On the Anatomy of the Malaga Cove Site

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Abstract

This article brings together new and previously underutilized information to revisit stratigraphy at the Malaga Cove site (CA-LAN-138). That information includes the observations of a relic collector, Thomas P. Tower I, and of a 1936–1937 dig volunteer at LAN-138, Malcolm F. Farmer. Two new ^{14}C dates and three once obscure ^{14}C dates are brought into the discussion. The single most noteworthy revelation is that Level 2 was probably a multi-component phenomenon containing artifacts of both the Encinitas Tradition and the Del Rey Tradition. Evidence is lacking to support LAN-138 as containing the earliest occupation in the Los Angeles Basin. Continuous occupation of the site from its inception to the contact period cannot be demonstrated. For a variety of reasons, LAN-138 was actually a poor candidate for type site status in the study of coastal southern California prehistory.

Introduction

William Wallace (1986:21) observed that "no archaeological site in the southern California district has a wider and deeper interest than Malaga Cove (CA-LAN-138)." This follows in part from its having been a decades-long favorite destination for relic hunters but also from the several scientific efforts it hosted. Wallace himself ran a last minute salvage effort at LAN-138 (Wallace 1985, 1986); prior excavations included those undertaken by Frank Palmer,[1] Richard Van Vankenburgh,[2] and Edwin Walker. George Brainard's two-day probing of Level 1 in 1948 (Wallace 1986:22) hardly counts, and Delbert True's presence there in the mid- to late 1930s was somewhat akin to pothunting by his own admission (True 1987:273). The infamous grifter, Arthur Sanger, also spent time digging at the site.[3]

Walker's 1936–1937 investigations attracted much scholarly interest since his write-ups (1937, 1951) characterized the Malaga Cove site as four conformably stacked strata, each a distinct temporal unit, altogether offering what appeared to be a succinct, faithful overview of regional culture prehistory. Wallace (1955) employed Walker's vertical schema (see Figure 1) to calibrate the sequence of prehistoric deposits formed elsewhere, and he developed a culture chronology based on culture horizons that was adopted by prehistorians throughout southern California (see Koerper and Drover 1984). Consequently, LAN-138 assumed the mantle of type site for southern California coastal archaeology (see Wallace 1955).

In time, issues were raised regarding stratigraphy and culture at LAN-138 (Wallace 1985, 1986; Peterson 2008; see Sutton and Grenda 2012). We review these issues which undoubtedly will be an ongoing draw for regional archaeology wonks, partly for the additional dialogue this article brings to the table. Such intellectual stimulation will show, for instance, that Wallace was prescient when he wrote, "There are … a half dozen or so substantial collections [from LAN-138] in private hands. Brought together and carefully analyzed, these materials would certainly enlarge knowledge of this important archaeological site's prehistoric past" (Wallace 1986:27).

Many useful revelations are shared below, precipitating especially from the notes and artifacts associated with relic collector Thomas P. Tower (see Koerper, Hunter, and Snyder, previous article, this *Quarterly* double-issue) whose family loaned some of his ca. late 1930s–1941 finds to the Point Vicente Interpretive

Center, Rancho Palos Verdes. Among new data are two AMS ^{14}C dates run on materials Tower recovered from features he excavated out of the stratum that Walker designated as Level 2. This essay also revisits several conventional decay counting radiocarbon determinations that address the question of whether Walker's Level 1 actually represented San Dieguito occupation.

More Background

Edwin Walker (1951:38, 40; see also 1937) described LAN-138 as contained mostly within a 33 ft (10 m) thick sand dune whose highest elevation reached 223 ft (68 m asl). Eight ft (2.4 m) of sandy overburden, absent any cultural material, capped the site's cultural levels, three of which were within the dune. In top-down progression, Walker labeled the three: "Level 4" (15 ft [4.6 m] thick); "Level 3" (8 ft [2.4 m] thick); and "Level 2" (2 ft [.6 m] thick). The lowest cultural component, "Level 1" (3 ft [.9 m] thick), lay immediately below the dune and at the top end of an underlying 25 ft (7.6 m) non-marine terrace (cliff-fed detritus) which itself is positioned on top of stony, Pleistocene uplift that rises 165 ft (50.3 m) above the ocean waters (see Woodring et al. 1946:107–108). The cultural deposits, then, totaled 28 ft (8.5 m) thick according to the Southwest Museum archaeologist.

Walker's (1951:32, Figure 5) diagram of the stratified archaeology at the Malaga Cove site is reproduced here (Figure 1). In his 1937 *Masterkey* article, "Sequence of Prehistoric Material Culture at Malaga Cove, California," there is a photograph of Walker in an excavation pit, and three of the levels, "#3," "#2," and "#1," are identified with the help of sidewall scoring. Level 4 does not appear in that image. In his 1951 book chapter, "A Stratified Site at Malaga Cove," Walker's Plate 9 (p. 35), a different photograph, shows these same three levels, but again Level 4 is unseen. Sutton and Grenda (2012:131, Figure 4) published a May 1937 photograph taken by Walker that they contend shows all four levels. For this, Walker had pointed his camera at the eastern portion of Trench 2. According to Sutton and Grenda, that photograph demonstrates that at least in some places the four levels were in close proximity. Sutton and Grenda (2012:128–131) hold the view that Walker's (1951:32, Figure 5) "diagram of the stratified archaeology" at LAN-138 got it right as an idealized model, certainly for that area surrounding Walker's Trench 2.

Sutton and Grenda's Figure 4 purports to show all four levels. The uppermost is labeled "Level 4 (dunes)." This seems at variance with Walker's stratigraphic profile (Figure 1), and presumably this is why Sutton and Grenda stated that Walker may have been "fudging a bit" when diagramming the cultural stratigraphy for the Malaga Cove site. "Fudging a bit" is a lenient take on Walker's stratigraphy since the photo published by Sutton and Grenda belies the idea that a vertical cut through the site would resemble Level 4's position high and directly atop Level 3 as presented in Walker's stratigraphic archaeology diagram (Figure 1), and that is even assuming that Sutton and Grenda had correctly identified what Walker himself would have agreed was Level 4 in his 1937 photograph (Sutton and Grenda 2012:Figure 4).

A profile diagram of the "north wall" of Trench 2 (Figure 2) (produced in 1937) indicates that close to the northeast corner of the trench, Level 3 rose to 66 in (1.7 m) above the top of the Level 2 stratum. The Level 2 stratum shown is designated as holding metates and manos, while in Level 3 mortars are noted. Inexplicably, Level 3 is labeled as containing black sand rather than gray sand (compare against Figure 1). The line indicating the surface of Level 3 proceeds eastwards nearly 4.25 m from the northeast corner of Trench 2 and to a height of at least 3 m above the top of Level 2. There is nothing to indicate Level 4.

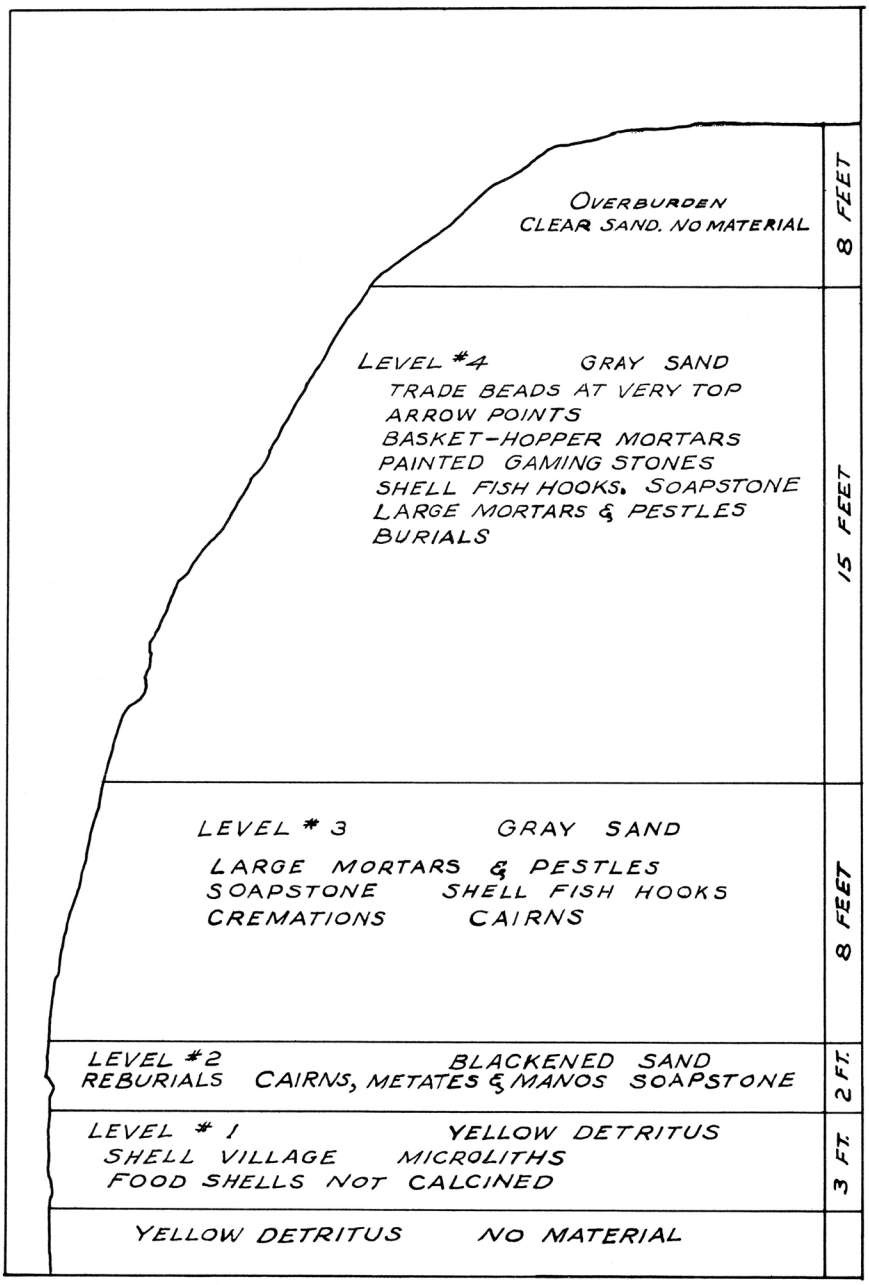

Figure 1. Edwin Walker's (1951:32:Figure 5) "Diagram of the Stratified Archaeology of the Malaga Cove Site."

