Observations Regarding the Prehistoric Archaeology of Central Baja California

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Abstract

The central peninsula of Baja California has been a focus of major archaeological investigations during the last three decades of the 20th century and the first few years of the twenty-first century. This paper spotlights primarily archaeological work conducted at prehistoric sites at three widely spaced localities in central Baja California near the communities of Mulegé, Guerrero Negro and Bahía de los Angeles. Two localities are on the Gulf coast and one is on the Pacific coast. There is a basic dichotomy expressed in the archaeological record between the two coasts over much of prehistory, but especially during the Comondú period when the record is most evident. There are underlying technological and stylistic similarities in many artifacts throughout the region (i.e., projectile points, milling tools, bone awls, stone pipes or chacuacos, etc.) but with specific locality variations in the overall tool kit and other cultural manifestations such as in rock art, burial/cremation practices, and settlement-subsistence patterns. All three localities express an apparent intensification and diversification in resource use during late prehistory. West coast lagoon use was clearly more transient than were the adaptations to well-watered interior canyons and the rich bays of the central Gulf coast. Highland to coast interactions and movements are quite evident but variable by coast and resource zones richer or poorer in food and water.

Introduction

No region of Baja California is yet immune at the most basic level from archaeological discovery, adventure, and fundamental advances in understanding of past peoples. This is not to say that tremendous strides in archaeological applications have not been made on the peninsula. Furthermore, as has been stated by a number of workers in peninsular archaeology, the fertile research opportunities and unique characteristics of the peninsula's geography will lead, and have led, to discoveries and theory development relevant to students of the discipline working in areas near and far (cf. Hyland 1997; Moore 1999; Porcasi and Fujita 2000; Gutiérrez and Hyland 2002).

Baja California is a land of many contrasts not the least of which is the open Pacific coast on the west side versus the more sheltered, warmer Gulf coast on the east side. Long-term central peninsula archaeological studies by this author through the University of California system in cooperation with the Instituto Nacional de Antropología e Historia (INAH) along and near these opposing coasts offer a venue for discussing discoveries and interpretations of the far-reaching field results. This narrative is a synopsis of various finds with insights offered to fuel new studies and debate regarding the resulting hypotheses and models developed.

There are three localities that form the focus of this paper, the general locations around (1) Bahía de la Concepción/Sierra de Guadalupe, (2) Bahía de los Angeles/Bahía las Animas, and (3) Laguna Ojo de Liebre/Laguna Guerrero Negro/Laguna Manuela (Fig. 1). The first two localities are along the Gulf coast and the last location is along the Pacific coast. All but Bahía de la Concepción and portions of the Sierra de Guadalupe are considered part of the Central Desert as defined by Aschmann (1959), and this location is on the southern fringes of this desert. In each locality there have been systematic and intuitive inventories and documentation of archaeological remains as well as limited subsurface testing. As of 2003-2004, INAH is undertaking extensive archaeological survey, rock art documentation and dating and excavations in the

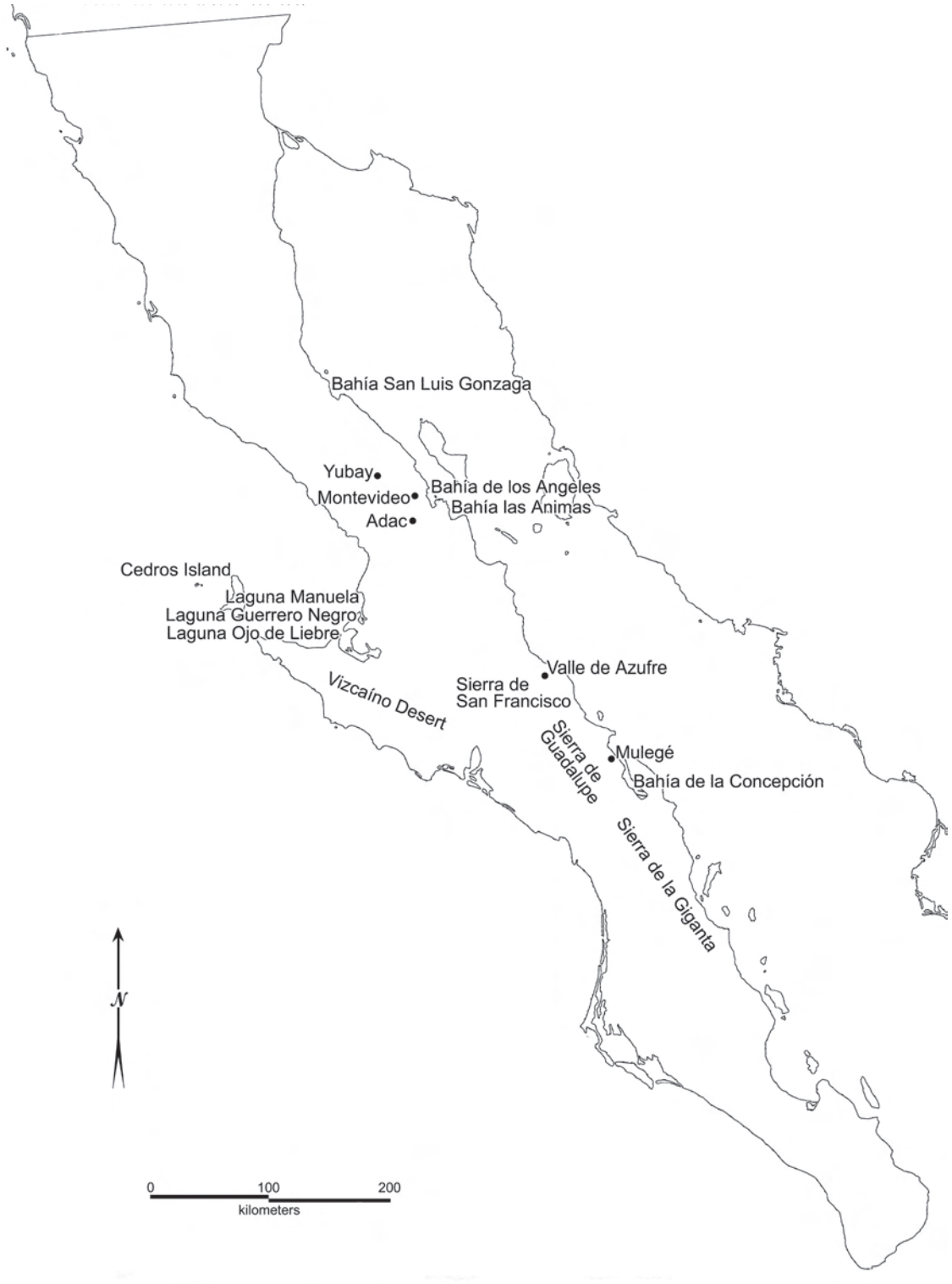

Fig. 1. Map of study localities.

Sierra de Guadalupe (cf. Gutiérrez 2003; Watchman, Gutiérrez, and Hernández 2002). While preliminary results of these INAH workers have been presented in brief as cited above, considerable new information with broad archaeological implications is forthcoming and will likely have a bearing on some of the results offered herein.

The desert regimes have allowed favorable visibility and preservation, and sample designs have not been disappointing—despite some regrettable heritage resource losses or natural obscurity—in revealing the richness of the human record. Archaeological studies at each of these localities have been chronicled in detail (Breiner et al. 1999; Ritter 1979, 1985, 1994, 1995a, 1995b, 1997, 1998, 1999, 2002; Ritter et al. 1994, 1995). Only a brief synopsis of some of the relevant discoveries will be discussed herein. Furthermore, the work of Alvarado Bravo (1999), Hyland (1997), and Gutiérrez and Hyland (2002) in the Central Desert between the principal focus localities must be recognized. These are used in a comparative fashion.

Theoretical Underpinnings

While the passing of decades has served to modify the theoretical focus of these archaeological works, the underlying principles and direction have remained much the same. These include the establishment of a workable culture history; the discovery of variability in human occupation and use across the landscape; the elucidation of ecological relationships with respect to culture and culture changes; and the search for the connectedness of ideology and the social, economic and political underpinnings of past human behavior. The approach is rationalistic and a synthesis of sorts of cultural-ecological, evolutionary and cognitive methods seeking to generate models of hunter-gatherer behavior (cf. Kelly 1995). These studies have benefited considerably by the rich corpus of historic and ethnological observations of native peoples of not only the peninsula but also neighboring deserts and elsewhere (cf. Aschmann 1959, 1966; Baegert 1942; Barco 1988; Bowen 2000; Clavijero 1990; Felger and Moser 1985; Gifford and Lowie 1928; Hicks 1963; McGee 1898; Meigs 1939; Sales 1956; and Shipek 1982 to name only some).

Sampling Approaches to Site Discovery

Each locality listed above was approached somewhat differently based on overall research scope, logistics, environmental diversity, regional familiarity and previous observations/work. The most extensive work was carried out by the author in the Bahía de la Concepción/Sierra de Guadalupe locality (Fig. 2a) in the early 1970s, followed by studies in the 1990s in Bahía las Animas/Bahía de los Angeles (Fig. 2b,c) and then ongoing efforts during the late 1990s and early twenty-first century at the west coast lagoon systems centered on Guerrero Negro (Fig. 2d). Each locality's work has been dominated by coastal inventories. However, the first two localities included interior sampling and investigation.

Bahía de la Concepción/Sierra de Guadalupe

In the locality of Bahía de la Concepción/Sierra de Guadalupe a systematic random sampling scheme of 1 km sq. quadrants was conducted within five kilometer wide spaced transects that ran from the coast west into the Sierra de Guadalupe. In turn these transects crossed geomorphologic/environmental domains designated littoral—including playas and steep mountain fronts edging the coast (Fig. 2a), bajada, interior montane and canyon, highland, and highland/montane ecotone. These domains were selected to detect subregional variations in prehistoric occupation and use while the transects served to disperse the sample into broader north to south environmental zones including the Llano de San Bruno and various portions of Bahía de la Concepción and the mountain and valley settings to the west on the east side of the central peninsular

Fig. 2. (a) Site BS-D25 (talus depressions, trail, quarry) at Arroyo Cordejé near south coast of Bahía de la Concepción. (b) View north of mortuary hills (UC-BC-44, 45, 46) along Bahía las Animas. (c) Rock enclosure at site UC-BC-32 on Cerro de los Angelitos, Bahía de los Angeles. View north. (d). Site LGN-20 looking north. Prehistoric camp debris on older dune ridge.

divide (see Ritter 1985:395-398). Supplemental intuitive or purposive inventories were also conducted along with other studies such as rock art documentation. Three percent of the transect quadrants were inventoried, a problem shared in most peninsular studies: relatively small sample sizes from which to extrapolate hypotheses and models of past human activities (but see Gutiérrez 2003 for an exception).

