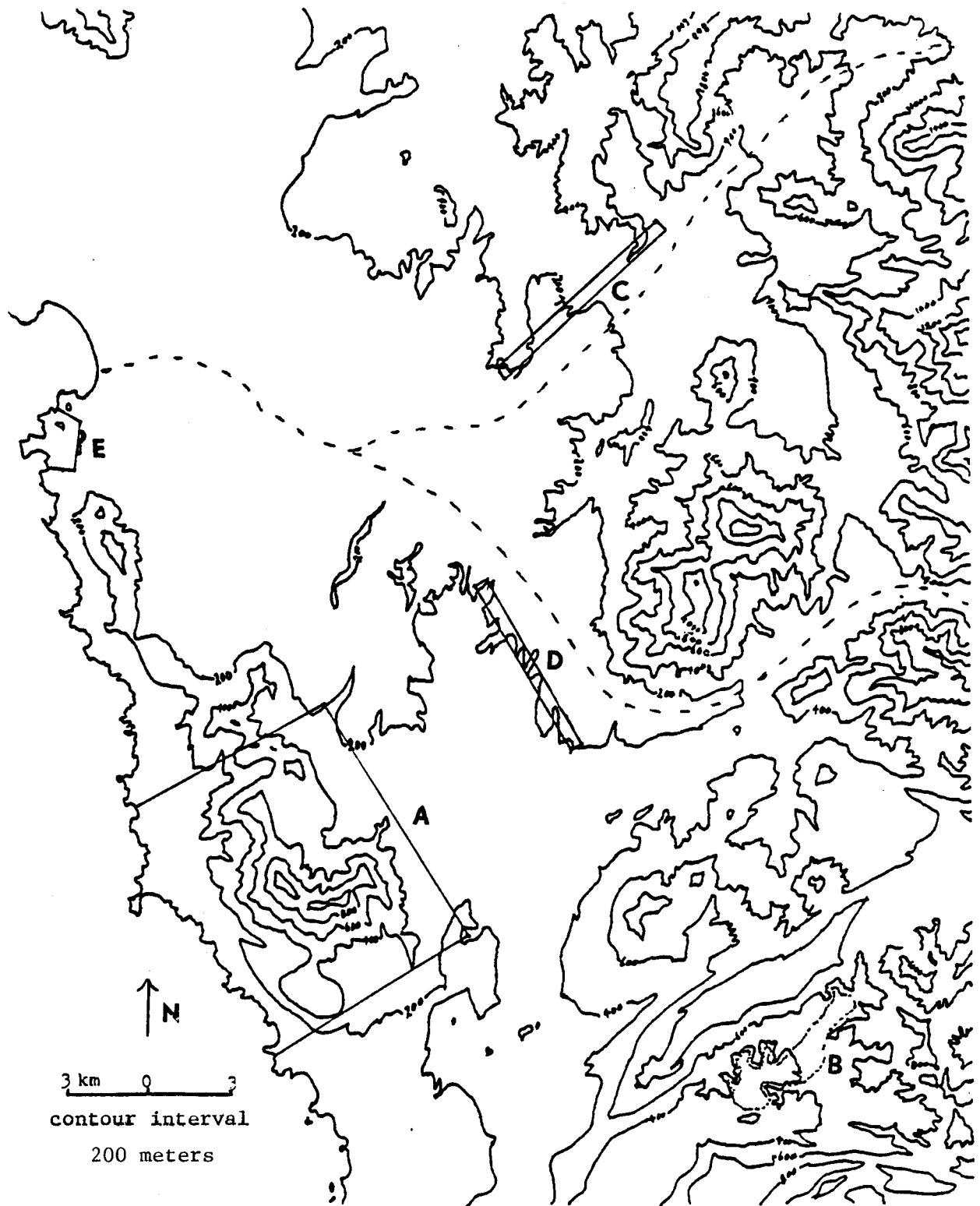


The Preceramic Occupations of the Casma Valley, Peru

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Investigations of the preceramic occupations along the Peruvian coast have been carried out in many areas, but detailed artifact sequences have been identified from three regions only: the Central Coast, specifically the area between the Chillón River and Bay of Ancon (Lanning 1963, 1967a; Moseley 1975), the North Coast (Chauchat 1975, 1978; Moseley 1982; Ossa 1973, 1978), and the Far North Coast (Richardson 1969, 1973, 1978). These sequences are distinct from each other, although some broad similarities do exist, particularly during the later phases. The distinctive nature of these sequences suggests different environmental and social factors were operating in each area. My initial research goal was to define an archaeological sequence for a valley on the North Central Coast, to determine whether cultural developments there were the same as a previously defined one from another area. Due to the proximity of the Callejón de Huaylas, I believed that there might have been a significant degree of interaction between preceramic groups in that region and those of the North Central Coast.