We do not see all four of Walker's levels occurring in stratigraphic order at Trench 2. Photographs show that at the eastern end of Trench 2 there is a dramatic color contrast between Level 3 and what sits above it (see Sutton and Grenda 2012:130–131, Figures 3 and 4). Above Level 3 there is white sand, presumably no different from the "clear sand" of the "overburden" in Walker's diagram (1951:32, Figure 5) (see Figure 1).

Walker's notebook (Braun Research Library, Autry National Center, Los Angeles) contains a schema that indicates the locations of the test pits (A–D) in relation to one another and upslope from Trench 2. Pit D

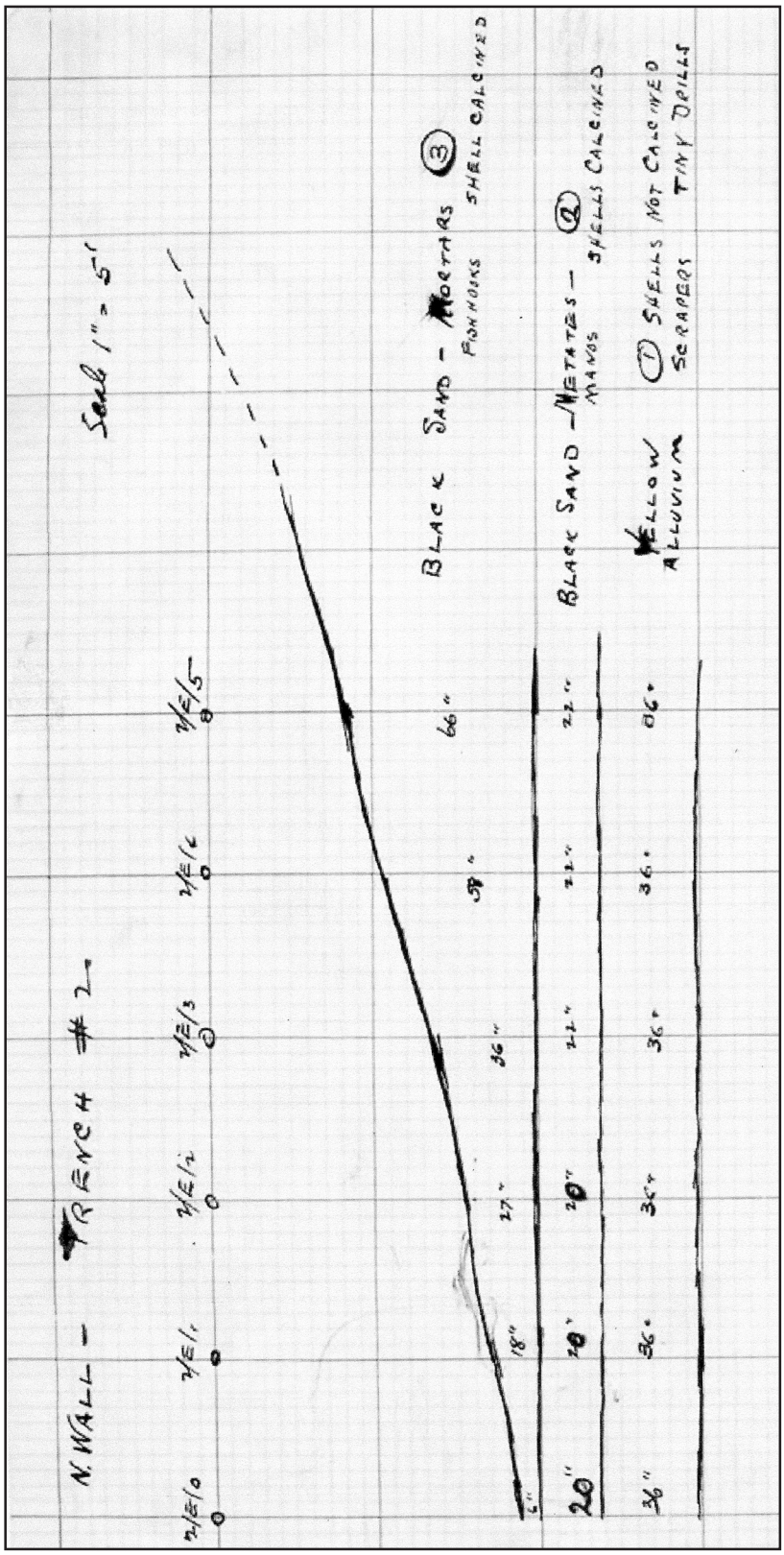

Figure 2. Profile of Trench 2 north wall. Edwin F. Walker Collection, Braun Research Library, Autry National Center, Los Angeles; MS.220.7, Malaga Cove Site, volume 1, page 084.

begins about 10 ft (ca. 3m) east of the easternmost extension of Trench 2 (see Sutton and Grenda 2012:126, Figure 2). Three feet (.9m) of Pit D dune sand was on top of a blowout, below which sat, according to Walker, 3 ft of Level 4 material that overlay Level 3 material (no thickness given). There was no indication of whether Levels 2 or 1 existed further down. Had such been the case and so indicated, then here would be all four of Walker's cultural levels in stratigraphic order. A more complete field catalog, that is, one with data additional to what we refer to as the "short catalog" (see below) might allow a more definitive overview regarding the stratigraphic character of Pit D.

Pit C was located 3 m upslope from Pit D. Walker noted on his test pit map only that there was a 4 ft (1.2 m) layer of sand atop "typical Level 4 material" (no depth given) in Pit C. Pit B extended to the top of the sand dune, and it had 5 ft (1.5m) of "blow sand" (also "clear sand") below which was "typical Level 4 material, including arrow points and shell fishhooks." Not surprisingly, depth was not given for Pit B's Level 4.

Of particular note is recognition that all four maps at our disposal showing the seaward side of Trench 2 indicate its close proximity to the edge of the bluff (see e.g., Sutton and Grenda 2012:126, Figure 2) and also, as seen in our Figure 2, Level 3 at the northwest corner of Trench 2 is a mere 15 cm thick. The upshot is that relic collectors had easy access to Level 2, the "richest" looking midden, some of it possibly exposed at ground level.

Walker perhaps assumed that his Figure 5 (our Figure 1), the stratigraphic profile, projected to readers some level of contrivance. On his previous chapter page, Walker (1951:31) labeled his Figure 4 showing the geology of the Malaga Cove site as an "ideal cross section." A devil's advocate defense might propose that Walker assumed such wording signaled readers to take his Figure 5 as likewise an idealization. We are, of course, far less concerned with his intentions than with this primary question: can each level designated by Walker be translated as a single, discrete, cultural component?

Walker was at times careless, imprecise, and otherwise unable to anticipate potential confusions in communicating his "science." Had he missed a crucial opportunity to show all four levels in vertical position by not publishing the 1937 photograph, even if Level 4 was not mounted high atop Levels 3, 2, and 1? Did he refrain from doing so because it would show he "fudged" his Figure 5 (our Figure 1), or did he refrain because he regarded the area Sutton and Grenda labeled "Level 4 (dunes)" as a continuation of Level 3 but overlain by "clear [sterile] sand"?

William Wallace was critical of Walker's stratigraphic design:

> … [my] salvage digging made it abundantly clear that [LAN-138] did not form a single unified shellmound or midden. Instead, it was found to consist of scattered patches of domestic debris of varying size, thickness, and composition. In all likelihood, this condition resulted from a periodic shifting of residence among sand dunes [Wallace 1985:142].

Wallace repeated his critique (1986:22, 26) but added that Walker had actually appreciated "as Richard Van Valkenburgh did before him, that Malaga Cove held several distinct settlement areas of varying age. But he obscured this circumstance with reference to 'four well-defined stratified levels' and with his stratigraphic drawing."

Interestingly, in 1937 Malcolm Farmer (see Anonymous 2012), who was a volunteer on the Walker dig, produced a draft manuscript about the site in which he questioned whether there was much to distinguish Walker's sand dune cultural levels from one another:

> Mr. Walker has divided the [sand dune cultural deposits] into three [Levels 2–4] and called each a period which is possible but there are no distinct living levels represented. One blends so into the next that it seems much safer and more probable that what is represented is a single period of the development of the one culture rather than thinking that one day certain things were not in use and then the next day they were in use [Farmer n.d.:3 ("The Place of the Malaga Cove Site in Southern California Archaeology, version 2)].

Farmer made a list of categories and specific kinds of artifacts found at Malaga Cove, and in a chart he indicated either presence or absence of each with reference to Walker's four levels. With regard to "Flaked stone: arrowpoints," these artifacts were absent for Levels 1 and 2, present for Level 4, and with a question mark for Level 3. More interesting, Farmer indicated "metate and mano" presence for Levels 2, 3, and 4.

Peterson (2008) concurred with Wallace's assessment. Sutton and Grenda (2012:129) pointed out that while Peterson (2008) had suggested Walker artificially "stacked" the strata, Peterson had not proposed Walker's overall sequence to be in error. Peterson's strong wording should have been left aside, as "stacked" smacks of too much contrivance. We suspect that the disconnect between the look of Walker's Trench 2 area (as witnessed in photographs) and his stratified archaeology diagram (Figure 1) may be owing to some amount of reliance on Thomas P. Tower's "Malaga Cove Stratigraphic Survey" (Figure 3) which will be discussed later.