Together with non-systematic inventories 160 sites were recorded, 117 of which were in the systematic sample. Objectively defined site types include an

array of basalt-silicified tuff and rare obsidian lithic scatters with and without associated non-flaked stone artifacts such as milling stones, or features; midden and non-midden rockshelters; mortuary rockshelters; shellmounds and shell scatters; small quarries; rock art; and an array of historic sites. Site density averaged generally between one and 20 per square kilometer.

Bahía de los Angeles/Bahía las Animas

The sampling program at Bahía de los Angeles was reviewed by the author in a 1998 article (Ritter 1998:13). In summary, the random sample inventory of 0.5 km sq quadrants was oriented along the shoreline adjacent to the upper and lower halves of the bay (Fig. 2c) resulting in coverage of approximately 29% of the present bay shoreline. This inventory resulted in the documentation of 25 sites (ca. 7 sites/sq km.) with an additional 38 sites documented in purposive inventories of other bay areas, the shoreline along Bahía las Animas (Fig. 2b) to the south (Ritter et al. 1994, 1995), and locations within bay uplands and interior zones. Site configurations largely parallel those of Bahía de la Concepción/Sierra de Guadalupe and include the most common (as would be expected in a coastal inventory) type: shell deposits of various sizes, depths and association; as well as lithic scatters; residential rockshelters; one probable storage shelter; rare rock art locations; an interior midden; and a few small quartz and basalt quarries. Numerous rock enclosures (Fig. 3) match those in the vicinity of Bahía de la Concepción, although the Bahía de los Angeles sample includes isolated enclosures lacking surface cultural associations. Although the differences may be attributable to sampling or to observational problems, the Bahía de los Angeles/Bahía las Animas region also includes talus burials (Fig. 4) as well as those in small rockshelters; and trails, cairn complexes, enigmatic cleared pathways and polygons, scratched and rubbed boulders, and far fewer rock art sites.

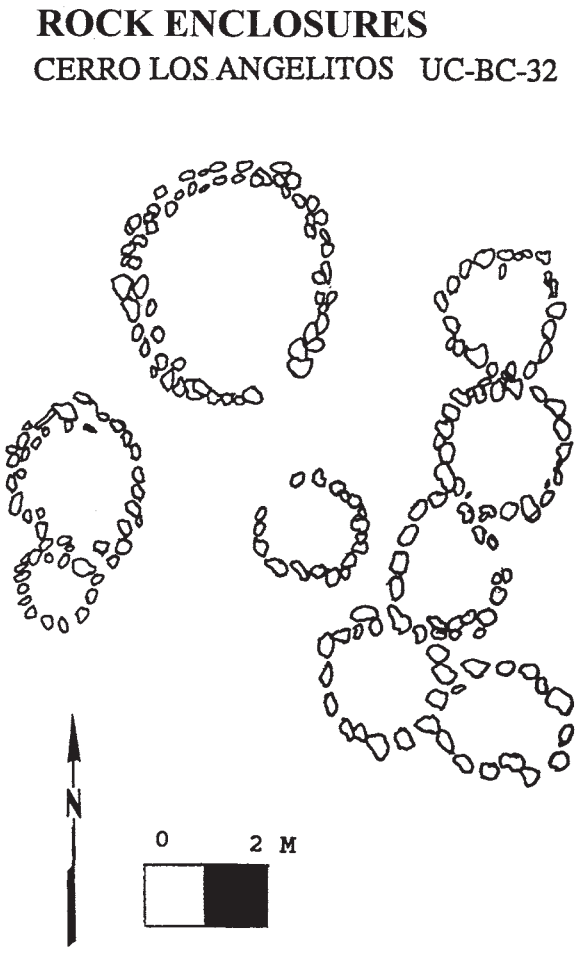

Fig. 3. Rock enclosures at Bahía de los Angeles site UC-BC-32.

These food-rich bay environments with known water supplies represent a contrast to those more expansive central peninsula Gulf coastal stretches where human uses appear more ephemeral. Hyland's (1997) work along the coast between the two locations discussed above serves as an example. The scarcity of fresh water and the archaeological sampling of this Bahía Santa Ana section of the Gulf suggest only short-term forays by mountain people were made to this section for purposes of exploiting the marine resources (Hyland 1997:252).

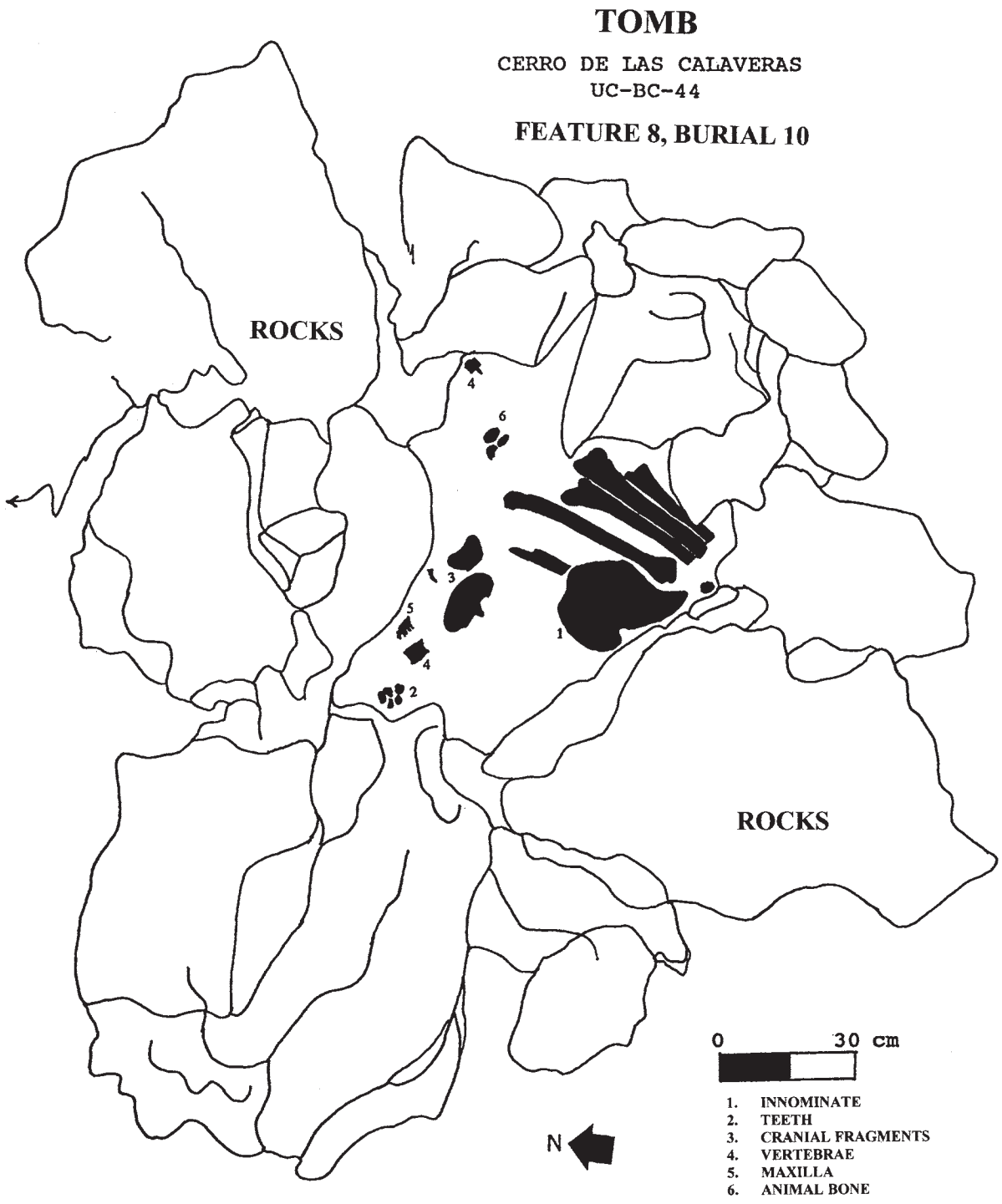

Fig. 4. Burial tomb at site UC-BC-44, Bahía las Animas.

Ojo de Liebre, Guerrero Negro, and Manuela Lagoons

In sharp contrast geographically and archaeologically to the above locations, scientific investigations along the Three Sisters lagoons of Manuela, Guerrero Negro and Ojo de Liebre (Ritter and Payen 1992; Ritter and Burcell 1998; Ritter 1999, 2002) offer a far different pattern of archaeological signatures. Surviving evidence of prehistoric use has in large part been dictated by the sandy Vizcaíno Desert coastal plain environment and scarcity of fresh water compensated in large part by a rich marine environment, a natural world that also appears to be exceptional along the central Pacific coast where long expanses separate major lagoons or multi-lagoon systems (cf. Moore 1999).

The archaeological inventory was concentrated at coastal zones known through previous informal reconnaissance to contain archaeological evidence. The principal work during the first season's work was focused on a block 2.0 by .75 km in size along Laguna Guerrero Negro in which 31 sites were recorded (Ritter 1999). Tracing the pattern of prehistoric occupation and use north of this block along both ancient and more recent closely juxtaposed shorelines of Laguna Manuela, an additional 18 sites were recorded. Finally, near the mouth of Laguna Guerrero Negro widely scattered historic and prehistoric remains within two sites were documented in a large block approximating 5 km by 1.5 km (see Breiner et al. 1999). Earlier informal reconnaissance by local interested citizens has also resulted in the location of numerous additional sites along the shores of Manuela, Guerrero Negro and Ojo de Liebre lagoons (also see Ritter and Payen 1992), and a similar pattern appears present along Laguna San Ignacio to the south (Hyland 1997; personal observations).