The Casma valley, located at 9°30' south latitude, was selected as the focus of research because it is the largest valley on the North Central Coast and it was the center of a large polity during the Initial Period. Five separate areas were investigated (Map 1). These were selected on the basis of where preceramic sites were located in other areas. Area A is centered on a large loma, a resource zone commonly exploited by preceramic groups farther south (Lanning 1963; Patterson 1971). This loma is of the prado type (Craig and Psuty 1968), and includes a



Map 1. Survey areas in the lower Casma valley.

variety of flowering and woody plants. Deer, vizcacha and other animals were reported as present up to 1972. Area B is a dry quebrada located to the south of the main valley where it was thought that Paijan occupations might have existed, as are known from the North Coast. Areas C and D are located along the margins of the valley floodplain in positions analogous to those where Patterson (1971) found Late Pre-ceramic settlements in the Chillón valley. Area E was selected because it is located in a position where marine, floodplain, and estuarine resources are juxtaposed.

Preceramic sites were found in areas A and E only. A single site was located in area E, while thirty-eight sites with preceramic components were found in area A. An additional twenty-four sites with lithics were recorded in the latter area, but these were assigned to ceramic periods because of the association of abundant potsherds with the stone tools (Malpass n.d.).

A sample of the lithic artifacts was collected from both the pre-ceramic and ceramic period sites, and the relative abundances of potsherds was recorded. The number of large tools, such as grinding implements, was also recorded, but they were left in the field. For more details on the sampling procedure, see Malpass (n.d.). A total of 1910 lithic tools formed the basis of this study.

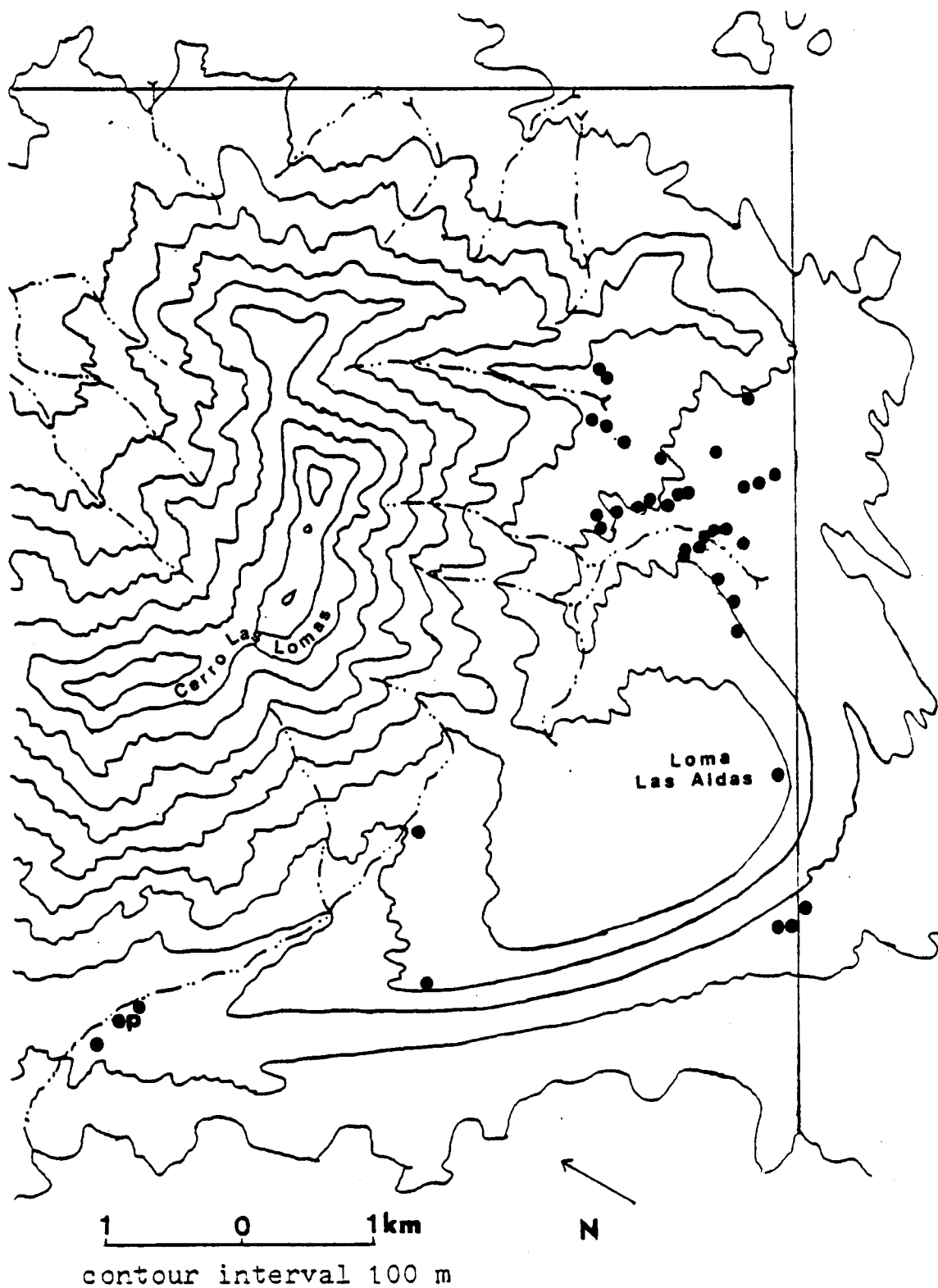
Two lithic industries were identified from the preceramic sites. The first is a member of the Paijan tradition, previously identified from occupations in the Moche and Chicama valleys (Chauchat 1975, 1978; Ossa 1973, 1978). The Paijan industry is represented at only two sites, A68b in area A and at the Campanario site (E3b) in area E. The second industry, named Mongoncillo after the loma near which most of