Delbert True in a letter to William J. Wallace (15 March 1988, Wallace Collection, Braun Research Library, Autry National Center, Los Angeles) commented on what he supposed was "Tower's sequence." True was confused, however, mistaking a stratigraphic profile rendered by W. B. Sinclair for Richard Van Valkenburgh in 1931 as having come from Tower to Walker in a 1940 letter. In Sinclair's scheme, there are 23.25 ft (7.09 m) of neatly stacked, alternating layers of cultural strata ("living levels"; n = 6) and drift sand (n = 6), with the lowest "living level" positioned atop "bed rock." The rendering is to some degree idealized. True commented, pointing out that he had not seen in his time at the Malaga Cove site (1935– or 1936–1941) "a cut sufficient to document that kind of sequence." True speculated that what he incorrectly took to be "Tower's sequence" was "a composite developed from some digging and some exposures in various places along the seaward side of the dune." Had True been privy to Tower's actual sequence, he undoubtedly would have suggested that it too represented a composite. In this, we are inclined to concur.

At the end of his letter to Wallace, True wrote:

> … <u>your assessment of the mound is almost certainly correct</u>. A lot of different things happening in different places and the nice neat stratigraphy may have only existed in a couple of places, if at all. I do not consider the "lenses" we observed as stratigraphic since they were all well within the very top of what must have been Walker's level IV. They were layered, but that's about all that can be said.

At this point we might all agree that LAN-138 offered a mixed bag of stratigraphic arrangements; that is, in places there seemed to be relatively easy to understand profiles, but elsewhere there were varied combinations of cultural events precipitated by those periodic shifts of activities apparent to Wallace. Walker pursued an intellectually honest effort to, among other things, construct a coherent master sequence of cultural events at LAN-138, and it must have seemed that the stratigraphy seen in Trench 2 was helpful to confirmation of his model. Unfortunately, limited understanding of regional prehistory in those days prevented Walker from

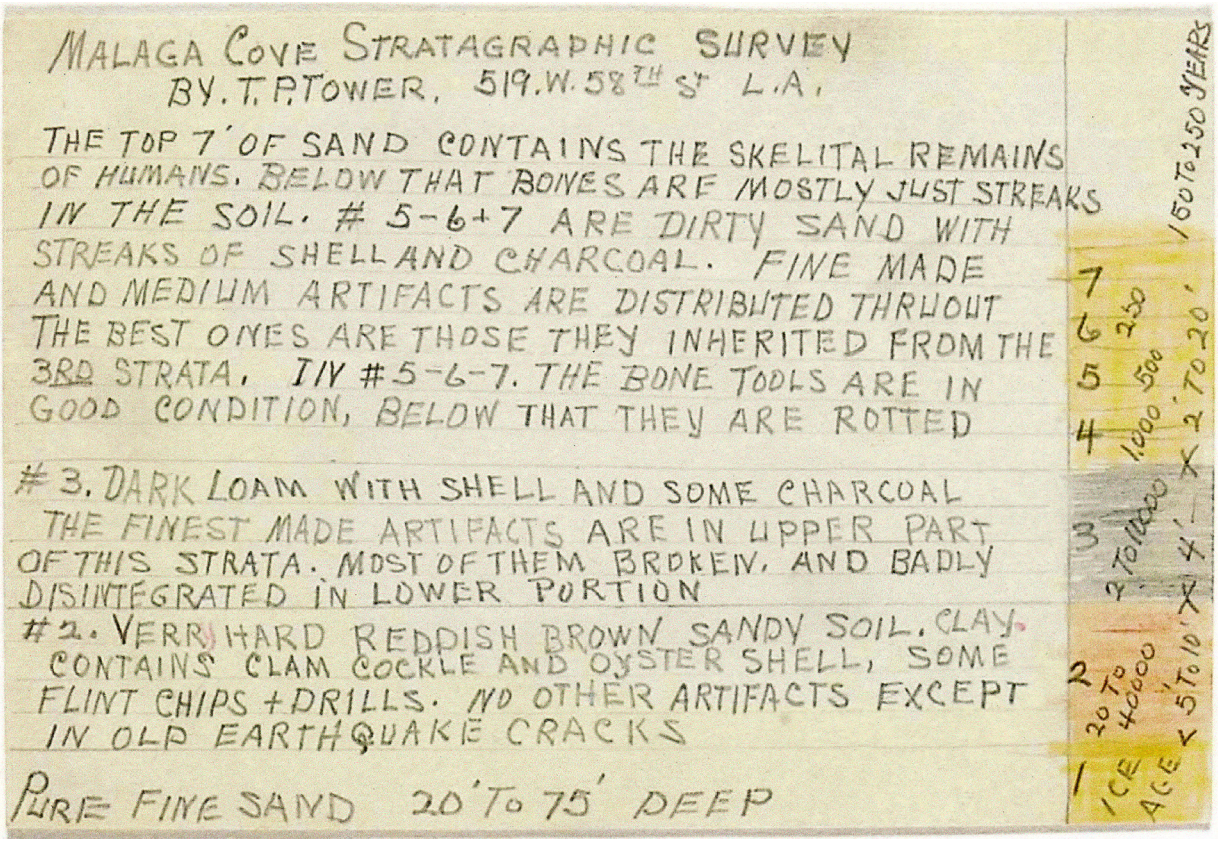

Figure 3. Thomas Tower's ca. 1940 Stratigraphic Survey of the Malaga Cove Site. Edwin F. Walker Collection, Braun Research Library, Autry National Center; MS.220.8, Malaga Cove Site, volume 2, page 026.

recognizing, for instance, that Level 2 was likely a mix of cultural components (more on this later).

A major point of interest is that relic collector Thomas Tower (see Koerper, Hunter, and Snyder, previous article, this *Quarterly* double-issue) provided Mark Harrington with a stratigraphic sketch of the Malaga Cove site (Figure 3) (T. Tower to M. R. Harrington 2 July 1940, letter, E. Walker notebook, Braun Research Library, Autry National Center, Los Angeles). At the time, Tower was clearly aware of Walker's (1937) *Masterkey* article, but it is likely that Tower's "Stratigraphy Survey" drew mostly or entirely from his own contemplations of ordering at LAN-138. One might wonder what Walker took away from the diagram that Tower sent to Mark Harrington. Perhaps it motivated Walker to formulate his own sketch of site stratigraphy if he had not already done so. If Walker had already sketched out his stratigraphic profile, then perhaps Tower's scheme served as some confirmation of Walker's view/hope that the strata reflected comprehensible chronological ordering.

We wonder whether Walker tapped significantly into the observations of some of the relic collectors who searched LAN-138, this in order to help synthesize his presence-absence seriation of categories of cultural remains (Figure 4) recovered at the Malaga Cove site, a means to quickly characterize the several levels and validate their temporal arrangement. We were puzzled that Walker (1951:39) eschewed quantification for his "Table Showing Materials Obtained from the

TABLE SHOWING MATERIALS OBTAINED
FROM THE FOUR CULTURAL LEVELS AT MALAGA COVE

	Level 4	Level 3	Level 2	Level 1
Arrowpoints	*			
Arrowshaft straighteners	*			
Basker-hopper mortars	*			
Flexed burials	*			
Painted gaming (?) stones	*			
Glass trade beads at very top	*			
Large food mortars and pestles	*	*		
Shell fishhooks	*	*		
Drills for making fishhooks	*	*		
Large stones, asphaltum covered	*	*		
Small medicine mortars and pestles	*	*	*	
Ceremonial cairns	*	*	*	
Soapstone	*	*	*	
Food shells, calcined	*	*	*	
Abalone bowls, asphaltum plugged	*	*	*	*
Abalone rim scoops	*	*	*	*
Shell ornaments	*	*	*	*
Basket pebbles (small), asphaltum-coated	*	*	*	*
Flat stones (gaming pieces?)	*	*	*	*
Tiny pebbles (rattle pebbles?)	*	*	*	*
Clamshell discs (gaming pieces?)	*	*	*	*
Red ochre (red paint)	*	*	*	*
Diatomaceous earth (white paint)	*	*	*	*
Chert knives and scrapers	*	*	*	*
Scored or incised stones	*	*	*	*
Hammerstones	*	*	*	*
Pounders and choppers of stone	*	*	*	*
Bone utensils	*	*	*	*
Bone beads	*	*	*	*
Sea-lion ear cones	*	*	*	*
Balance bones from white sea-bass	*	*	*	*
Fish and animal bones	*	*	*	*
Large projectile points	*			*
Cremations		*		
Reburials			*	
Metates and manos			*	
Microliths				*
Scrapers of scallop shells				*
Scoops of mussel shells				*
Food shells not calcined				*

Figure 4. Edwin Walker's (1951:39) cultural materials matrix for Levels 4 through 1. Asterisks indicate presence of a category of object by level.

Four Cultural Levels at Malaga Cove" (see Figure 4). We were privy to only nine pages of Walker's field catalog with their 355 entries. Sutton and Grenda (2012:140, Note 1) reported that the artifact catalog at the Autry National Center shows 923 object records and that the "processing of the collection into their system is incomplete at this time" (we refer to the nine pages as the "short field catalog"). When all information becomes available, counts for each category of object by level ought to be superimposed onto Walker's cultural materials matrix (see Figure 4) as a check of concordance between presence/absence entries and counts. Such may be a means of judging whether Walker possibly incorporated relic hunters' recollections or information from other documentation into his seriation. If it turns out that Walker did such incorporation, then we wonder whether he assumed that some level of ambiguity characterized others' numerations, this accounting, perhaps, for a decision to reject quantification for the matrix table. More immediately, did Walker give serious consideration to information in Tower's manuscript and letters or verbal communications?