The prehistoric and protohistoric sites are generally similar to each other, consisting of small to extensive patches of surface and near-surface (5-10 cm deep) residential and non-residential activity debris dominated by faunal remains (shell and bone) and flaked, battered and ground stone and bone artifacts of a wide array (Fig. 2d). At least one primary inhumation as well as cremations are incorporated into the residential bases. Scattered expedient flaked stone can be found within dune settings near the mouth of Laguna Guerrero Negro where historic flotsam is also concentrated. Archaeological debris can be found within inter-dune pans or flats or on lower, older dune ridges. Present day fresh water sources, other than those that might be derived from fog, are not known, although *batequis* or shallow wells close to the coast are possible. What is not understood in this area is the pattern of site distribution between the central peninsula mountains and the coastal archaeological expressions. Hyland's inventory of the southeastern Vizcaíno desert (1997:215-217) suggests that flaked stone isolates and lithic scatters, some with milling tools, would dominate. One would also expect to find trails where alluviation and dune cover have not destroyed or enclosed such evidence.

Chronological Issues

The issue of chronological control remains paramount in peninsular archaeological studies. Where historic time markers are not present, radiocarbon dating and obsidian hydration studies are the most reliable methods, although these are not without problems (cf. Hyland 1997:268-273; Molto, Stewart, and Reimer 1997; Stewart, Molto, and Reimer 1998).

The most complete dating sequence in the central peninsula using such methods as described above is that of Hyland (1997) and Gutiérrez and Hyland (2002). However, cross dating using such artifacts as projectile points has been used in a number of instances and still offers chronological insights when critically applied. The central peninsula can be best characterized at this point by four major periods of indigenous peoples' human activity. These include the period of historic contact, the well-known late prehistoric Co-

mondú period defined by Massey (1966a) dating back from contact to approximately 1500 years before present; a sequence of early and middle Archaic cultures as yet poorly differentiated (see Ritter 1979, 1985) dating from about 1500 years before present back 9000 to 10,000 years ago, and the Paleoindian period before that time perhaps 13,000 or so years before present. Fine scale resolution of human use is elusive without considerable investment in its discovery, although there are possible exceptions such as Hyland's (1997:276) drop-off in radiocarbon dates in the Sierra de San Francisco that may represent a possible cultural interruption between ca. 600 and 1000 years ago, a prospect seemingly supported by environmental change (climatic warming) in the southern peninsula (cf. Molina-Cruz and Perez-Cruz 1998). As such, this may suggest a broader period of cultural disruption in the peninsula as also defined in environmental changes in Alta California and the Southwest about this time (cf. Davis 1994; Hong-Chun et al. 2000; Jones et al. 1999; Stine 1994; and Waters and Ravesloot 2000). The recent radiocarbon dating of Great Mural art in the central peninsula suggesting production from about 7500 years ago until at least 2500 years ago and perhaps more recently (Gutiérrez 2003:45) coinciding with the middle Archaic time period awaits further confirmation and consideration.

Regional Hunter-forager Models

The models of prehistoric human behavior and change have greater confidence in describing human activities after about the mid-Holocene, especially during the Comondú period. The Gulf coast study localities share much in common while there is less congruence in the archaeological record between Gulf side and Pacific side human use.

Bahía de la Concepción

The following is a basic, simplified model of past human use for this locality (Ritter 1979, 1985): Since about mid-Holocene times major residential bases were situated (1) along Rio de Mulegé/Bahía de la Concepción and (2) within well-watered mountain canyons. During the late summer-early fall, at least in late prehistoric times, macro band-like groups probably formed for various economic, ritual and social reasons related to marriage, exchange of goods, information flow, alliances, etc. These groups may have focused their gatherings at highland villages during a time of plant food abundance. During winter, highland groups may have visited the coast to exploit marine resources, as highland plant foods were less available. East-west connections seem to predominate. For instance, there is little evidence of any regular exchange of obsidian with groups near the Valle de Azufre source to the north. Nevertheless, Great Mural rock art motif complexes are shared to the north, although with apparent differing "schools" (Crosby 1997:213-217). There is little evidence of Pacific-side contacts. Socio-political complexity was possibly at its highest just prior to the Spanish entrada. (Alvarado Bravo [1999:80], working on the Pacific coast of the Sierra de Guadalupe, proposes a transhumant mobility pattern for the Indians with coastal use in the summer when Pacific side temperatures moderated inland heat. Winters were spent more in the interior).

Archaeological evidence suggests, as in the ethnographic record (Aschmann 1959), that there were groups focused principally toward the coast and other groups focused primarily toward the highlands. Evidence includes rock art differentiation, low incidences of marine food remains in highland settings, and settlement data. The plant and animal diversity, abundance, predictability and availability from base camp settings were apparently sufficient-with exchange practices-to support seasonal or multi-seasonal residential units in both zones. The data for at least Comondú times suggest base camps (sometimes perhaps closely dispersed into family units as in the clusters of coastal playa and adjoining rockshelter sites) were placed near dependable fresh water sources

and secure resources such as fisheries and rich plant zones. Satellite extraction camps or locations (Fig. 2a) complemented these principal residential nodes. Such camps and work stations were oriented toward seasonal or periodic exploitation by specialized task groups or individuals of mobile, dispersed or less dependable resources such as terrestrial game animals, at quarries, or at locales where rock art manufacture, burial ritual, etc. could be performed. The density of mixed site types along the diverse littoral fringe testifies to the richness of the marine food base supplemented by nearby terrestrial foods and other resources.

Earlier periods offer less clear evidence of mobility patterns. Projectile point types at upland and lowland residential bases (Fig. 5) suggest a technological connection dating back 3000-8000 years (e.g., Elko/Gypsum Cave, San Pedro, and Pinto-like points). One is left with the impression-admittedly not supported by firm data—that there was a relatively rapid population increase in late prehistory resulting in many regional sites from this time frame (also see Hyland 1997:389). Resource use may have intensified (e.g., increasing use of marine products, highland chenopods, roots, and other plant products) and become more diversified (e.g., use of added marine resources, grass seeds, etc.) with a concomitant development of increasing but still limited socio-cultural complexity. While new dating of rock art as previously discussed may alter the perception of a late prehistoric rock art florescence, it is possible that during late prehistory there existed a rich ceremonial complex manifested in various petroglyph complexes, Great Mural-related pictographic art, and other evidence. This author suspects, based on site/artifact distribution and frequency, that earlier Archaic and Paleoindian peoples were highly mobile, fewer in numbers, and more oriented to mammalian fauna, easily obtainable shoreline marine foods, and plant fare such as cactus fruits and legumes that were easy to access and process. Relationships between groups were probably not well formalized with ongoing or intermittent north-to-south group migrations and technological diffusion. Settlements probably shifted in pre mid-Holocene times more frequently to take advantage of shifting resources and changing habitats. Economic exchanges were probably increasingly developed and regulated during the early to middle Archaic times possibly in part setting the foundation for the Comondú pattern.

Bahía de los Angeles/Bahía las Animas

Evidence of Paleoindian use of this region is sketchy at best, represented by a few early point forms at coastal and inland lake sites (Davis 1968). By 6000 years ago groups oriented to marine resources and tethered to major springs and water holes were present (Bendímez, Téllez, and Serrano1993). At about this time current climatic conditions more or less became established (Van Devender et al. 1984) but with later perturbations as discussed above. Responses to mid-Holocene environmental changes resulting in fewer and less long standing water holes may have led to alterations in resource scheduling and harvest efficiency with associated variations in socio-cultural responses as in group dynamics, ritual, etc. with decreased residential mobility but greater (i.e., longer-range) logistical mobility. The exception would be groups or sub-groups (e.g., bands) associated with major, permanent oases. There may have been an implementation or improvement in food preservation and storage techniques as the late Holocene progressed. Furthermore, the paucity of archaeological remains during mid-Archaic times, perhaps a sampling problem, may represent retrenchment of those groups without a major oasis center into other areas such as interior canyons or further concentration of peoples at major water sources (see Ritter's 1998 discussions).

By Comondú times it is hypothesized that there was likely the development of regularized, culturally influential interactions between interior and coastal groups with the exchange of goods and establishment of kin alliances. Such a culture change may have been