the sites are located, is represented at thirty-eight sites, all in area A. The distributions of the sites in the Paijan and Mongoncillo industries are presented in Map 2. A more detailed description of these two industries follows.

It is difficult to characterize the nature of the Paijan industry in the Casma valley because of the scarcity of tools. A68b is a multi-component site, hence it is not possible to segregate the tools associated with the Paijan occupation from the later ones, except for the projectile points. The Campanario site appears to be a single component, special activity site, thus it provides the clearest picture of the nature of this industry in the Casma region.

A high percentage of bifacial tools is the most significant aspect of the Campanario assemblage. 76% of the 101 tools are projectile points or bifaces, the latter being broken or unfinished points for the most part. The remainder include utilized flakes, denticulates, cores, and hammerstones. In addition to the tools, 283 pieces of chipping debris, including at least sixty bifacial thinning flakes, were recovered. These artifacts represent a thorough but by no means exhaustive sample of the total present at the site. The abundance of manufacturing debris and the absence of complete, finished points suggest the site was used as a point finishing and rehafting station. No large cores or Chivateros-like bifaces were found at the site, indicating the roughing out of the preforms was done elsewhere.

Granted the Campanario site is a special activity site which cannot be expected to include the whole range of tools utilized by the Paijan people, the other tools present do conform to types identified from the sites in the Moche and Chicama valleys. Denticulates are the most com-



Map 2. Locations of the Paijan (p) and Mongoncillo (•) sites in area A.

mon unifacial tool at the Campanario site, which is also true of the Chicama sites (Chauchat 1978). The much higher percentages of bifacial than unifacial tools is also a trait common to both areas, although this may only be a similarity due to the sites' functions.

The same range of projectile point forms are found in both areas as well. Both the convex- and straight-sided variants identified from the North Coast sites are present in Casma, the former having the elongated, awl-like tips typical of the northern points. In addition, broad-stemmed points are associated with the Paijan points from Casma, as they are in the Moche valley (Ossa 1973). Such points are also found at El Inga (Bell 1965) and Chobshi Cave (Lynch and Pollack 1980) in Ecuador, and may represent a distinct type from the narrow-stemmed Paijan varieties (Mayer-Oakes 1982).