We know with certainty that Walker incorporated relic collector Dr. F. H. Racer's observations of painted flat rocks into Walker's (1951:63–68) discussion of Level 4 (notes on such occur at the end of this article). We suppose Walker swapped information with relic hunter Joseph Barbieri (see Walker 1951:63); also, he was friendly with Willy Stahl, another prolific artifact collector (see T. Tower to E. Walker, letter, 5 February 1941, E. Walker notebook, Braun Research Library, Autry National Center, Los Angeles). Indeed, Racer and Stahl were field volunteers on Walker's 1936–1937 dig.

Level 1

Walker (1951:32, 38, 51; also 1937:212–213) briefly described the geology/soils of cultural Level 1, noting that it was in the upper three feet of a non-marine terrace built of yellow, cliff-fed detritus. He also referred to this as the "light tan-colored, cliff-fed detritus," which was slightly stained in a few places. Woodring and his associates (1946:107–108) reported that Level 1 was "contaminated with much black organic material." It was extremely hard soil.

Thomas Tower (1942) described his Stratum 2 (same as Walker's Level 1) as being "very hard reddish brown" and "hard red sand clay." He wrote, "Here we find eoliths, flint chips, crude clam shell scrapers, and very crude stone tranchets. That is all. This varies a small bit from the ideas of Mr. Walker of the Southwest Museum but the difference is minor" (Tower 1942). In reporting "tranchets," his frame of reference was possibly those European Mesolithic or Neolithic tools having horizontal, chisel-like cutting edges (crude adzes).

Walker (1937, 1951) saw Level 1 as containing the residuum of seasonal villagers who subsisted largely on shellfish. The food shells were not calcined, unlike food shell from the other three levels. There was a great variety of artifacts—worked shells (scrapers and scoops) and an array of microliths (tiny drills, knives, and scrapers) that were finely knapped using bone and/or antler flakers. Some microliths were said to function in the production of shell and bone beads and other kinds of ornaments. The "short field catalog" available to us records several spire-ground *Olivella* beads, but not so many as shown in Walker's Plate 11 (n = 10). The Level 1 "shell people" also manufactured large "rude" knives and scrapers using small hammer stones. There were pounders and choppers. Bone harpoon barbs were recovered.

The occupants of Level 1 knew the value of asphaltum, especially for the manufacture of baskets intended to hold liquids. Several tarring pebbles were noted in the field catalog. Asphaltum "plugs" were recovered, certain evidence that abalone dishes' excurrent holes were stopped with the fossil bitumen.

Some abalone shells functioned to store the tar. From the presence of shell inlays, one must suppose some sort of mastic, most probably asphaltum and/or vegetal pitch. Four clam shell inlays are seen in Walker's (1951) Plate 12.

Tiny pebbles may have served as percussors in rattles. Pigment stones included red ochre and white diatomaceous earth. Clam shell discs reported in the field catalog were possible gaming pieces.

These "shell people" lacked soapstone, shell fishhooks, and the bow and arrow. Manos, metates, mortars, and pestles did not turn up in Walker's investigations of Level 1. Neither were there burials or cremations. He inferred that the occupiers of Level 1 were not unlike Malcolm Rogers' (1929) "Scraper People." Rogers (1939, 1945) eventually changed out "Scraper Maker Culture," adopting instead "San Dieguito."

On January 11, 1937, Walker took a trip to San Diego to confer with Rogers about Rogers' "four prehistoric California cultures" (Walker 1935–1937:7), but was most interested in the earliest peoples. It is easy to see in Walker's 1951 Malaga Cove write-up that Level 1 was special to him. Farmer (n.d. 1937) observed that, "Mr. Walker's main objective when he started was to investigate what appeared to be the lowest level of the site. This was accomplished in Trench #2." It is obvious that Walker wanted Level 1 to be of late Pleistocene age. This explains his attention to articles authored by Woodring (e.g., Woodring et al. 1936; Woodring et al. 1946), whom he hosted on site in 1938 (W. P Woodring to E. F. Walker, letter, 22 January 1938, Walker notebook, Braun Research Library, Autry National Center, Los Angeles).

Questions that arose concerning the merit of the Level 1 assemblage and its chronological placement were recently addressed by Sutton and Grenda (2012) who supported Wallace's (1985:142) position of Level 1 as valid; that is, Level 1 was not something that resulted from mixing with Level 2. Wallace (1984:2) saw this lowest component as similar to San Dieguito culture. Indeed, Wallace's quick excavations yielded much that appeared to be of San Dieguito culture—three fragments of large leaf-shaped points (see Wallace 1985:Figure 2), leaf-shaped knives, scrapers, and choppers. Wallace noted that these three categories of objects were found during earlier research, and Wallace (1985:142) scolded Walker for scarcely mentioning them. Wallace did not recover the kinds of microliths or worked shells that Walker regarded as Level 1 diagnostics.

If Level 1 is truly "a genuine early component," then it perhaps represents a pre-Encinitas occupation (see Sutton and Gardner 2010) dating earlier than 8500 BP. That is, it might be "the earliest known occupation of the Los Angeles Basin" (Sutton and Grenda 2012:140). Here, the issue involves the provenience of a clam shell ^{14}C sample (LJ-3) that yielded an uncorrected age of 6510 ± 200 RCYBP (Hubbs et al. 1960:201) (see Table 1). Sutton and Grenda (2012:127, 138) considered that the mollusk sample might have been from the lower end of the sand dune (Level 2) and not from the underlying non-marine terrace (Level 1), although they did not dismiss the possibility that the LJ-3 ^{14}C date might relate to Level 1. Because the date was at variance with what Wallace (1985:142) expected for Walker's Level 1, where the artifacts seemed not unlike those of San Dieguito peoples, Wallace saw the LJ-3 date, which was "well short" of 6000 BC, as "probably in error." The enigma surrounding the sample prompted Sutton and Grenda (2012:124) to state that "no direct chronometric data are available for Level 1."

Here, we revisit the LJ-3 sample description in "La Jolla Natural Radiocarbon Measurements" (Hubbs et al. 1960:201). When the La Jolla radiocarbon team referred to the "next-to-lowermost soil horizon that contains evidence of human occupation," this referent

Table 1. Radiocarbon Age Corrections for the Malaga Cove Site (CA-LAN-138).

Lab Number	Level	Material	Measured Age (RCYBP)	Conventional Age BP $\delta^{13}C$ Adjusted Value[a]	Calibrated Age BP[b,c,d]
Beta-353138	Level 2	bone (collagen)	430 ± 30	590 ± 30 -15.2 ‰	590 (575) 640 540 (550) 560
UCR-2384D (Taylor 1994)	Level 4	marine shell*	—	870 ± 40 +1.25 ‰	245 (294) 376
Beta-349125	Level 2	marine shell*	930 ± 30	1360 ± 30 +1.2 ‰	1226 (1262) 1302
UCLA-1008B (R. Berger 1965)	—	bone	1790 ± 160	1886 ± 160 -19.0 ± 2.5 ‰	1614 (1827) 1998
UCR-2384A (Taylor 1994)	Level 1	marine shell*	—	6080 ± 55 +0.05 ‰	6201 (6274) 6337
LJ-3 (Hubbs et al. 1960)	Level 1	marine shell*	6510 ± 200	6930 ± 200 +1.25 ‰	6997 (7202) 7417
UCR-2372 (Taylor 1994)	Level 1	marine shell*	—	7140 ± 120 -0.56 ‰	7312 (7420) 7536
UCR-1196	Level 1?	marine shell*	7130 ± 240	7550 ± 240 +1.25 ‰	7757 (7800) 8016

*Assumed delta-R (Δ-R) for marine upwelling correction (-225 ± 35 years).
[a]$\delta^{13}C$ ($^{13}C/^{12}C$), -25.0 ‰ PDB; +1.25 $\delta^{13}C$ assumed for unknown values on marine shell (Taylor 1987:122-123).
[b]INTCAL09, Calib REV 7.0 Stuiver and Reimer 1993, Reimer et al. 2009.
[c] MARINE09, Reimer et al. 2009.
[d]1 σ Cal BP Age Range (68.3%).

was decidedly not Level 2, but rather it was the soil that:

> … seems to represent the nonmarine terrace-fill interpreted … as Pleistocene, for it grades downward into the C layer that overlies the Miocene rock and underlies a blackish sand stratum at the base of the overlying dune formation; it also appears to correspond in part with Walker's "microlith"-containing "level 1," although, at the point where our sample was taken, the shells were scattered through a greater depth, rather than being densely congregated, in the uppermost 2 ft of the detritus formation, to form the "Shell Village" of Walker. A few midden shells and a few chips were found in the underlying C soil layer, which seems to correspond with what Walker interpreted as a sterile horizon [Hubbs et al. 1960:201].

We assumed a mean $\delta^{13}C$ value of +1.25‰ to derive a conventional age estimate of 6930 ± 200 BP for sample LJ-3. The calibrated age was calculated to Cal BP 6997 (7202) 7417.[4]

An uncorrected date of 7130 ± 240 RCYBP (UCR-1196) was derived from sea cliff shell (see Table 1), but in 1988 R. E. Taylor communicated to Jon Erlandson (1994:224) that the stratigraphic context of the sample was not known. Assuming a $\delta^{13}C$ value of +1.25‰ the conventional age is 7550 ± 240 BP. The calibrated age is Cal BP 7757 (7800) 8016. As an aside, inexplicably, Sara Frazier (2000:170) reported that Walker gave a date of 7000 BP for Level 1. In fact, there are no radiocarbon data in Walker's (1951) chapter on the Malaga Cove site.