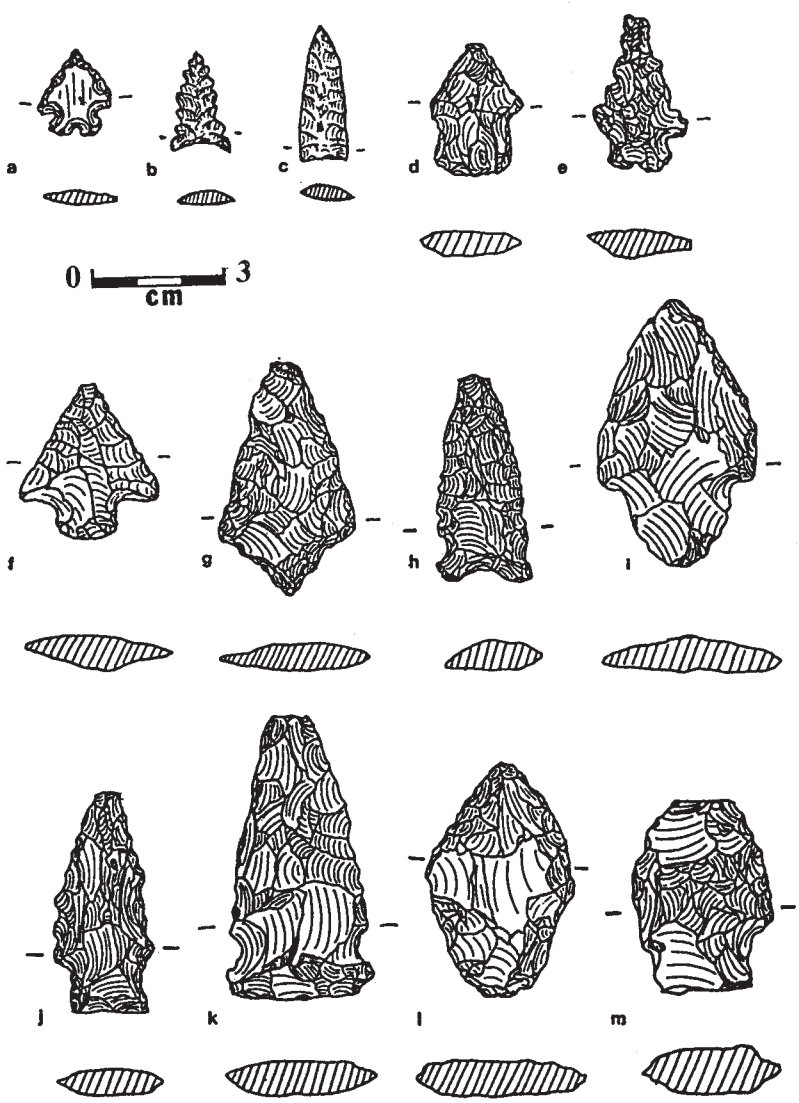

Fig. 5. Bahía de la Concepción region projectile points
a. Guajademí Split Stem type (silicified tuff)
b. Comondú Serrated type (obsidian)
c. Comondú Triangular type (silicified tuff)
d. Zacatecas Broad Blade type (basalt)
e. Pinto-like type (obsidian)
f. Unnamed expanding base type (fine-grained volcanic)
g. La Paz-Gypsum Cave type (basalt)
h. Elko Eared-like (basalt)
i. Loreto Blade (rhyolite)
j. San Pedro type (basalt)
k. San Pedro type (basalt)
l. Lake Mojave-like type (basalt)
m. Silver Lake-like type (basalt).

precipitated by shifting environmental conditions like those previously discussed, possibly coupled with influences from events to the north as listed below and/or from internal cultural evolution processes brought about by experimentation and experience. Concurrently, there is a proposed population increase as these alliances grew stronger and exchange of foods and goods led to less nutritional insecurities, personal stress and interpersonal conflict. Larger resource harvests were perhaps due to such factors as resource intensification (e.g., greater use of annual and legumi-

nous seeds, agave, etc.), use of broader food choices (possibly adding turtles, deeper-water marine resources, various chenopods and amaranths, halophytes, and grass seeds), and better fresh water management. This was a time of possible influences from events to the north along the Colorado River and in areas beyond like the Great Basin and Primeria, etc. At least limited contact with northerly groups is documented in rare ceramics, obsidian from Bahía San Luis Gonzaga, and possible point styles (Desert series?) and the bow and arrow. There is no indication of influences from the

south such as obsidian from Valle de Azufre or Great Mural rock art (see Ritter 1995b). Most interaction is seemingly on a more localized east-west basis rather than longer-distance, weaker, north-south links based on rock art motif complex similarities, obsidian distribution, Gulf shellfish remains at inland sites, and early historic accounts (cf. Aschmann 1959:101).

In this model, during Comondú times, for which the archaeological evidence is greatest, single and limited multiple family units were dispersing and congregating at different times of the year depending on resource availability, water accessibility following storms or wet seasons, and food resource trends and productivity. In all likelihood, major water centers were year-round foci for at least part of the population. Macro-band fragmentation may have occurred during the winter-spring when fixed marine resources and small land animals could complement the diet dominated by ripening seeds from annual plants. This would agree with the widespread distribution of late prehistoric sites observed in the region. Spring and summer would bring periods of population aggregation at key oases where abundance of important resources (cactus fruits, sea turtles, legumes, rabbits, fledgling sea birds, agave, zaya, etc.) occurred on a regular basis (see Aschmann 1959:127-128). This is not to say that during this time small foraging groups did not roam wide and far with the spatially dispersed resources most expeditiously gathered by the dispersed task groups who could then periodically interact with kin groups for social/ritual reasons.

Although there is little definitive evidence to support the hypothesis, during late prehistoric times there may have been an emerging economic pattern combining elements of diversification and intensification of food resources. Hence it is possible there was an increased utilization of certain high ranking and reliable food resources like sea turtles, shellfish beds, and reef/near shore fisheries. Hypothetically, this was a time of optimized scheduling of food acquisition, more thorough use of seasonally available annual plant foods, increased interior-coastal exchange of foods and goods, and better management of food reserves through drying and storage with efficient food distribution mechanisms to kinsmen and partners. Some of this distribution may have occurred during times of feasting, ritual and exchange at proposed ceremonial centers such as Yubay, Adac, and Montevideo.

Finally, in the locality there is a suggestion of an incipient increasing cultural complexity as evident in mortuary/presumed ritual complexes, status burials (perhaps shamans and others) (Massey and Osborne 1961), rock art complexes at special inland centers (Ewing 1988), and possible integrated exchange/alliance systems between coast and interior and with other regional rancherias (as suggested in the ethnographic data-Aschmann 1959:101; 129-130). Missionization, of course, brought a rapid and dramatic change to regional peoples, with coastal-interior alliances and interaction serving at least to lessen interpersonal conflicts and allow, from a missionary standpoint, a relatively smooth transition into mission life. Evidence along Bahía de los Angeles/Bahía las Animas for contact period archaeology is elusive and minimal as in ceramics and cotton cloth at scattered littoral sites. Evidence for prehistoric or historic cross-Gulf Seri contact is equivocal (but see Bowen 1976, 2000:23; and Foster 1984).

Laguna Manuela, Laguna Guerrero Negro and Laguna Ojo de Liebre

Work around these three lagoons has centered mostly on the northeastern portions of the central lagoon of Guerrero Negro and sections of the southern and middle reaches of Laguna Manuela. Here a rich band of archaeological evidence from contact period back at least several thousand years is present paralleling the coast, generally along recent or older shorelines. However, much of the archaeological evidence points to late prehistoric use and a prolonged protohistoric

presence from the 1500s into the 1800s. The model of human occupation and use of this region differs remarkably from those previously discussed.

Environmental changes reflected in ongoing landscape modification are more dynamic in this region than those previously discussed where many rock-covered older, less erosive landscape features are present. As such there is a greater likelihood that earlier sites in this region, if present, have been buried or eroded. One site along Laguna Ojo de Liebre has been radiocarbon-dated ca. AD 270 (UCR 2319/UCRAMS 82) (Ritter and Payen 1992:254), a site situated on an early Holocene beach terrace or ridge. At another site along Laguna Guerrero Negro there are historic artifacts that may run into the early 19th century (Ritter 1999). Almost all of the sites are proposed to represent the Guerrero Negro focus of the Comondú period, perhaps commencing around AD 250 to 500 and running into the Spanish occupation. This manifestation complements a central highland focus (or focuses) and one or more Gulf focuses as also mentioned above.

Technologically these Pacific side sites not unexpectedly exhibit tool kits (Fig. 6) strongly oriented towards a marine economy, a fact apparent in the faunal remains of various sea mammals, sea turtles, crabs, and fish remains left behind. Terrestrial and avian animals were not totally ignored, either, and milling stones suggest some plant food processing, although marine products cannot be dismissed from the milling stone food preparation mix. The artifact assemblage contrasts in a number of ways with Gulf and montane assemblages, a fact not surprising when considering the contrasting ecological setting. The absence of workable stone in close proximity to most of these coastal sites meant some stone tools, workable stone, and associated tool kits had to be imported. Subsequently, some stone tools were worked and maintained, and bone and shell were processed into tools and ornaments (Figs. 6i,j, m, o, p). Quality flaked stone was used, reused (Fig. 6k,l), and apparently curated, and a transportation network for such valuable commodities as obsidian derived from the distant Valle de Azufre source existed.

Contact with Spanish explorers and acquisition of goods in the general vicinity (Cedros Island) dates to 1540, and Chinese ceramics and possibly cupriferous sheets (Fig. 6a), tubes and wire and iron debris located in sites were acquired from apparent local coastal Manila galleon debris dating to the 1570s. Other goods (possibly including the cupriferous objects listed above) such as a perforated Austrian coin (Fig. 6d), glass trade beads (Fig. 6c), green bottle glass for point manufacture, and brownware ceramics, all possibly derived from mission sources, date from the 1700s into the early 1800s (Fig. 7). The bowls and ollas of brownware ceramics were utilitarian wares, carried a long distance like the milling slabs and cobbles and boulders of flakable stone.

Not all sites around these lagoons are the same, although all possess characteristics of marine resource procurement and probable residential occupation. Some sites were apparently much more ephemeral than others and special tasks may have been conducted at these locations in the absence of periods of residence. Few locations outwardly exhibit continuous, long-term use by a large residential unit, long-term use that would be expected to result in shellmound buildup, crushing of ecofactual debris, and greater use of fire in cooking and heating. Rather, use was broadly dispersed along coastal strips bordering the lagoons.

A very few sites do exhibit dense occupation debris, albeit shallow, in broad patches, totaling up to 40,000 square meters in size. People occupying these sites buried or cremated their dead, including aged, arthritic individuals. In one case hundreds of small cylindrical to cupped shell beads of a type not identified before in the peninsula accompanied the dead. In another cremation spire-lopped Olivella beads occurred (Fig. 6i,j). Still other individuals appear to lack mortu-