Another similarity between the Paijan sites in Casma and those farther north is the definite preferences shown in the selection of raw materials for different artifact types. At the Campanario site, 74% of the bifacial tools were of sandstone and 21% were of crystallized quartz. None of the other tools were made of sandstone. At A68b, the majority of the points were of crystallized quartz, with a few of fine-grained rock as well. In Chicama, the projectile points were usually made of rhyolite, while only a single scraper of the many found was of that rock (Chauchat 1975). Rock crystal was also used in both areas.

The above similarities suggest the Casma occupations were probably contemporaneous with those on the North Coast. Paijan dates from the latter region range from 10,700 BP (Ossa 1978) to 7740 BP (Chauchat 1978). The Casma sites therefore date somewhere within that range, and I suggest a date of 9000-8000 BP for them, assuming a slow southward

expansion of this industry from the North Coast, and the appearance of the subsequent Mongoncillo industry around 8000 BP.

The kind of prey hunted by the Paijan occupants of the Casma region is uncertain. Given the 9000 BP date, it is probable that the game was modern, including deer, guanaco, small mammals, rodents and reptiles. Land snails were undoubtedly collected as well. Both sites are located in elevated positions overlooking the present coastline, but at 9000 BP, the shore would have been five to seven kilometers farther west (from bathymetric data in Richardson (1981)). At that time, these sites would have been overlooking flat stretches of coastal plain, and I have hypothesized possible water sources below each of these sites to which game came to drink (Malpass n.d.).

A68b and the Campanario site represent one part of a yearly subsistence round. Where the groups responsible for these tools resided during other times of the year is uncertain. It is probable that part of the year was spent in the floodplain of the Casma or Sechin rivers, and other times may have been spent at the coast. The recovery of fish remains at inland Paijan sites in the Chicama valley lends credence to this latter idea (Chauchat 1978). Excavations by the author in two rockshelters in the Cordillera Negra at the headwaters of the Sechin River recovered Paijan points at the lowest levels, of forms similar to those from the Campanario site, although of different materials. While these points are as yet undated, it does suggest the possibility that Paijan hunters at least occasionally made trips to high altitude resource zones.

Subsequent to the Paijan occupations, groups using a markedly different toolkit appeared in the Casma region. The Mongoncillo industry

is basically unifacial and is characterized by relatively high percentages (greater than 40%) of secondary tools, particularly small implements, such as graters, notches, fine denticulates, beaked tools, and burins. The majority of these artifacts were probably used in bone- and woodworking, and plant processing. What primary tools were being manufactured with these secondary tools is unknown.

Large tools typically comprised less than 10% of the assemblages, and included utilized cores, choppers, and crude denticulates. These tools probably functioned as large chopping and smashing implements. The bipolar core technique of flake manufacture was used in addition to the direct percussion method. Mortars were relatively common at these sites, suggesting plant processing was a primary activity carried out, although recent evidence from the Paloma site (Jackson and Stocker 1982) indicates these may well have functioned in the grinding of anchoveta.

The singular lack of tools associated with the hunting and processing of terrestrial game is a distinctive characteristic of the Mongoncillo assemblages. Projectile points, bifaces, unifaces and knives do not even comprise 4% of the total tools at these sites. It is of course possible that such activities were carried out using implements of perishable materials manufactured with the secondary tools.

The locations of these sites supports the view that exploitation of lomas resources was the primary focus of activities. The majority of the sites are located within one kilometer of the loma, undoubtedly because it was the only source of wood, fiber, and game in the vicinity. Most sites are clustered around a steep sided ravine in front of the loma which may have been a source of water (Malpass n.d.). These are the

only sites dating to this period in the Casma region, which strongly suggests that lomas resources were an important part of the subsistence round of these people.

As with the Paijan industry, the Mongoncillo people used specific rock types for certain implements. Over 90% of the small flake tools were made of fine-grained materials, whereas the majority of the large tools were coarse-grained. While no quarries or outcrops of fine-grained rock were identified in the survey areas, it is presumed they were present, since cores and nodules were commonly found at the sites, and cobbles were seen along the shoreline. Coarse-grained materials were found both in outcrops and along the beach.