In one of the draft volumes produced for the Bolsa Chica Archaeological Project investigations that was not available to Sutton and Grenda (Wiley and Gibson 2013), there was reproduced a January 18, 1994 letter from R. E. Taylor to William Wallace (see also Desautels-Wiley and Koerper 2013). In it, Dr. Taylor reported dates for two Level 1 samples of marine shell collected in 1936 by Walker and submitted by Wallace to the UCR Radiocarbon Laboratory (see Table 1). The dates were normalized, but Taylor cautioned that the conventional ages had not been corrected for upwelling. The conventional age for UCR-2384A is 6080 ± 55 BP ($\delta^{13}C$ = +0.05‰). The conventional age for UCR-2372 is 7140 ± 120 BP ($\delta^{13}C$ = -0.56‰). The calibrated age for sample UCR-2384A is Cal BP 6201 (6274) 6337. The calibrated age for sample UCR-2372 is Cal BP 7312 (7420) 7536. These dates fall to the Topanga I phase of the Encinitas Tradition (see Sutton and Gardner 2010). Note that none of the four early ^{14}C dates discussed above reach into San Dieguito times.

Level 2

Edwin Walker's Investigations

Walker's (1951:32, 38, 51, also 1937:213-214) Level 2, in the lowest "two feet" of the sand dune, was described as closely compacted and stained very black by fires. He also referred to it as "blackened sand." This "base of a sand-dune" was "almost solidified by camp débris."

According to Walker (1951) the 2 ft (.6 m) thick midden of Level 2 contained an extensive settlement whose most distinguishing artifacts were manos and metates, a great many recovered from ceremonial cairns in broken and fire-altered condition. There are 17 entries relating to milling equipment in the "short field catalog." He reported that no other level produced such grinding equipment. Walker recognized parallels between these Level 2 "metate people," as he called them, and those people responsible for the "Oak Grove" culture, a concept put forth by David Banks Rogers (see 1929:342–355). Indeed, Rogers visited Walker at the Malaga Cove site and pronounced Level 2 a manifestation of "Oak Grove" (Walker 1951:51). There was an absence of arrowheads and shell fishhooks. Knives and scrapers were documented as were ovate pounders and a hammerstone. Walker's matrix table (Figure 4) for cultural items indicates the presence of at least one specimen from the following categories: bone beads, bone tools, scored and incised stones, tiny pebbles for rattles, asphaltum plugged abalone pots, shell ornaments, and abalone rim scoops. Shell fishhooks and drills for making them were indicated as absent from Level 2, but they appear in Levels 3 and 4. Pigment minerals were present as was a large sandstone gorget with four drill holes (Walker 1951:Plate 15a).

Cultural separation of Walker's levels was based partly on mortuary customs. Level 2 people practiced reburial, Level 3 people practiced cremation, and in Level 4 the deceased were buried in a flexed position. Among the Level 2 mortuary remains reported by Walker (1951:53), there was the reburial feature that contained a granite discoidal. Other discoidals from Level 2 were also made of granite. They averaged 1.5 in (3.8 cm) in thickness and 3.75 in (9.5 cm) in diameter, were fire-affected, and showed traces of red pigment (Farmer 1953:178). Only one granite discoidal appears in the "short field catalog," where it is referred to as a "chunky stone."

Also from Level 2 there were two soapstone "spatula-like" objects which Walker (1951:53,58, Plate 15b, 60) took to be possible ceremonial wands. They have been referred to as "Meighan spikes" (Sutton 2010:22); the 7.5 in (190 mm) spike-like specimen of Walker's Plate 15b was illustrated in Koerper and Desautels-Wiley (2012:66–69, Figure 27) for its resemblance to the killer whale. The second "spatula-like" artifact is approximately 4 in (100 mm) long;

it is shown in situ in two photographs in Walker's notebook, on file at the Braun Research Library, Autry National Center (Negatives Nos. 9935 and 9937). The two were found near one another, close to a "tiny [granite] medicine (?) mortar holding a pestle" (Walker 1951:Plate 16a) and close to a female burial.

In 1953 relic collector Joe Cote discovered in Level 2 three geometrically incised tablets, this according to Gordon Pond (1968). Sutton and Grenda (2012:127) attributed these tablets to Level 3. They also indicated that Pond's reference to "great numbers of steatite artifacts" referred to Level 3 when Pond wrote "second level" (see Sutton and Grenda 2012:126–127). Perhaps Sutton and Grenda made an adjustment for what they possibly believed was some confusion on Pond's part regarding site levels. They did state later that Pond had conflated Walker's Level 2 with Level 1, and so perhaps Sutton and Grenda replaced Pond's reference to the second level with "Level 3." Sutton and Grenda's notice of steatite for Level 2 is fleeting; they mentioned one of the spatula-like objects.

Walker (1951:60) reported finding a fragment of a paint cup that had been crafted out of a rim sherd from a steatite bowl, and he also recovered the remains of half a cooking slab, or comal, which had been shaped out of a large fragment of a soapstone bowl. Steatite bowls and comals, and perhaps ceremonial steatite objects, are out of place in any Oak Grove context or, in current terms, any Topanga phase of the Encinitas Tradition (see Sutton and Gardner 2010; Sutton 2010). Indeed, steatite bowls are probably not a fit to the earlier Angeles phases of the Del Rey Tradition (see Sutton 2010).

Sutton and Grenda (2012:133) labeled Level 2 as an Encinitas Tradition component (see also Sutton and Gardner 2010; Sutton 2010:9, Figure 3). This assessment perhaps rests partly on the possibility that the shell sample (LJ-3) that dated at 6510 ± 200 RCYBP (Hubbs et al. 1960:201) was not from Level 1 but rather from Level 2. As per a previous discussion, this and two, possibly three, similar radiocarbon dates are attributable to occupations antedating Level 2.

Sutton and Grenda favored Level 2 as Encinitas owing, for instance, to the presence of milling equipment and cairn burials. They were also persuaded by the presence of discoidals (see Walker 1951; Farmer 1953:178). After all, Sutton and Gardner (2010:8, Table 1) deemed "early discoidals" to be Topanga I phase artifacts and late discoidals to be Topanga 2 phase (5000–3500 BP) artifacts. Underbrink and Koerper (2006:117) distinguished between "early discoidals" and "late discoidals," noting that a sizeable proportion of the earlier kinds were fashioned of vesicular igneous stone and that the later kinds were often granitic or other sorts of hard stones that can be worked to smooth, even polished, finishes.

We believe the amount of steatite demonstrates that Level 2 contained manifestations of certain phases of the Angeles Pattern of the Del Rey Tradition. Angeles I signals the intrusion beginning about 3,500 years ago of a proto-Takic group, specifically the proto-Gab/Cupan, into coastal Los Angeles and Orange counties, replacing Topanga II peoples (a Hokan entity that evolved into a proto-Yuman entity). Topanga III culture ran an additional one and a half millennia in the Santa Monica Mountains, but these people were eventually absorbed or replaced by the Chumash and/or Gabrielino; some proto-Gab/Cupan may have arrived to the southern Channel Islands as early as about 3200 BP (Sutton 2009, 2010; Sutton and Gardner 2010). Sutton (2010:8, Table 1) posited that during Angeles I (3500–2600 BP) there began large-scale trade in small steatite artifacts (effigies, pipes, and beads). Such trade helps characterize subsequent phases. Interestingly, birdstone effigies (mostly steatite) first appear in Angeles IV. In Angeles V (800–450 BP) "trade of steatite artifacts from the southern Channel Islands becomes more intensive and extensive, with the addition or increase in more

and larger artifacts, such as vessels and comals [and] larger and more elaborate effigies."

Thomas Tower's Excavations

On his stratigraphic profile (Figure 3), Thomas Tower indicated his Stratum 3 was a 4 ft thick dark loam with some charcoal. In his 1942 manuscript he indicated a black greasy mixture, 4–6 ft thick, directly atop the red sand clay (his Stratum 2, or Walker's Level 1). Thus, Tower's Stratum 3 is basically Walker's Level 2. Attention was called to the manos and metates at the bottom depths of Stratum 3.

Unlike Walker, Tower perceived that multiple "floors" fit into Stratum 3, but he offered no definition for "floor." He listed many kinds of artifacts that he attributed to "the highest culture known to the Chumash Aborigine." Many of these were objects that he recovered from his 12 "grouped finds," 11 of which were features. Tower's (1942) manuscript focused mainly on the "grouped finds."

Of the 11 features, nine were mortuary related, and seven were deep in Stratum 3 (mostly graves, some dug slightly into Stratum 2 (Walker's Level 1). Descriptions of most of the "grouped finds" offer testimony to the presence of Del Rey Tradition culture, generally of the latter half of the Late Holocene.

Herein, enumerations of various artifacts by "grouped find" are necessarily limited by word count constraints. Only two "grouped finds" (Nos. 6 and 8) are considered below, for the fact of each having contributed an AMS ^{14}C sample. Future studies will take up explication of most of T. P. Tower's other documentations.

Tower had this to report about "Find No. 6:"

> At a depth of four feet in black soil and just on top of the hard red sand clay strata, in a shallow grave scooped out of the red soil I found the following artifacts.
>
> One Haliotis Shell dish.
> One giant Cardium Elatum.
> One fine Hammer stone.
> Two pieces of flat rock finely lined.
> One drill.
> Two Chumash spear points, and
> One Idol head.
> The skeletal remains were streaks of dust.
>
> The Haliotus shell was at the chin and contained some badly decayed fish bones and dirt. The Cardium Elatum (Giant Cockle) lay beneath Haliotis and contained a handful of beads made of the center portion of Olivella shells. The Idol Head and lined rocks lay about where the hands would have been. The other artifacts and broken pieces lay scattered close to the Idol Head. The skeleton lay full length face down head to the northeast. This Cardium Elatum shell is much larger than any of those I have seen recorded. In measuring 175 MM high by 148 MM wide. The shell beads were not the usual kind as they were a cross section of the shell [Tower 1942].