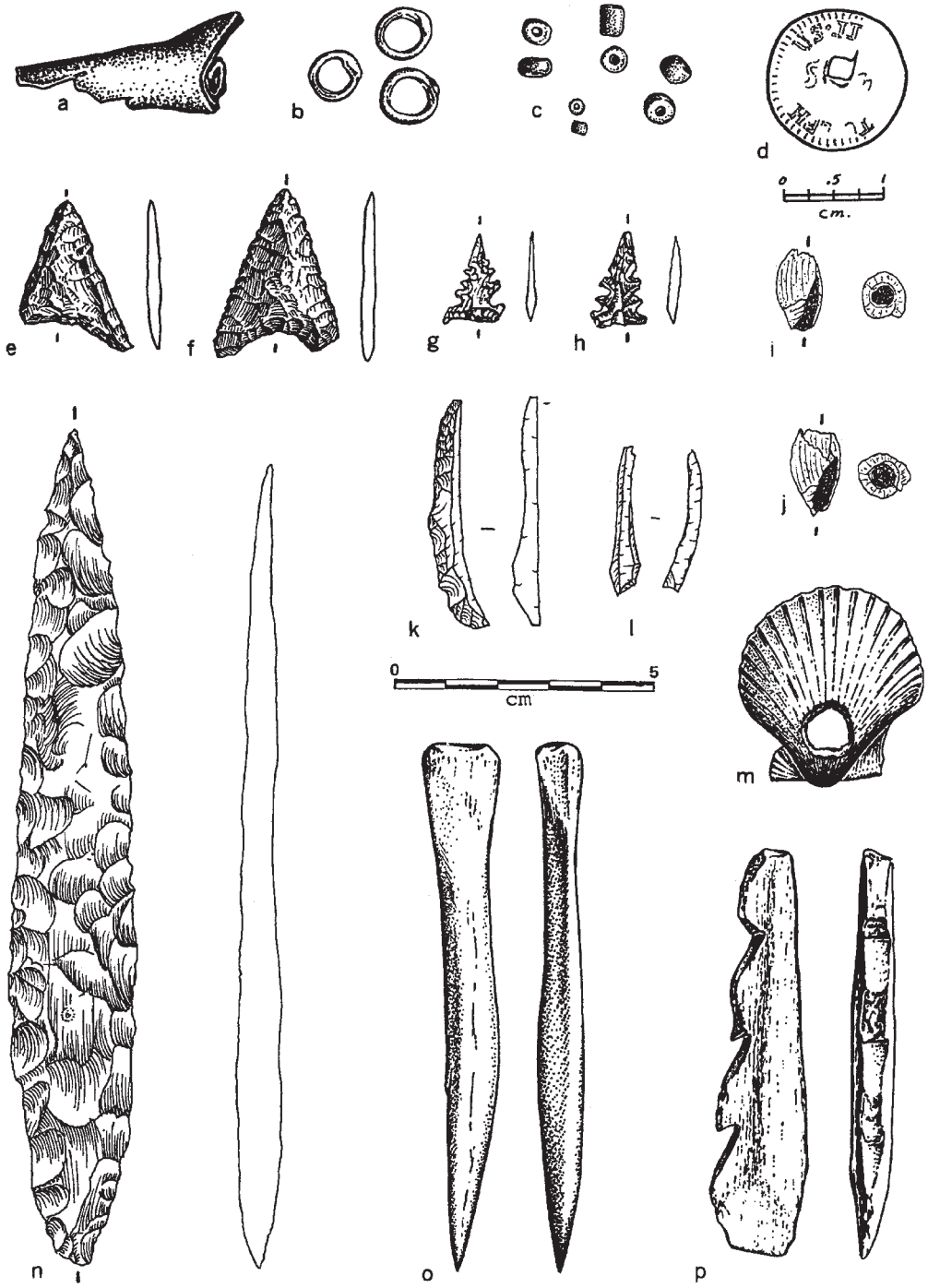

Fig. 6. Artifacts from Laguna Guerrero Negro-lower Laguna Manuela sites. (a) Fragment of rolled copper sheet. (b) Black glass ring beads. (c) Glass trade beads. (d) Austrian perforated copper coin (late 1700s)-Joseph II (note scale). (e) Guerrero Negro series projectile point (obsidian). (f) Guerrero Negro series projectile point (obsidian). (g) Comondú Serrated projectile point (obsidian). (h) Comondú Serrated projectile point (obsidian). (i) Spire-lopped Olivella bead (burnt). (j) Spire-lopped Olivella bead (burnt). (k) Burin spall removal along biface edge (obsidian. (l) Burin spall (obsidian). (m) Perforated *Argopecten* sp. shell valve. (n) Biface (chert). (o) Bone awl. (p) Bone harpoon tip.

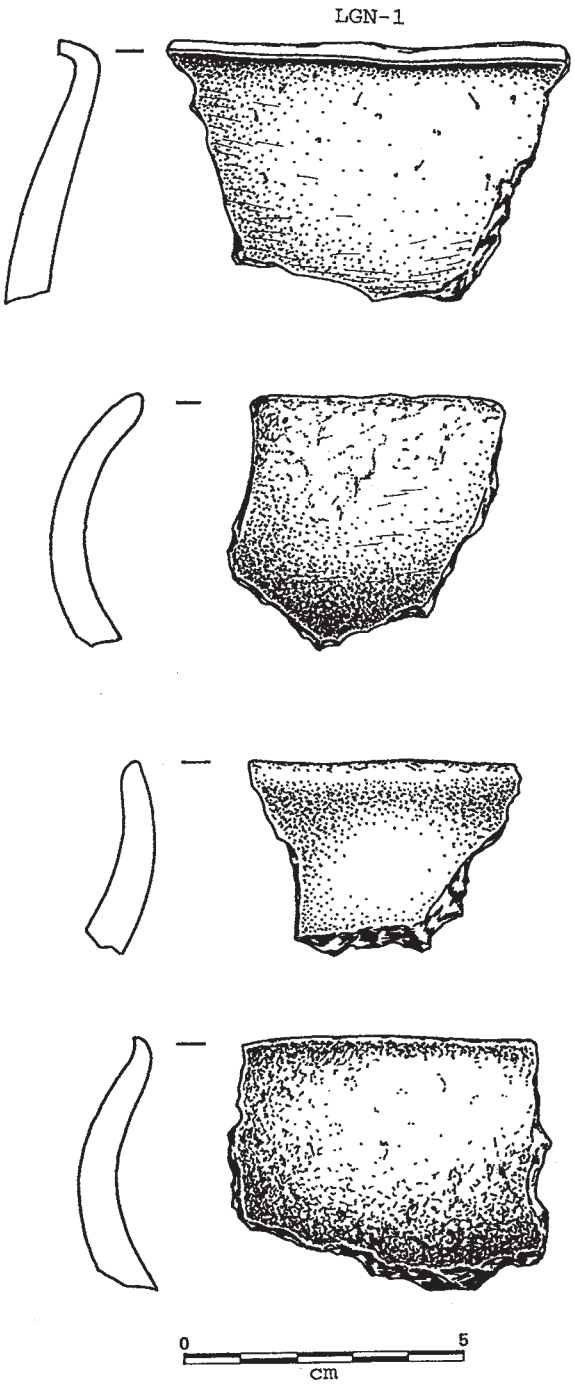

Fig. 7. Mission period brownware rim sherds from Laguna Guerrero Negro site LGN-1.

ary goods that have been preserved. The dispersal of occupational remains follows Gamble's (1991:5) observation among ethnographically known mobile people that "high residential mobility by a core group, rather than individuals working away from a base, can be predicted from general ecology and results in a regional signature of comparatively high resolution which forms a continuous scatter, albeit variable in terms of density, across the landscape."

The archaeological evidence suggests we are dealing primarily with family and small multi-family groups clustered at inter-dune or coastal locations for short periods of time (days to weeks?) who brought with them a specialized maritime adaptation and tool kit. Ecofactual remains indicate use of a broad spectrum of terrestrial and maritime habitats, including shore and bay resources. Maritime resources provided food and equipment. There was use of diverse fish, mollusks, crabs, sea mammals, sea turtles, migratory and resident birds, terrestrial mammals, and likely exploitation as well of local plants such as eelgrass, *Spartina* sp., *Lycium* sp., etc. The circumstances leading to this hypothetical late prehistoric increase of west coast use in this region is uncertain, but work elsewhere in the peninsula, such as previously referenced in various central peninsula studies, suggests some possibilities that may have operated singularly or in combination.

A scenario for increased lagoon use would have a population increase in the highlands to the east. Bernbeck (1991:54) notes that one model of forager behavior assumes that after some time of demographic increase and an associated depletion of resources, populations tend to disperse into unexploited (or under-exploited) areas. This pattern assists in mediating crises in the productive sphere. Lourandos (1988:150) believes that "the area of intergroup relations (for example, feasting, ritual and exchange) provides the context for change, rather than the domestic level of production." Intensification and diversification of the resource base to better include Pacific resources could be one such

result of intergroup relations and exchange of information and goods. If it is good enough for Group A and the resources are plentiful then why shouldn't it be good enough for related Group B?

Societal crises and stresses, whether from overpopulation, resource depletion, environmental change, or other factors, are generally ameliorated through ceremony/ritual and other mechanisms (see Turpin 1990, Ritter 1995b, and Hyland 1997). One aspect of ritual/ceremony in the highlands is thought to be elaborate rock art display (including depictions of marine life) as possible shaman influenced trance-state symbolism. A possible increase in rock art production in the highlands during Comondú times may coincide with an increase in the convergence of social units on a short-term basis to select locations along the western peninsular lagoons. An alternative scenario would have a change during this time period in ritual focus from rock art production to some other form coinciding with societal/environmental perturbations. This alternative would follow the proposed preliminary earlier dating results of the Great Mural art as reported by Watchman, Gutiérrez, and Hernández (2002) and Gutiérrez (2003).

A change in climate in the peninsula as proposed during European Medieval times might tend to affect terrestrial resources more than marine. This could lead to an increase in use of rich coastal resources to offset highland resource uncertainties. It is about this same time that there may have been technological changes such as the introduction of the bow and arrow and its effects on hunting behavior and mobility patterns. There is also the possibility that the introduction of the composite harpoon may have increased coastal exploitation. The Guerrero Negro series projectile point (Fig. 6e,f), confined to late prehistoric central Pacific Coast areas, may relate to harpoon use. In any event, use of western lagoons appears to have climaxed during late prehistoric times, representing seasonal use by family groups from various mountain communities bringing and taking back tool and equipment products and food resources of many sorts. These people carried with them the tools and technological know-how of a specialized means that is reflected archaeologically (as one would expect) in a somewhat differing pattern than those groups focused on the Gulf coast.

Prehistoric Diversity in the Central Peninsula

The basic proposed dichotomy of cultural relationships, at least during late prehistoric times, includes focus groups along the Gulf side and mountain groups with coastal contacts along both coasts. The antecedents for this pattern likely extend back into pre-Comondú times, even along the west coast where Elko-like projectile points are found at some sites. However, prior to about AD 1, prehistoric use in this central peninsula seems to have been focused on highland and Gulf coast areas with at best occasional hunter forays into the Three Sisters lagoon area. Further north in the peninsula early residential use along the west coast is clearly present (cf. Moore 1999; Bryan and Gruhn 2000).