The Mongoncillo industry as a whole bears close typological resemblances to the Siches and Honda complexes of Talara (Richardson 1969) and to the Vegas industry of coastal Ecuador (Lanning 1967b). Similarities are also seen to the artifacts from three sites near the Loma de Lachay, reported by Fung (1968), and to the Arenal and Canario complexes of the Central Coast (Lanning 1963, 1967a). On the basis of these similarities, I tentatively date the Mongoncillo sites between 8000-5000 BP. Comparisons of the projectile points from these sites to dated points from other areas of Peru suggest a similar range of dates.

With regard to contemporaneous coastal complexes, the Mongoncillo industry bears closer resemblances to the ones farther south than to those in the north. Specifically, the presence of stone projectile points and edge-ground cobbles at the Casma sites links them to the southern industries. Both these tool classes are found at the sites near Loma de Lachay, and stone projectile points are found at Ancon-Chillon. Edge-ground cobbles may be present at the latter sites as

well, but the verbal descriptions are not sufficiently detailed to be certain. Neither of these tool classes are present at the sites in Talara or Ecuador. This evidence suggests the cultural developments in the Casma region were more closely related to those of the Central Coast than to those from farther north.

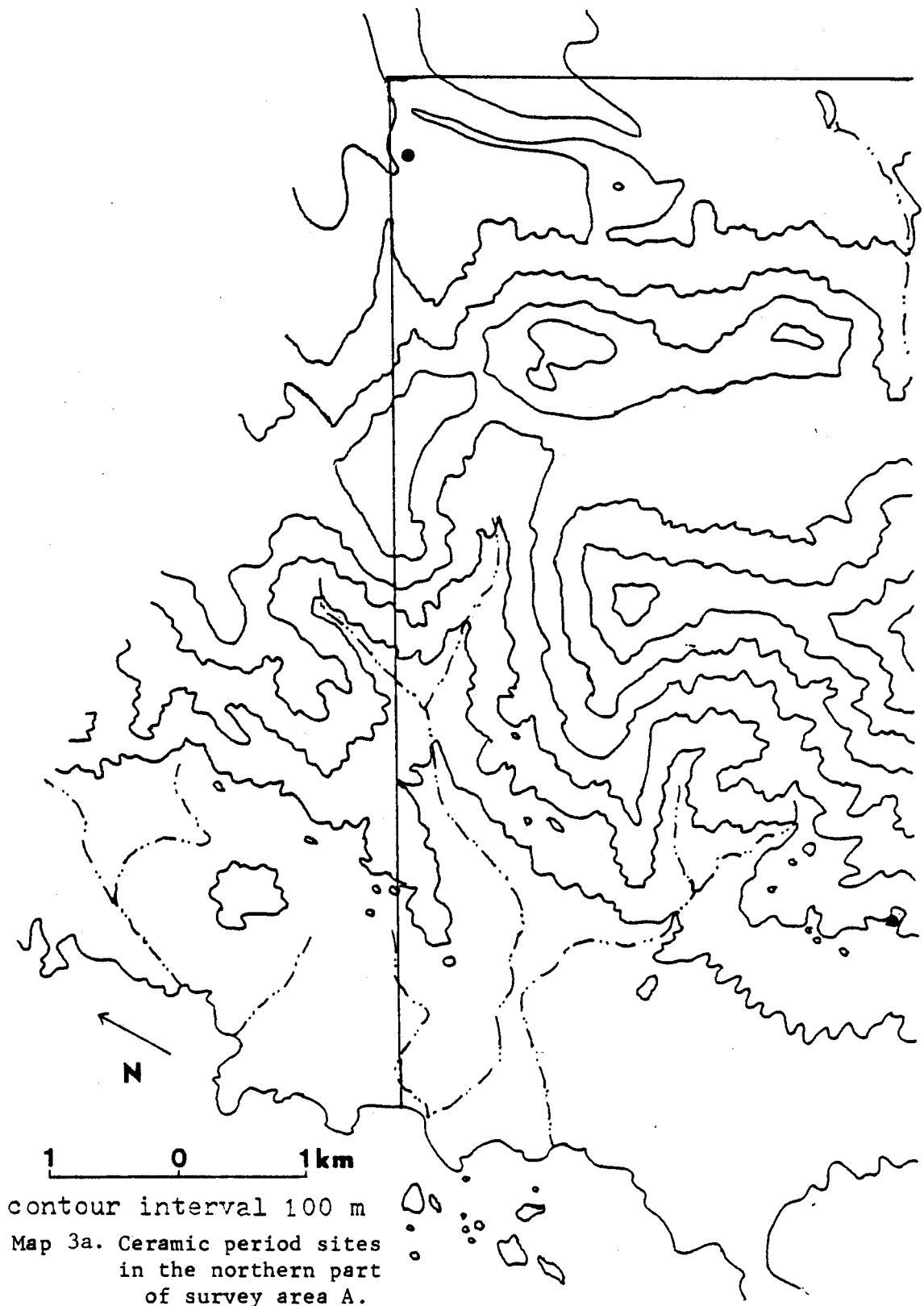
Contacts are also evident between the Casma groups and others living in the highlands during this time period. Of the sixteen unstemmed projectile points found at Mongoncillo sites, fourteen were of the willow leaf form, either the "classic" or Ayampitin variety (Lynch 1967) or the longer variety (Malpass n.d.). These points are most common in highland contexts throughout the Andes, although they have been reported at coastal sites as well (Lanning 1967a; Patterson 1971). Of interest here is the fact that all but two of these points are of rock types rarely if ever used for other artifacts, and all are either complete or broken in use. This suggests the points are of nonlocal origin. Santiago Uceda, the local archaeologist in Casma, pointed out that both the forms and materials are more typical of highland projectile points (personal communication). All sixteen of these points conform to types recognized from the Callejon de Huaylas (Lynch 1970, 1980) and the Puna of Junin (Rick 1980). Thus, it seems likely that these points are of highland origin, indicating contacts between groups on the coast and in the adjacent sierra.