The "handful of beads" was no less than 34 specimens. One of the largest of these *Olivella* barrel beads was selected to be analyzed by Beta Analytic Inc. The sample (Beta-349125) provided a measured ^{14}C age (uncorrected age) of 930 ± 30 RCYBP. The conventional ^{14}C age is 1360 ± 30 BP (δ^{13}C value = +1.2‰). The calibrated age is Cal BP 1226 (1262) 1302 (see Table 1). The bead was manufactured probably within the Angeles IV phase of the Del Rey Tradition.

Tower's reference to flat rocks "finely lined" invokes incised objects, one of which might be specimen TT#15, the whale effigy or whale-like effigy seen in Figures 9 and 10 of the previous article in this

Quarterly double-issue. Another possibility is specimen TT#14, the centerpiece of an article now in progress. Yet, another possibility is the tablet seen in Figure 5 (middle shelf, second object from right). Unfortunately it is not possible to attribute any "finely lined" flat stone, with which we have a visual familiarity, to either of the incised artifacts recorded for "Find No. 6." The remaining items in Tower's reporting of No. 6 cannot presently be accounted for.

The other AMS sample was from "Find No. 8," which Tower described:

> While excavating between two pot holes dug many years ago I came upon this queer burial:
>
> The early excavation had removed the lower extremity of the skeleton leaving the body and head, or as happened here two heads. It lay face down, heads to the west, the skulls lay side by side close together, the lower portions were in the red sand clay and entirely rotted. Even the teeth broke into fine slivers as I tried to remove them. The backs of the skulls were in the black greasy soil and I saved some portions of them. The other bones crumbled into dust. About the center of the body on top of the skeleton lay a fine grained, nicely shaped, yellow sandstone bowl, 4" by 4-3/4" inside diameter and 3" deep, it contained dirt and fish bones. On account of its age it was necessary to shellac it immediately to save it. Beside the bowl lay a crude anvil hammer stone, a small pestle, a round flat piece of slate schist about 2" in diameter, a piece of crystal quartz. Also many broken pieces of stone artifacts [Tower 1942].

An AMS date was run on a bone collagen sample (Beta-353138) extracted from a small fragment of upper jaw belonging to one of the skeletons. The uncorrected age is 430 ± 30 RCYBP (see Table 1). The conventional ^{14}C age is 590 ± 30 BP ($\delta^{13}C$ value = -15.2‰). The calibrated age is Cal BP 590 (575) 640 and Cal BP 540 (550) 560; this falls to the Angeles V phase of the Del Rey Tradition.

Tower's descriptions of burials from Stratum 3/Level 2 indicate most interments were not flexed. "Find No. 4" contained a flexed burial, and "Find No. 2" was reported as a reburial.

From the relic collector's descriptions there is a sense that Stratum 3/Level 2 contained manifestations of both Encinitas and Del Rey Traditions. Walker's descriptions, we believe, would lead to the same conclusion.

Levels 3 and 4

Walker (1951:32, 35, 38, 60) characterized Level 3 midden as consisting of dune-sand with sufficient particles of charcoal to impart a gray cast to the soil. He also observed that the sand was loosely compacted. Level 4 was much the same, only less compact.

Thomas Tower's Strata 4, 5, 6, and 7 (Figure 3) cover what Walker labeled Levels 3 and 4. Tower noted these "sand strata" had a less concentrated inventory of artifacts, so few remains at intervals within the sand as to suggest periodic depopulations caused, he speculated, by disease, war, drought, or other causes. Clearly, these strata were not as rewarding for the relic hunter as the so-called "main floor," or Stratum 3. Stratum 3 held "high culture Chumash" remains. Tower had far less interest in strata above the "main floor," not just for the lower yields of collectibles, but because he saw many of the artifacts as crude compared to their counterparts lower down. He explained that "Chumash" bowls were symmetrical and "finished outside," far superior to the "just plain boulders without any outside finish" encountered

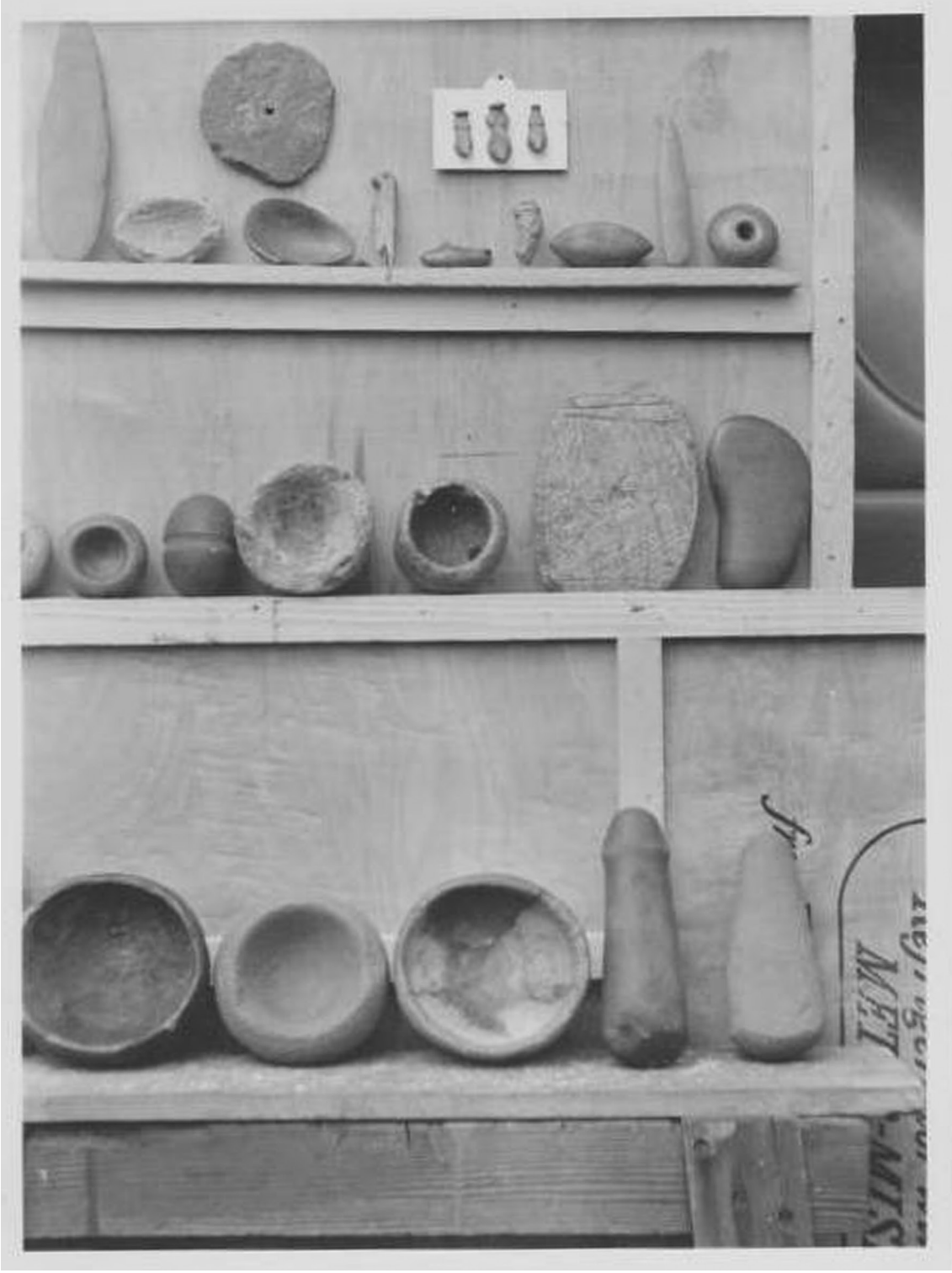

Figure 5. Photograph taken by Thomas Tower I, ca. 1940. Note especially incised tablet on second tier, second from right. Note also Level 2 steatite zoomorphic effigies (possible harbor seal and cetacean) and three anthropomorphic (female) ceramic effigies on the top shelf. Courtesy Thomas Tower III.

above. "Chumash" pestles were well rounded, some with rimmed heads, while those higher up were natural stones whose shapes reflected usage rather than design.

As Tower saw it, the upper strata offered no additions to the inventory of kinds of artifacts. Walker was more attuned to differences and similarities between levels.

Walker (1951) reported no manos or metates in Level 3, but there were large mortars and large pestles, which along with finely made abalone shell fishhooks, provided the most distinguishing artifacts of this 2.4 m thick component. Three fishhooks are recorded in the "short field catalog." No basket-hopper mortars were noted by Walker, this in contrast to Level 4. Small "medicine mortars and pestles" were possessed by Level 3 people.

The stone drills and rasps/files for crafting the hooks out of abalone were duly noted. Similar fishhook manufacturing tools were found in Level 4 by True (1987:275).

Among the shell ornaments there was a single *Olivella* barrel bead noted in the "short field catalog." There was at least one bone bead, and three bone tools were recorded in the "short field catalog." Red and white pigment material was recognized.

Bone harpoon barbs were recorded. A diverse assemblage of marine mammals was also noted in Level 3, including whale, porpoise, sea otter, southern fur seal, Alaska fur seal, and sea lion (Walker 1951:60).

Walker's Level 3 investigations reportedly yielded no arrowheads. This zero count is in dramatic contrast to the 44 arrow points that show up for Level 4 in the "short field catalog." Arrow shaft straighteners are absent, unlike the case for Level 4. There was extensive use of asphaltum. Fire-affected pieces of steatite bowls and steatite mortars were recovered; their diameter estimates were in the range of 25–36 cm. Cremated remains were recognized in reburials.