The technology of prehistoric central peninsular societies exhibits considerable similarity across ecological and historical dialect boundaries, the most apparent difference being tool kits of western Pacific foraging units in at least late prehistoric times (Figs. 5, 6, 8, 9) as discussed further below. The apparent pan-central peninsula artifact types include the small triangular points of the Comondú series, the earlier Elko, Pinto and La Paz-Gypsum Cave-like points, the chacuacos or tubular stone instruments (Fig. 10), a generally long lasting un-shaped or little shaped mano-metate assemblage, pitted hammerstones and manos (Figs. 11, 12), expedient volcanic material flake-core use, spire-lopped Olivella beads (Figs. 6i,j; 8a-h), and *Dosinia* sp. cutting-scraping tools (Fig. 9g,h).

The highlands and Gulf coast share common scraping planes (used in cordage making, woodworking, or

Fig. 8. Bahía de la Concepción miscellaneous artifacts of shell, bone and fiber. (a-d) Large spire-lopped Olivella shell beads. (e-h) Small spire-lopped Olivella shell beads. (i-l) Side-perforated Olivella shell beads. (m) Mother-of-pearl shell (*Pinctada mazitlanica*) ornament fragment. (n-o) Mother-of-pearl shell (*Pinctada mazitlanica*) ornaments. (p) Perforated *Argopecten* sp. shell valve. (q) S-twist, 2-ply, loose twist cordage. (r) Z-twist, 2-ply cordage. (s) Cordage wrapped and tied with fibers. (t) Square knot cordage. (u) Loop and twist netting fragment. (v) Z-twist, 2-ply, replied cordage (ends burnt). (w) Bone awl. (x) Decorated bone spatulate tip. (y) Mountain sheep metapodial awl.

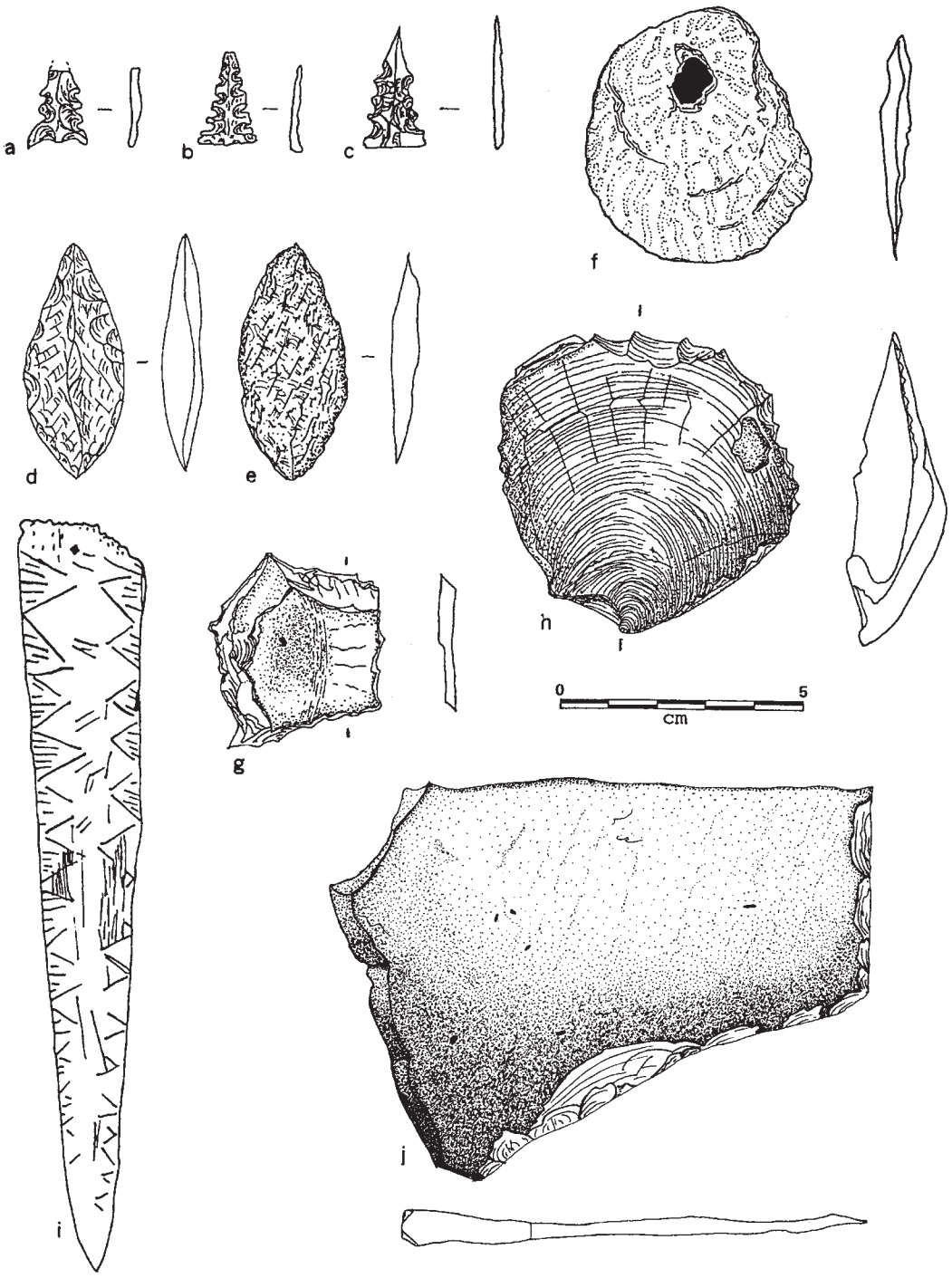

Fig. 9. Artifacts from Bahía de los Angeles/Bahía las Animas sites. (a-c) Comondú Serrated projectile points (cryptocrystalline silicate). (d) Quartz biface. (e) Quartz biface. (f) Oyster (*Ostrea* sp.) shell ornament. (g-h) Shell tools (*Dosinia* sp.). (i) Decorated bone pin. (j) Thin slab knife (rhyolite).

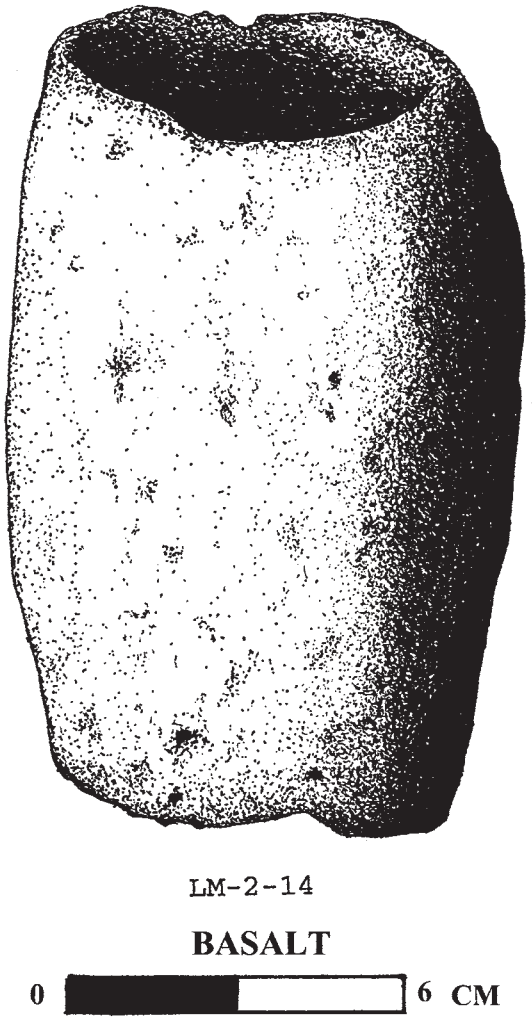

Fig. 10. Unfinished basalt tube (chacuaco) partially covered with red pigment, Laguna Manuela.

agave processing?), cleaver-like tools (Fig. 9j); infrequent, well-shaped manos with ends that are cupped, widespread square knot cordage (Fig. 8t), cane whistles and skirts, fiber carrying bags and head nets (Fig. 8w), wooden tablas, human hair capes, numerous rock enclosures or corralitos (Fig. 3), and secondary burial in shelters.

While some of the variations observed in late prehistoric and earlier archaeological records in the central-east peninsula may be a matter of sampling (see Ritter 1995:14-15) and/or observational error, several of the differences seem to be real. Notable around Bahía de los Angeles/Bahía las Animas are the abundant flaked shell tool assemblages (Fig. 9g,h), the absence of a pronounced staged biface reduction grouping as in the vicinity of Bahía de la Concepción (Fig. 13) and Laguna Guerrero Negro (many of the presumed finished bifaces/points are quartz); rare plain ware ceramics from pre-contact traditions to the north, extended burials, well-defined talus burial chambers (Fig. 4), and the absence of Lark's Head knotting as found around Bahía de la Concepción (Ritter 1979:356). There also appears to be some differences between locality in ornament/bead types. Most evident, as discussed by Ritter (1995b), is the difference in rock art traditions, with common Great Mural art found to the south and less frequent Northern Abstract art (Fig. 14) occurring to the north, perhaps corresponding with a linguistic/cultural division between the Cochimí/Comondú or earlier peoples. A similar division is apparent between the Sierra de Guadalupe and the Sierra de la Giganta below Bahía de la Concepción.

