Matley
1979 Material Culture of the Numa. The John Wesley Powell Collection: 1867–1880. *Smithsonian Contributions to Anthropology* 26. Washington D.C.

Garfinkel, Alan P., Jerry N. Hopkins, and Craig E. Skinner
2008 Ancient Stones of Black Glass: Tracing and Dating Paleoindian Obsidian Artifacts from China and Tulare Lakes. In *Ice-Age Stone Tools from the San Joaquin Valley*, Jerry N. Hopkins and Alan P. Garfinkel, eds., pp. 59-97. [*Contributions to Tulare Lake Archaeology* IV.] Redondo Beach, California: Tulare Lake Archaeological Research Group.

Gifford, Edward W., and W. Egbert Schenck
1926 Archaeology of the Southern San Joaquin Valley, California. *University of California Publications in American Archaeology and Ethnology* 23(1):1–122. Berkeley, California.

Grayson, Donald K.
2011 *The Great Basin: A Natural Prehistory*. Berkeley, California: University of California Press.

Hattori, Eugene M.
2008 Mysterious Crescents. In *The Great Basin: People and Place in Ancient Times*, Catherine S. Fowler and Don D. Fowler, eds., p. 39. Santa Fe, New Mexico: School for Advanced Research Press.

Hattori, Eugene M., Margaret Newman, and Donald R. Tuohy
1990 *Blood Residue Analysis of Great Basin Crescents*. Paper presented at the 22nd biennial Great Basin Anthropological Conference, Reno, Nevada.

Hattori, Eugene M., P. H. Shelley, and Donald R. Tuohy
1976 *Preliminary Report on a Technofunctional Examination of Flaked Stone Artifacts*. Paper presented at the 15th biennial Great Basin Anthropological Conference, Las Vegas, Nevada.

Heizer, Robert F., and Thomas R. Hester
1978 Great Basin Projectile Points: Forms and Chronology. *Ballena Press Publications in Archaeology, Ethnology and History* 10. Socorro, New Mexico.

Hoffman, C. C.
1997 Site Distribution, the Western Pluvial Lakes Tradition, and the Empirical Record. *Current Research in the Pleistocene* 14:37–39.

Hopkins, Jerry N.
2010 Chipped Stone Crescents from Tulare Lake, California: A Typological Survey and Statistical Comparison with Great Basin Crescents. In *A Riddle Wrapped in a Mystery Inside an Enigma: Three Studies of Chipped Stone Crescents from California,* Gerrit L. Fenenga and Jerry N. Hopkins, eds., pp. 47–91. [*Contributions to Tulare Lake Archaeology* V]. Redondo Beach, California: Tulare Lake Archaeological Research Group.

Jenkins, Dennis L., Loren G. Davis, Thomas W. Stafford Jr., Paula F. Campos, Bryan S. Hockett, George T. Jones, Linda Scott Cummings, Chad Yost, Thomas J. Connolly, Robert M. Yohe II, Summer C. Gibbons, Maanasa Raghavan, Morten Rasmussen, Johanna L. A. Paijmans, Michael Hofreiter, Brian M. Kemp, Jodi Lynn Barta, Cara Monroe, M. Thomas P. Gilbert, and Eske Willerslev
2012 Clovis Age Western Stemmed Projectile Points and Human Coprolites at the Paisley Caves. *Science* 337(6091):223–228.

Jertberg, Patricia
1986 The Eccentric Crescent: Summary and Analysis. *Pacific Coast Archaeological Society Quarterly* 22(4):35–64.

Jew, Nicolas P., Amira F. Ainis, Pamela E. Endzweig, Jon M. Erlandson, Craig Skinner, and Kelsey J. Sullivan
2015 Chipped Stone Crescents from America's Far West: Descriptive and Geochemical Analyses from the Northern Great Basin. *North American Archaeologist* 36(2):119–140.

Justice, Noel D.
2002 *Stone Age Spear and Arrow Points of California and the Great Basin*. Bloomington, Indiana: Indiana University Press.

Koerper, Henry C., and Malcom F. Farmer
1987 A Bear-Shaped Crescentic from Northern San Diego County, California. *Journal of California and Great Basin Anthropology* 9(2):282–288.

Laird, Carobeth
1984 *Mirror and Pattern: George Laird's World of Chemehuevi Mythology*. Banning, California: Malki Museum Press.

Lenzi, Michael R.
2015 *An Experimental Program to Evaluate Proposed Functions of Crescents from the Western United States*. Master's thesis, Department of Anthropology, University of Nevada, Reno, Nevada.

Mitchell, Jimmy L., Paula Rosa, Stanley Castagnetto, and Thomas R. Hester
1977 A Preliminary Statistical Analysis of Chipped Crescents from the Great Basin. *Contributions of the University of California Archaeological Research Facility* 35:23–48. Berkeley, California.