Wallace regarded the two upper cultural levels as likely of the same occupation; True (1987:281) concurred.

Wallace wrote:

> Open to serious question is Walker's delineation of Levels III and IV, which overlap in most features. Trenches 1 and 2 and the upper two feet of deposit in Trench 3 produced good evidence of occupation postdating the Milling Stone Horizon, but the artifacts found, as well as their depth distribution, did not allow for separation into two assemblages [Wallace 1985:142].

Sutton and Grenda (2012:127) interpreted Level 3 as a development that fit somewhere within the span of the Angeles I through Angeles III phases of the Del Rey Tradition.

Walker (1951:63–65) identified the most "distinguishing" artifacts of Level 4: painted "gaming stones," arrowheads (n = 44, "short field catalog" count), and basket-hopper mortars. Walker readily conceded that the flat waterworn "game stones" bearing dark brown, painted geometric designs (see Walker 1951:Plate 19) might have actually served ritual venues. Van Valkenburgh (1931) recorded similar painted stones from his 1931 excavations.

Interestingly, of those specimens illustrated (Figure 6), at least five were collected by Dr. F. H. Racer, M.D., a frequent visitor to LAN-138. When Racer first reported his Malaga Cove site specimens to Walker, he included pencil sketches of nine painted stones (F. Racer to E. Walker, letter, 9 August 1945, Walker notebook, Braun Library, Autry National

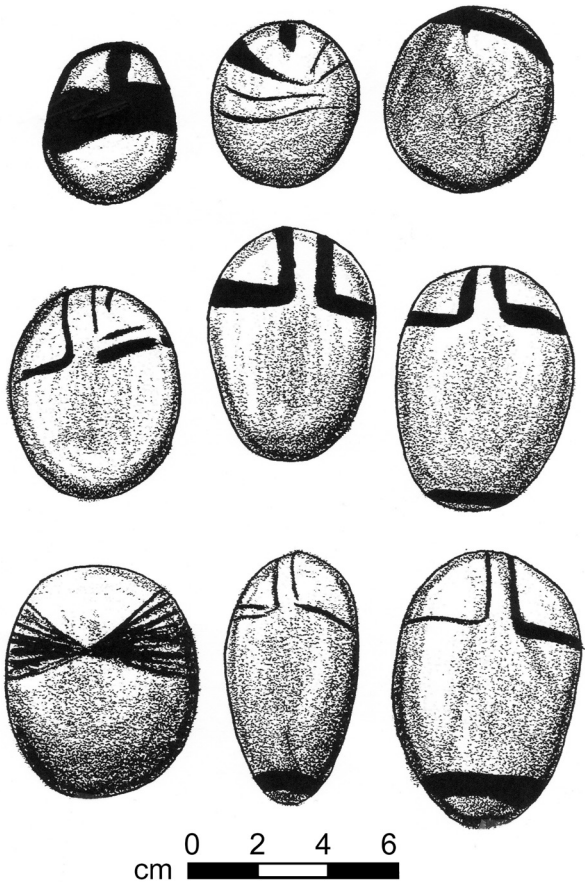

Figure 6. Dark brown colorant adorns flat pebbles from CA-LAN-138. The two largest painted stones in the bottom row were surface collected by Dr. R. F. Racer, M.D. Illustrations reproduced from Walker (1951:67, Plate 19). All drawn by Dr. G. W. Brainerd.

Center, Los Angeles). Racer made reference to additional examples, and he explained that all his painted rocks were surface collected. Subsequent correspondence (F. Racer to E. Walker, letter, 16 January 1948, Walker notebook, Braun Research Library, Autry National Center, Los Angeles) provides Racer's catalog numbers and discovery dates for nine more painted LAN-138 rocks and mentions three others not cataloged. It is uncertain whether any of these additional examples are pictured in Walker's Plate 19. All but two of the 12 artifacts in this second missive were found at site surface. Shortly thereafter, the physician sent another letter announcing one more example recently found at the site (see Figure 7) (F. Racer to E. Walker, letter, 25 March 1948, Walker notebook, Braun Research Library, Autry National Center, Los Angeles). Van Valkenburgh (1931; also Farmer n.d.) previously recovered similar painted stones: "Small hard beach stones showing definite painting and design were recovered. Some of these stones have a small circle of dots painted with hematite. Other stones have distinct designs." If Van Valkenburgh correctly identified the pigment, then clearly some sort of binder was used.

Walker separated the many Level 4 arrowpoints into three categories: leaf-shaped (70 percent), triangular (25 percent), and stemmed (5 percent). True (1987) recovered 26 diagnostic points from Level 4; the ratio of leaf-shaped to triangular-shaped specimens closely mirrored Walker's (1951:63) observations. Of Wallace's (1985:139) nine arrowheads, eight were leaf-shaped, and one was triangular.

Walker reported that most of the basket-hopper mortars were shaped out of granite boulders. True (1987:273, 281) recovered neither basket mortar bases nor painted pebbles.

Walker recovered other kinds of mortars, larger ones, as well as pestles. Also observed were several steatite arrowshaft straighteners, some of which were crafted from bowl sherds. Two made from steatite bowl fragments appear in Walker's (1951) Plate 17. Bone knapping tools, shell fishhooks along with drills used in their manufacture, and glass beads occurred at the top of this last component. Evidence of employment

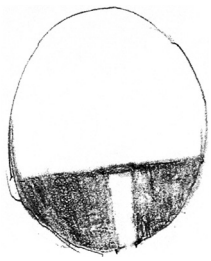

Figure 7. Dark brown paint decorating flat pebble from CA-LAN-138. Collected in 1948 by Dr. R. F. Racer, M.D., who produced this pencil illustration and sent it to Edwin Walker. No scale.

of other soapstone objects (see Wallace 1985:Figure 3) and of asphaltum was ubiquitous.

Walker reported no donut stones from LAN-138, and neither did Wallace (1985) or True (1987). However, Thomas Tower (1942) recovered no fewer than seven of the holed artifacts (see Figure 8).

Numerous flexed burials were documented, but evidence of cremation was sparse. Circa 1877, Palmer (1906:24) observed about 30 burials at the "margin of the bluff." The level must remain unknown. He supposed that the major portion of the cemetery had broken away and fallen into the sea. He neglected to describe the nature of these remains. In 1905 he discovered a male cremation with a "beautiful" mortuary good, an obsidian spearhead, 5.5 in (14.0 cm) long, close to the skull (Palmer 1906:24).

A tule boat discovered in 1880 at LAN-138 and noted by Van Valkenburgh on his 1931 map (see Wallace 1986:24) was undoubtedly an artifact of Level 4 (Sutton and Grenda 2012:127). Sutton and Grenda (2012:127) saw Level 4 as a cultural development that occurred in the Angeles IV to Angeles VI phases of the Del Rey Tradition.

Also of interest is Wallace's (2000) favorable comparison between assemblages of Malaga Cove Level 4 and the Palos Verdes Estates site which lay on a bluff overlooking Malaga Cove at the southern end of Santa Monica Bay. There were some differences; the latter site did have manos and metates, but absent were arrowshaft straighteners and the "gaming stones" bearing painted designs.

Of the five Late Holocene ^{14}C dates for LAN-138 (see Table 1), only one, the youngest, is attributed with certainty to Level 4. The two samples from Level 2 were previously discussed. William Wallace submitted Level 4 marine shell collected in 1936 by Edwin Walker to the UCR Radiocarbon Laboratory. Sample

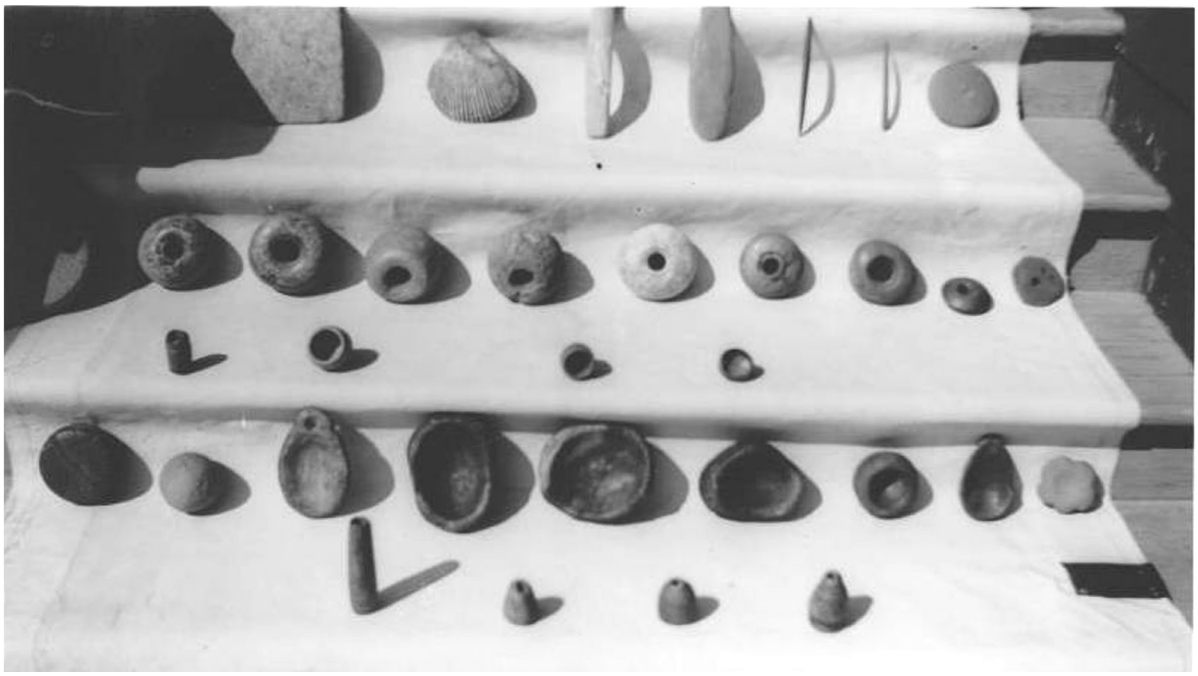

Figure 8. Photograph taken by Thomas Tower I. Note the number of donut stones on the middle step. The majority of artifacts are from Walker's Level 2, or Tower's Stratum 3. Courtesy Thomas Tower III.