Even more divergent than the assemblages found along the east-central side of the peninsula is the Comondú assemblage along the west central peninsular lagoons (Fig. 6). Frequent obsidian artifact presence is shared with the Sierra de San Francisco locality to the east, the source area. Obsidian at these west coast sites is manifested in a complex reduction system ranging from use and curation of at least one imported

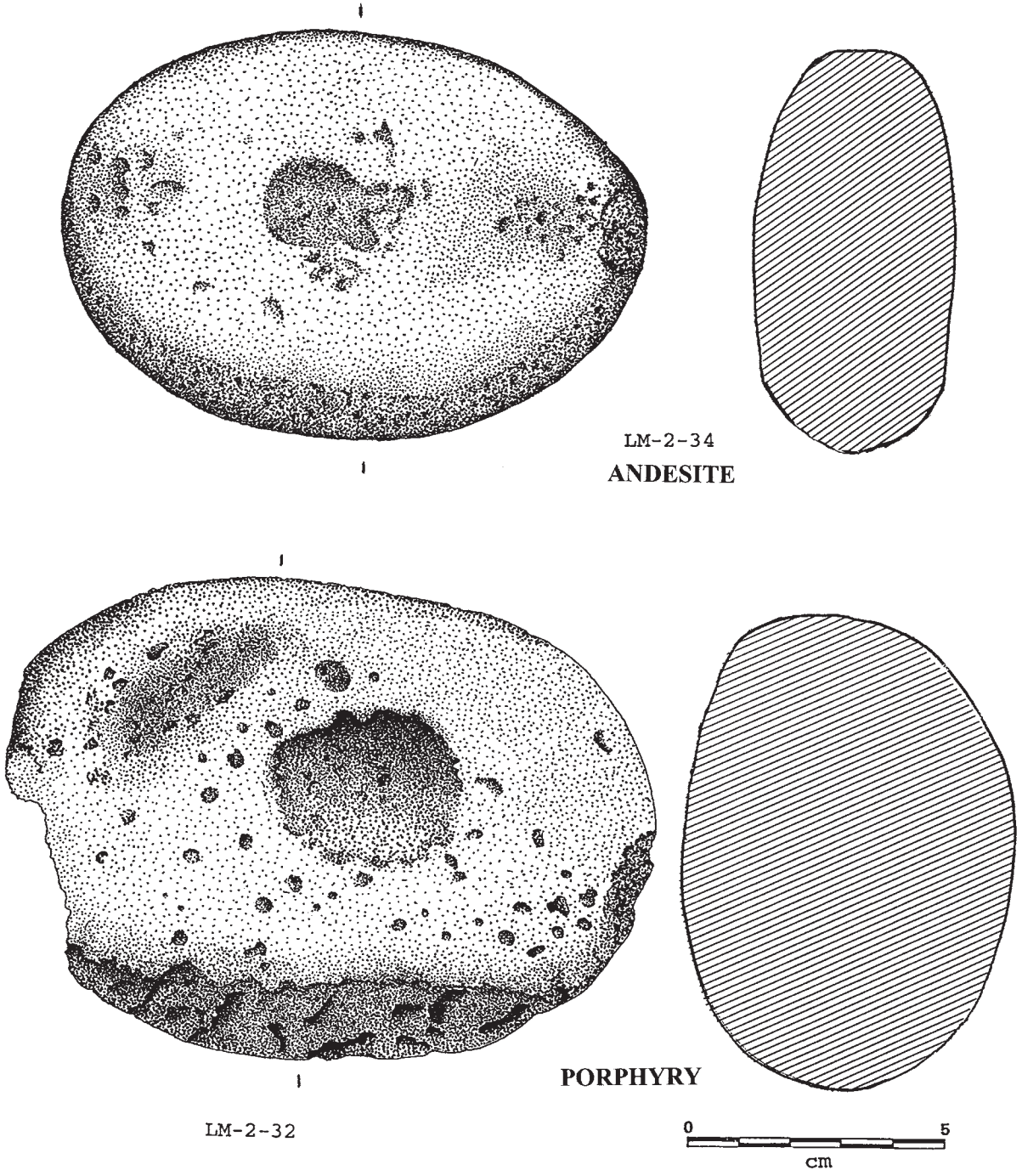

Fig. 11. Pitted volcanic manos/hammerstones, Laguna Manuela.

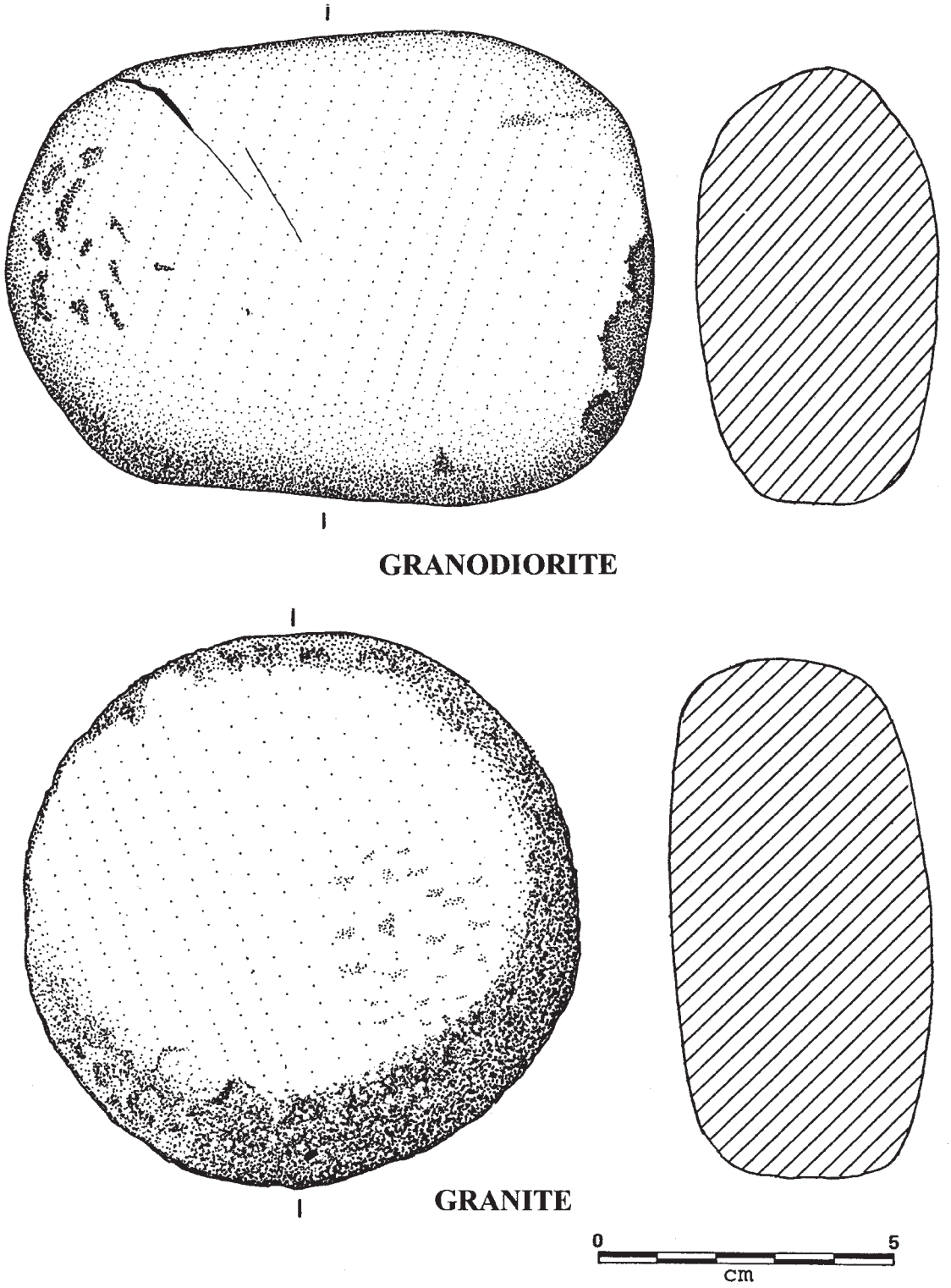

Fig. 12. Granitic manos, Bahía de los Angeles.

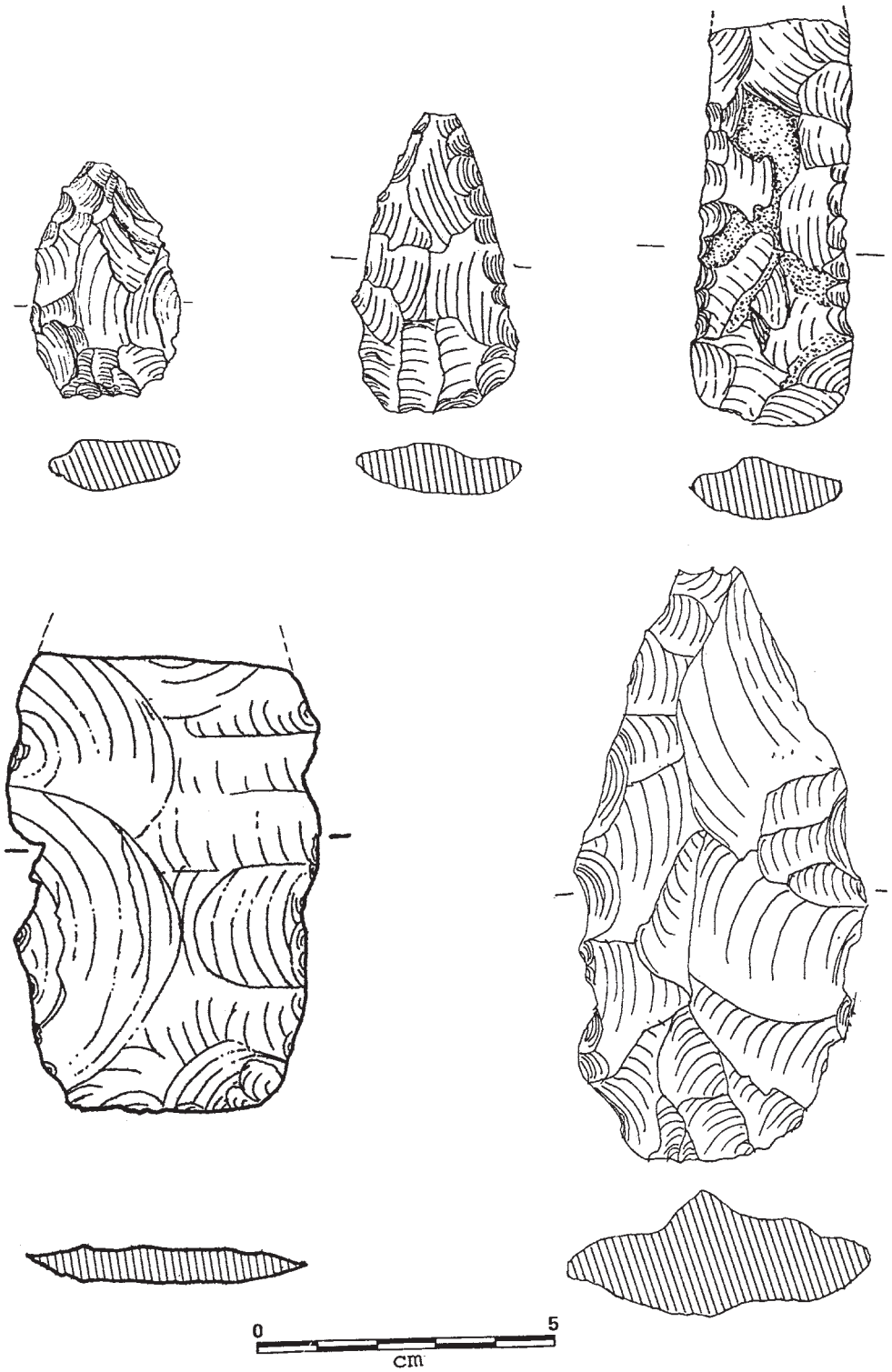

Fig. 13. Biface industry examples from Bahía de la Concepción (based on length, width and thickness gradations from smallest to largest). (a) Form 1 biface (basalt. (b) Form 1 biface (basalt). (c) Form 2 biface (basalt). (d) Form 3 biface (basalt). (e) Form 4 biface (basalt).