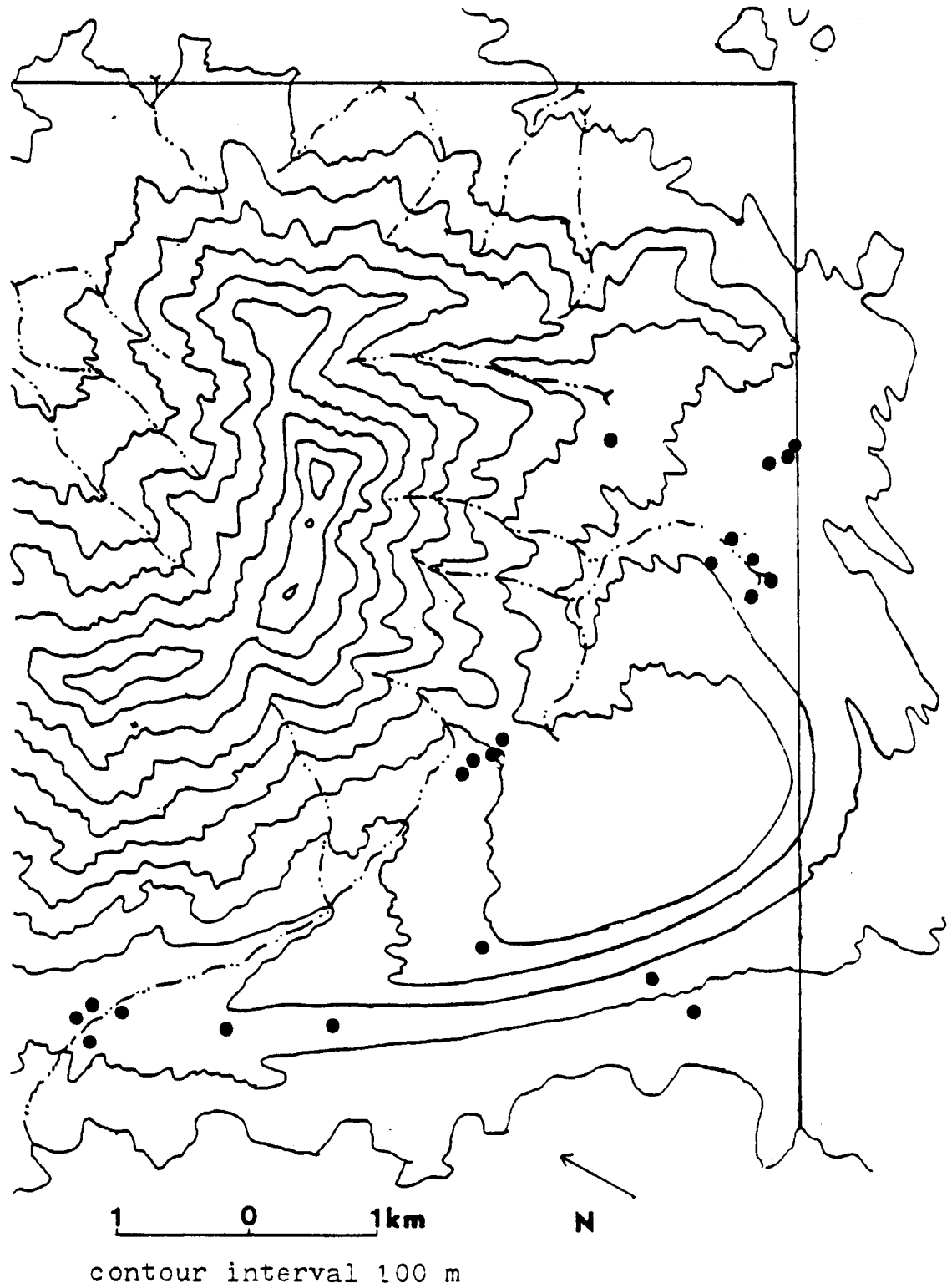
The presence of projectile points of highland origin in Casma, and perhaps at the sites in the Ancon-Chillon region and at Loma de Lachay, but their absence at the sites in Talara and coastal Ecuador can be explained by the proximity of the former areas to highland zones. The areas where the Siches and Vegas complexes are found are separated from