UCR-2384D yielded a date, when normalized for $\delta^{13}C$ value (+1.20‰), of 870 ± 40 BP (R. E. Taylor to W. Wallace, letter, 18 January 1994, Wallace folder, Braun Research Library, Autry National Center, Los Angeles). The calibrated age works out to Cal BP 245 (294) 376. This falls to the Angeles V phase of the Del Rey Tradition (see Sutton 2010:Table 1, Figure 3). Two other samples falling to the Late Holocene were human bone, recovered on an LAN-138 bluff by two students from Los Angeles Harbor College in 1965 (see Reiter 1984:13). The level is unknown. The students brought the bones and teeth of an adult male (informally named "Palos Verdes Man") to Dr. Martin Reiter of the school's Geology Department. He submitted two bone samples (UCLA-10008A and 10008B) to the Isotope Laboratory, Institute of Geophysics and Planetary Physics, University of California, Los Angeles. The conventional age of sample UCLA-1008B was 1790 ± 160 RCYBP (R. Berger to M. Reiter, letter, 8 November 1965, PVIC records, Rancho Palos Verdes, Los Angeles County). Sample UCLA-1008A was not treated for removal of humic acids and gave a much younger age of about 200 years (see also Berger and Libby 1966:471). We estimated the conventional ^{14}C age from the UCLA-10008B by using a set of $\delta^{13}C$ averages (-19.0 ± 2.5) from Taylor (1987:123) to adjust for a small age difference, or 96 years, which differs from other terrestrial fauna. It would have been better to have mass spectrometry values since it is likely that there was a high proportion of marine carbon in the diet, but such calibrations were not applied in 1965. The conventional age works out to 1886 ± 160 BP (see Table 1). The calibrated age is Cal BP 1614 (1827) 1998—more probably falling to Angeles II than Angeles III of the Del Rey Tradition.

Summary and Concluding Remarks

Descriptive treatment of LAN-138 artifacts loaned to the Point Vicente Interpretive Center by the family of Thomas P. Tower I led to scrutiny of the late relic collector's previously untapped documentations. These resources included a manuscript that provided enumerations and discussions of Tower's major finds at the Malaga Cove site and letters, photographs, and a colorized stratigraphic profile (Figure 3), all items sent by Tower to Edwin Walker at the Southwest Museum, Los Angeles; all proved productive for addressing issues regarding Walker's (1937, 1951) formulation of cultural sequence at the site (see Wallace 1984, 1985; Peterson 2008; Sutton and Grenda 2012).

Additional data accumulated owing to the cooperation and generosity of Thomas Tower III, custodian of artifacts not loaned to the PVIC and of ca. 1941 photographic images taken by his grandfather. This grandson measured and photographed specimens that remain with the family. Further, two ^{14}C datable samples from Tower's Stratum 3 (Walker's Level 2) were made available for AMS analysis by Beta Analytic Inc. This allowed for the only Level 2 radiocarbon determinations.

We were taken aback by the amount of steatite Walker (1951) reported for Level 2. It seemed at odds with an assignment of Level 2 to Wallace's (1955) Milling Stone Horizon or Sutton and Gardner's (2010) Encinitas Tradition. However, other objects (e.g., discoidals, cairn burials) suggested some presence of a Middle Holocene component. The volume of steatite documented by Tower for Stratum 3/Level 2 and his observation, for instance, of discoidals, gave credence to the idea that the level held both Late Holocene and Middle Holocene artifacts. The two Stratum 3/Level 2 radiocarbon dates fall within the latter half of the Del Rey Tradition. We do not believe that any of the ^{14}C samples that yielded the four earliest ^{14}C dates should be attributed to Level 2. All postdate San Dieguito culture, falling to the Topanga I phase of the Encinitas Tradition (see Sutton and Gardner 2010).

Sutton and Grenda's (2012) study concluded that Level 1 was a valid cultural entity. Thomas Tower's observations add support to the idea that this lev-

el, Tower's Stratum 2, was indeed a genuine early component. Sutton and Grenda also concluded that Walker's "master stratigraphy," driven significantly by observations in the Trench 2 area, while an idealization, was to some degree "valid." Thomas Tower's setoffs of his Stratum 2 from Stratum 3 and of Stratum 3 from Stratum 4 mirror the "master." Tower's treatment of materials from Stratum 4 on up is not a match to Walker's scheme, but it is even more at variance with Wallace's (1985, 1986) notion that delineation of any division within Walker's two upper levels is not possible. Certainly, there was in the mix some potentially confounding horizontal stratigraphy occasioned by what Wallace (1985:142) interpreted as "periodic shifting of residence among sand dunes."

Returning to the subject of idealization, we proposed that Walker perhaps believed he had communicated such for his stratigraphic profile; however the issue over "stacking/fudging" could have been mitigated had Walker reproduced the May 1937 photograph (see Sutton and Grenda 2012:131, Figure 4) and indicated whether or not he saw Level 4 in the image. Given that Level 3 was indicated to be 8 ft thick, we wondered whether Walker might have identified Level 4 as farther east of where it is indicated by Sutton and Grenda (2012) in their Figure 4 (the May 1937 photograph). We did call out certain inattention to detail and some carelessness to Walker's communications. Did anybody else notice that in Walker's Malaga Cove chapter, his Figure 3, showing two atlatl dart points and a chalcedony knife, has nothing to do with LAN-138; rather, that figure belongs in a previous chapter since the three bifaces were recovered on the Porter Ranch in San Fernando (Walker 1951:23, 25).

Walker's interactions with relic collectors were probably beneficial to his purposes, particularly, we suspect, with regard to his cultural materials seriation matrix (see Figure 4), at least for corroborations if not for actual substance. Greater insight into such may emerge when a total field catalog becomes available. Other influences derived from Van Valkenburgh's (1931) notes and from readings of the works of, and even face-to-face communications with, David Banks Rogers and Malcolm Rogers.

Presently underway are additional studies based on Tower's discoveries. They will more completely inform on Level 2. Much of what remains to be investigated involves certain cultural manifestations attributable to the Del Rey Tradition.

We continue to ponder whether Level 1 contained manifestations of the earliest cultural tradition in the Los Angeles Basin. The ^{14}C dates from Level 1 appear a bit too late for San Dieguito culture, unless the Level 1 materials actually signal a terminal San Dieguito occupation. There are earlier dated components in the Los Angeles Basin, as at CA-ORA-64 (Macko 1998:39–42) and at CA-ORA-83 (Couch et al. 2009:148).

There are not the data necessary to demonstrate continuous occupation of the site from its beginnings into the contact period. We see much data to indicate that Level 2 held Del Rey Tradition material, so it is not an exclusively Encinitas (Topanga I) component. While LAN-138 was less than an ideal cultural phenomenon to assume the mantle of type site for coastal southern California, the circumstances for regarding it as such have precipitated no great or lasting impediment to the scientific investigation of regional prehistory.

End Notes

1. Dr. Frank Palmer dug at LAN-138 starting ca. 1877. Some material from this early work went to the Peabody Museum, Harvard University. The next two collections provided, respectively, material for the Field Museum, Chicago, and for Redondo Beach Union High School, Redondo Beach, California. In fact, the haul from the third excavation effort went entirely to the high school in 1917 and is now referred to as the

1917 Palmer Collection, the date marking when the gift was made. Years later, the collection was transferred to the Redondo Beach Historical Society Museum where it resides today. Almost certainly, ownership remains with the school district. The fourth collection emerged from work at the Malaga Cove site in 1905 during an effort of the Southwest Society, under the auspices of the Archaeological Institute of America (Palmer 1906). Some of the artifacts recovered eventually went to the Southwest Museum. In this 1905 work Palmer put in 138 prospect holes and three trenches. He discovered 30 burials. Other early visitors to the site included Paul Schumacher and Steven Bowers, but apparently neither archaeologist did any collecting (see Van Valkenburgh [1931] and Farmer [n.d.]).

2. In 1925 Richard Van Valkenburgh did minor "prospecting" with "test holes" at the Malaga Cove site, and additional small scale testing was done in 1928 and/or 1929 (see Van Valkenburgh [1931] and Farmer [n.d.]). In 1931 Van Valkenburgh directed excavations with the Los Angeles County Museum of Natural Hitory (LACMNH). He never formally wrote up this work, but there are notes from these efforts archived at the museum. He encountered 13 burials and two cremations. Additional observations occurred in 1934 when SERA (State Employment Relief Administration) crews hit cultural materials in the process of widening Catalina Avenue (Los Angeles Times, 13 November 1934). These artifacts went to the LACMNH (Farmer n.d. 2012).

3. The infamous Arthur Sanger (see Koerper and Chace 1995) dug at LAN-138 at some time before 1925, unearthing 20 skeletons. Van Valkenburgh (1931) wrote, "It is reported that the skeletons were found buried in a sitting position knees drawn up under the chin." Van Valkenburgh's use of "reported" may betray a healthy skepticism of anything from Mr. Sanger, perpetrator of many archaeological deceptions. Koerper and Desautels-Wiley (2012:80–83) offer additional insight regarding the fraudulent activities of Arthur Sanger.

4. This article's calibrated age dates are based on Calib 7.0 (see Stuiver and Reimer 1993; Stuiver et al. 1998; Reimer et al. 2004; Reimer et al. 2009).

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