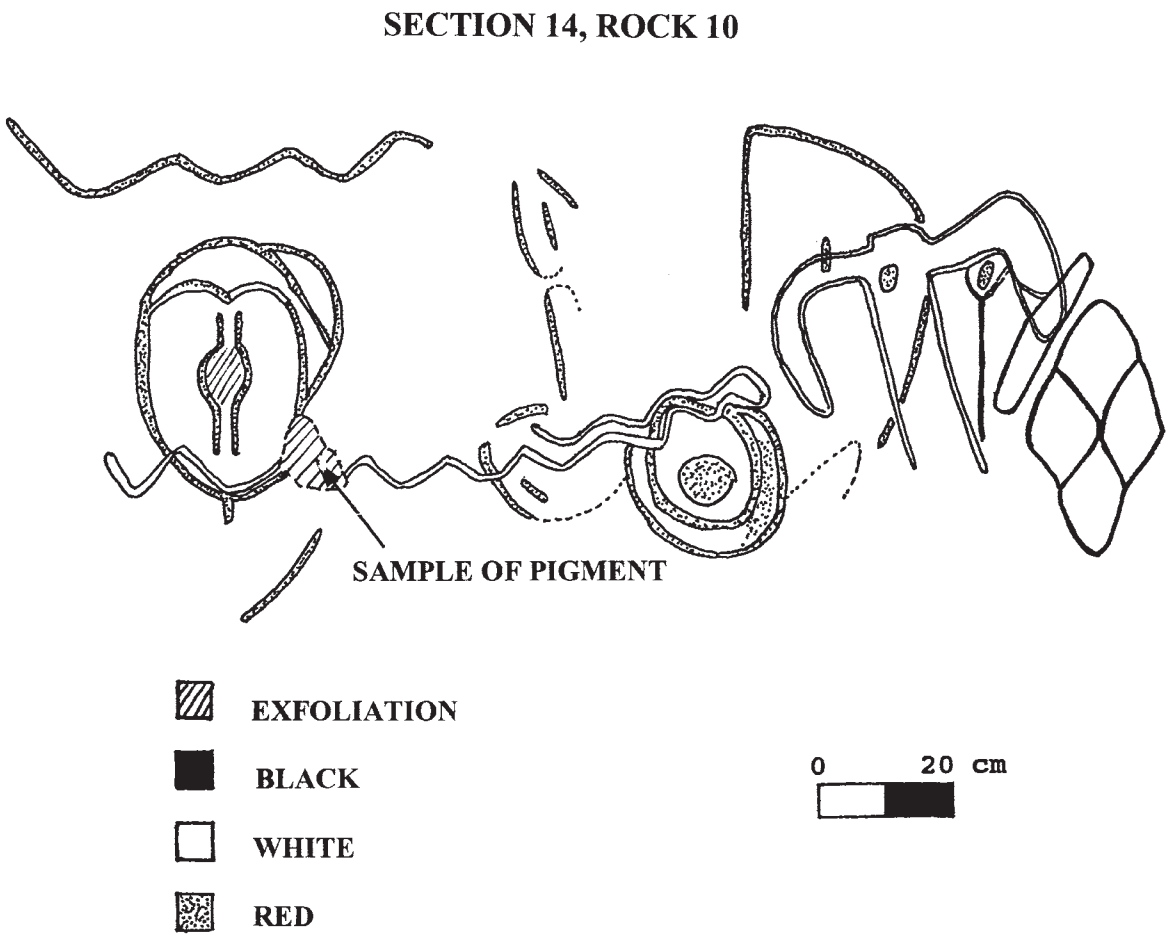

Fig. 14. Polychrome pictograph panel (Northern Abstract style) from Montevideo near Bahía de los Angeles.

obsidian boulder, large flakes and early stage bifaces to small nodules that are bipolar reduced. Many techniques are evident aside from bipolar including uniface-biface reduction, radial breakage, burin spall formation (Fig. 6k,l), multi-stage biface reduction (Fig. 6n), various stages of core reduction, and final pressure flaking on finished bifaces and projectile points. Obsidian is carefully used, curated and reused. A variety of fine grained and silicified (or "baked") volcanic materials as well as quartz are also commonly employed for various flaked stone implements including some projectile points and common late stage bifaces.

Small eccentric projectile points and small stemmed arrow points occur in these western lagoons (as they do perhaps less frequently in the highlands to the east), as well as Guerrero Negro triangular series projectile points (Fig. 6e,f), possibly harpoon inserts. Bone harpoons and bone awls are also found (Fig. 6o,p). Only the larger stone tubes (chacuacos) occur in dune site assemblages (Fig. 10). The diversity of late and earlier projectile points in this locality (see Ritter and Burcell 1998) is shared with areas to the east and southeast (Fig. 5), a variety greater than what seems to be present toward the north/northeast (also see Massey 1966b). This, again, may be a sampling problem or could be a reflection of more group diversity toward

the east and southeast (i.e., stylistic or emblematic variation among cultural units), a reflection seemingly of a diverse ecology, relatively rich in food and water, in those regions (See Laylander 1997; Massey 1949; Sinopoli 1991; Weissner 1983).

The discussion of technological variations has been relatively superficial and generalized. These differences suggest a level of cultural diversity even among Comondú period peoples that occupied quite variable ecosystems. In turn, these variable ecosystems are reflected in varying mobility patterns as briefly discussed above. Certainly the areas around Bahía de la Concepción and in the Sierra de San Francisco contained more water and a richer terrestrial biomass than the west coast and Bahía de los Angeles/Bahía las Animas/Bahía San Rafael zone (cf. Gutiérrez and Hyland 2002). Habitats around the northern bays as listed above and the western lagoons were fertile in marine foods but were far more dependent on key water holes and/or transportation of water over longer distances, at least since early Holocene times.

Implications and New Directions

Some archaeologists (cf. Rossignol and Wandsnider 1992) have advocated looking at archaeological landscapes, the investigation of past land uses by means of a landscape perspective that would combine studies based on regional geomorphology, present-day observations, site formation processes, and ethnohistorical evidence within a dynamic methodological and theoretical perspective. In reality, while sites have remained the conceptual unit for organizing information, the larger picture of human uses on various landforms and oceanographic units has increasingly been incorporated into the assorted investigative processes. Hyland (1997), for one, has emphasized the place of central peninsular rock art within the culturally constructed landscape. The various principal studies listed earlier have been undertaken on a regional sampling basis. Despite their inherent partiality in terms of selection of locality, broad-brushed regional examinations have lessened observational biases. There are obvious differences in particular prehistoric land and maritime uses across the central peninsula based on hypothesized mobility strategies, resource use, social organization, and ideology. The constraints of landform, resource distribution and character, near-shore and offshore oceanic characteristics, and fresh water availability on these past peoples seem quite evident. The changing natural systems almost certainly influenced cultural dynamics both in the short term and on a long-term, evolutionary basis. The central peninsula is not homogeneous in landform or natural resources now, nor was it in the past. There are many localities lacking scientific investigations, especially in the northern reaches of the Central Desert and large sections of the western flanks of the central sierra and adjoining coasts. No location can be considered well studied. Paleoenvironmental data are still largely lacking (see Rhode 2002 for a recent exception).

There seems little doubt that Paleoindian peoples made their way down the peninsula. Whether they formed the base for subsequent, descendant populations is uncertain. By mid-Holocene times, Archaic hunters/foragers seem well entrenched in the middle peninsula, in some upland and Gulf-side locations occupying residential bases that continued to be reused into late prehistoric times. Preliminary results from Gutiérrez (2003) and Watchman, Gutiérrez, and Hernández (2002) suggest this was also the major time of Great Mural Rock art production, a proposal still in need of verification. Overall, in the last 2000-3000 years or so (cf. Gutiérrez and Hyland 2002; Hyland 1997:274-275; Ritter 1979, 1998:39) human use of varying landscapes in the mountains and on the Gulf side of the central peninsula has left a relatively dense heterogeneous pattern of residence, ritual, and task group vestiges. Along the Pacific side, on the other hand, a relatively linear pattern of concentrated mixed residential and task group remains occurs.

The proliferation of late prehistoric sites throughout the central peninsula and the regional differentiation is not solely a factor of procurement strategies and mobility variations. A number of possible reasons have been offered above, both in terms of internal socio-ideological mechanisms, including rock art displays and communication, but also outside influences and pressures. There appears to have been a high degree of group interaction and fluidity in social composition and mutual reciprocity and exchange of goods with partners, but primarily on an east-west basis, much as among ethnographic groups in the north peninsula. Such mechanisms tend to circumvent environmental risk while encouraging the spread of general technology and technological, even emblematic variation (as in point styles and rock art motif variations) and practice, and the formation of loose territorial/dialectical groupings. These were seasonally mobile groups with complex and dynamic socio-political and geographical arrangements. The models offered above are more impressionistic than real, models that can hopefully stir useful discourse and study of the archaeological frontier set before us.

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