highland regions by large expanses of coastal plain, which is not true of the sites from Casma south. Thus, communication between coast and sierra would have been greatly facilitated in the latter areas.

The problem of reconstructing the complete subsistence round of the Mongoncillo people is the same as for the preceding Paijan groups: only a fraction of the whole remains. Certainly part of the year was spent near the loma, and it is likely that part was spent in the valley floodplain. In addition, the presence of marine shellfish in the middens of some of these sites perhaps indicates that part was also spent at the coast. This would be in keeping with the evidence from other areas of the coast at this time (Chauchat 1978; Jackson and Stocker 1982; Richardson 1973). The suggestion that contacts were maintained with highland groups, as evidenced by the projectile points, suggests the possibility that part of the year might have been spent in the sierra as well. However, I doubt that the entire social unit occupying the valley at this time travelled to the highlands en mass; rather, it is more probable that individuals or families occasionally journeyed there to visit relatives or hunt in adjacent areas. Such activities are documented for ethnographic hunters and gatherers (Bicchieri 1972; Lee and DeVore 1968; Yellen and Harpending 1972).

In addition to the preceramic sites in this study, twenty-four others included lithics, but were identified as dating to ceramic periods (Map 3). Because of the lack of published reports pertaining to such lithic assemblages, a brief description of those collected is given here. Although the sites were not identified as to specific periods because the ceramics were not collected, the overall similarities in the assemblages suggest that there were no major differences from





Map 3b. Ceramic period sites in the southern part of survey area A.

one period to the next.

An important characteristic of the ceramic period sites is their generally small numbers of lithics. The average number of tools per site was only eleven, in contrast to the preceramic sites, which averaged twenty-seven (Malpass n.d.). The lithics present are of a very general nature as well. Large tools, especially denticulates and cores, are common, as are utilized flakes. Noticeably absent are the small flake tools so common at the earlier sites. Two milling stones were found as well. These later groups preferred coarse-grained rocks, particularly diorite, which were most commonly collected as cobbles along the shore.

The results of this analysis support the often mentioned but seldom tested view that ceramic period sites on the coast are poor in lithics and the tools present are of a very general nature. The tools present give few clues as to their functions. The scarcity of small flake tools suggests the relative unimportance of fine wood- and boneworking, while the abundance of large, heavy tools indicates a greater emphasis on smashing and crushing activities.

Three lines of evidence, midden contents, site locations, and the tools, suggest that the exploitation of marine resources was the major activity carried out at the sites in area A during ceramic periods. My subjective evaluation of the middens present indicates that shellfish are by far the most common remains, although land snails are also abundant. This is true even at the sites located near the loma. In addition, the stone tools found at these sites are suitable for the processing of fish and shellfish. The large tools could have been used for opening shellfish and decapitating fish. Some of the utilized flakes

may have functioned as fish scalers: at the site of Loma Lasca in the Santa valley, Donnan and Moseley (1969) interpreted large, primary flakes struck from waterworn cobbles as having been used in this fashion, and it is probable that the numerous examples of such flakes at the Casma sites were used similarly.