Mohr, Albert D., and Gerrit L. Fenenga
2010 Chipped Crescentic Stones in California. In *A Riddle Wrapped in a Mystery Inside an Enigma: Three Studies of Chipped Stone Crescents from California*, Gerrit L. Fenenga and Jerry N. Hopkins, eds., pp. 93–149. [*Contributions to Tulare Lake Archaeology* V]. Redondo Beach, California: Tulare Lake Archaeological Research Group.

Moss, Madonna L., and Jon M. Erlandson
2013 Waterfowl and Lunate Crescents in Western North America: The Archaeology of the Pacific Flyway. *Journal of World Prehistory* 26(3):173–211.

Pettigrew, Richard M.
1984 Prehistoric Human Land-use Patterns in the Alvord Basin, Southeastern Oregon. *Journal of California and Great Basin Anthropology* 6(1):61–90.

Rick, Torben C.
2008 An Arena Point and Crescent from Santa Rosa Island, California. *Current Research in the Pleistocene* 25:140–142.

Rogers, Alexander K., and Sarah Izzi
2016 Two Unusually Large Crescentics from Eastern California. In *Proceedings of the Society for California Archaeology* 30, Allika Ruby and Don Laylander, eds., pp. 301–308. Chico, California: Society for California Archaeology.

Rondeau, Michael F.
1985 Lithic Techniques of the Tulare Lake Locality, California. *Current Research in the Pleistocene* 2:55–56.

Sanchez, Gabriel M., Jon M. Erlandson, and Nicholas Tripcevich
2016 Quantifying the Association of Chipped Stone Crescents with Wetlands and Paleoshorelines of Western North America. *North American Archaeologist* 38(2):107–137.

Shimkin, D. B.
1947 Wind River Shoshone Ethnography. *University of California Anthropological Records* 5(4):245–288. Berkeley, California.

Simms, Steven R.
2008 *Ancient Peoples of the Great Basin and Colorado Plateau*. Walnut Creek, California: Left Coast Press.

Smith, Beth P.
2008 *Prehistoric Crescentic Tools from the Great Basin and California: A Spatial and Temporal Analysis*. Master's thesis, University of Nevada, Reno, Nevada.

Smith, Geoffrey M., and Pat Barker
2017 The Terminal Pleistocene/Early Holocene Record in the Northwestern Great Basin: What We Know, What We Don't Know, and How We May Be Wrong. *PaleoAmerica* 3(1):13–47.

Smith, Geoffrey M., Donald D. Pattee, Judson B. Finley, John L. Fagan, and Evan Pellegrini
2014 A Flaked Stone Crescent from a Stratified Radiocarbon-Dated Site in the Northern Great Basin. *North American Archaeologist* 35(3):257–276.

Steward, Julian H.
1933 Ethnography of the Owens Valley Paiute. *University of California Publications in American Archaeology and Ethnology* 33(3):233–350. Berkeley, California.

Sutton, Mark Q.
2019 Reassessing the Paleoindian Witt Archaeological Locality, Tulare Lake, San Joaquin Valley, California. *PaleoAmerica* 5(3):276–299.

Tadlock, W. Lewis
1966 Certain Crescentic Stone Objects as a Time Marker in the Western United States. *American Antiquity* 31(5):662–675.

Wallace, William J.
1989 Chipped Stone Crescents from Tulare Lake. *Newsletter of the Tulare Lake Archaeological Research Group* 2(3):2–5. Sacramento, California.

Wardle, H. N.
1913 Stone Implements of Surgery from San Miguel Island, California. *American Anthropologist* 15(1):168–185.

Warren, Claude N.
1967 The San Dieguito Complex—A Review and Hypothesis. *American Antiquity* 32(4):168–185.

Willig, Judith A.
1991 Clovis Technology and Adaptation in Far Western North America: Regional Pattern and Environmental Context. In *Clovis: Origins and Adaptations*, Robson Bonnichsen and Karen L. Turnmire, eds., pp. 91–118. Corvallis, Oregon: Center for the Study of the First Americans, Oregon State University.

Willig, Judith A., and C. Melvin Aikens
1988 The Clovis-Archaic Interface in Far Western North America. In *Early Human Occupation in Far Western North America: The Clovis-Archaic Interface*, Judith A. Willig, C. Melvin Aikens, and John L. Fagan, eds., pp. 1–40. *Nevada State Museum Anthropological Papers* 21. Carson City, Nevada.

Wylie, J., and T. Green
1998 *Coyote Lake Crescents: Preliminary Results*. Paper presented at the Great Basin Anthropological Conference, Bend, Oregon.

Zigmond, Maurice L.
1986 Kawaiisu. In *Handbook of North American Indians, Vol. 11, Great Basin*, Warren L. d'Azevedo, ed., pp. 398–411. Washington D.C.: Smithsonian Institution.