The site locations also support the view of intensive exploitation of marine resources. In addition to the sites on Map 3, which only includes those sites where lithic collections were made, there were several shell middens with ceramics located on the cliffs directly above the shoreline. Four other sites, those with major architectural features and ceramics, were also found within one kilometer of the beach. These sites indicate that many of the later occupations of this area were located to specifically take advantage of the locally available maritime resources.

Utilization of the plant resources of the loma also continued. The milling stones found at these sites suggest at least some wild plant resources were being harvested. It is likely that the loma was used principally as a pasture for llama herds. Such uses are known ethnohistorically (Lynch 1971). Herding activities would require few tools which is consistent with the paucity of lithics at these sites. In addition, it is probable that land snails continued to be collected in the loma.

To summarize, the evidence from the ceramic period sites suggests that exploitation of marine resources was the primary reason for the later occupations of this region. The midden from these sites supports this view, and the simple toolkit composed primarily of large tools would have been adequate for such purposes as well. Utilization of the

loma was a second reason for locating sites in the area, both for snail procurement and as pasturage for llama herds.

Conclusions

The distributions of the archaeological sites in the Casma area and the nature of their lithic assemblages reflect changing patterns of resource utilization through time. The reasons for these changes are as yet poorly understood, but are probably related to the environmental changes which occurred at the end of the Pleistocene, including the shift to modern climatic conditions, the rise of sea level, and possibly demographic pressure on resources. A more detailed account of these factors can be found in Malpass (n.d.).

The earliest occupants of the Casma region were Paijan groups, hunters of terrestrial game, who used large stemmed points to kill their prey. It is probable, given the Holocene date of these occupations, that the game exploited was modern. Wild plants would also have been gathered, and it is possible that marine resources were utilized. Evidence from caves above the Sechin valley suggest occasional use of high altitude zones as well.

With the stabilization of the Holocene climate, groups occupying the Casma area began exploiting the resources of the large loma located to the south of the main valley. A variety of specialized flake tools were developed to exploit the floral and faunal resources there. The stone tools present indicate an emphasis on plant resources, although game was also hunted with stone-tipped projectile points. It is likely a wide variety of tools made of perishable materials were also used. Coastal resources were probably gathered during other parts of the year.

Contacts were made with groups living in the highlands, perhaps as part of mating networks or to gain access to resource zones different from those of the coast. Members of the Casma social group would travel to these areas, and individuals and families from those groups would occasionally visit the coast. This way of life lasted for 3000 years or more, reflecting a successful adaptation to the environmental conditions present.

The series of events that occurred after 5000 BP which culminated in the appearance of complex societies in the Casma valley during the Initial Period and later is not well understood. It is uncertain whether any sites in area A date to the period between 5000-3800 BP. Four sites, located midway between the loma and the shore, may reflect occupations during this period. All are located on the same narrow ridge, have a high percentage of white quartz chipping debris but few tools, and all but one have midden with land snails and marine refuse. The locations and middens of these sites suggest a compromise settlement location half way between the ocean and the loma. Such a pattern has been identified from late preceramic sites in the Ancon-Chillon area (Moseley 1975; Patterson 1971).

Large late preceramic settlements are known from Huaynuma and Las Aldas, indicating intensive exploitation of marine resources was occurring during these times. It is of course possible that similar intensive exploitation was present earlier, but all evidence for it has been submerged by the eustatic rise in sea level.

During the Initial Period, there apparently was a major demographic shift to occupation of the valley proper. This is reflected in the appearance of settlements at San Diego, Pampa Rosario, Pampa de las

Llamas, and Sechin Alto, to name a few (Thompson 1964). While the Initial Period temple complex at Las Aldas represents a major construction involving a significant amount of labor and organization, it is unlikely that there was a resident population there (Willey 1971).

The loma continued to be used in the ceramic periods, both as a source of snails and as pasture. The major emphasis of the occupations, however, seemed to be on the marine resources of the region. Such uses continued throughout prehistory up to modern times, and one can still see ranchers driving their cattle out to the loma during the dry summer months, and fishermen walking through the desert to the area to take advantage of the rich marine life that exists in that region.

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