

Archaeological Investigations in the Andean Piedmont
and High Llanos of Western Venezuela:
A Preliminary Report

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In July 1983 we began a research project in the high llanos and Andean piedmont near Ciudad Bolivia, in the Pedraza District of the state of Barinas, Venezuela (Figure 1). The region's tropical climate consists of a dry season from December through March, followed by an 8-month long rainy season during which 90% of the yearly 1100-1800 mm of rain falls. In contrast to other parts of the western Venezuelan llanos, the high llanos and the adjacent piedmont experience a two-month dry spell during July and August, a time called the veranillo by the region's inhabitants (Vila 1960:226; Atlas de Venezuela 1969).

The high llanos, a zone of flat savanna grasslands that extend over elevations between 180 m and 240 m, are free from the seasonal inundations that plague the lower-lying llanos. The adjacent piedmont rises to approximately 800 m, and constitutes a transitional zone between the llanos and the Andean Cordillera, whose tallest point (Pico Bolívar) reaches over 5000 m. The Acequia, Canaguá, and Curbatí rivers originate in the high Andes and traverse the piedmont in steep, narrow valleys before emptying onto the high llanos. Together with a series of tributary streams (called caños), these rivers cross the llanos on their way to the Apure river, which in turn flows into the Orinoco

river (Figure 1).

In the piedmont, relatively well-drained, mineral-rich soils support a tropical forest vegetation (including Jacaranda superba, Ficus sp., Parinarium sp., and Calocarpum sp.). Here, prime agricultural land is limited to stretches of low alluvial soils along rivers, which are highly fertile, friable, and which can be cleared for cultivation and easily tilled with hand tools. The inhabitants of the piedmont today build their small farmsteads on piedmont spurs or remnant river terraces immediately overlooking these productive pockets of alluvium (called vega) where they cultivate maize, beans, sweet manioc, plantains, bananas, coffee, and sugar cane.

The adjacent high llanos are covered with dry savanna grasses (principally Trachypogon montufari and Paspalum carinatum), punctuated by occasional stands of Mauritia palms or small clumps of forest (called matas). Otherwise, tree growth on the high llanos is limited to the gallery forests (including Pithecollium saman, Ceiba pentandra, Luehkea ferruginea) that line the rivers and caños (Sarmiento and Monasterio 1969:580-581; Sarmiento et al. 1971:Table 1). The gray, clayey savanna soils are relatively fertile, but they do not drain well, and they are difficult to till with hand tools. The present inhabitants of the high llanos concentrate their agricultural efforts in the gallery forests, which offer narrow strips of fertile, better-drained, and friable soils. Here, in their traditional conuco plots, farmers plant maize, beans, sweet manioc, plantains, and bananas (Zucchi and Denevan 1979:20; Tamayo 1972:89-94).

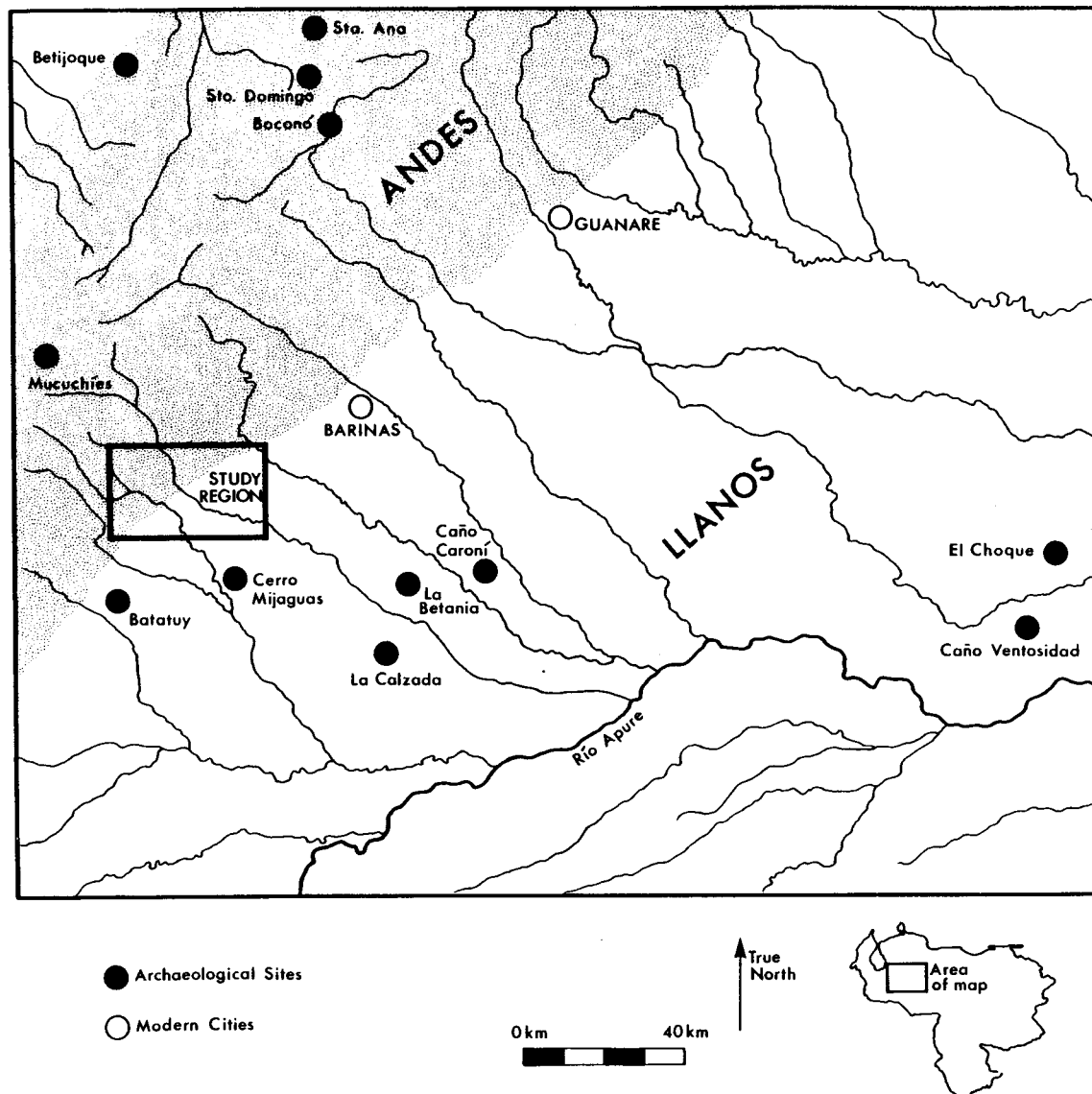


Figure 1. Western Venezuela, showing the location of the study region in relation to the Andes, the llanos, and various previously-investigated archaeological sites.

INDIGENOUS SOCIETIES OF THE SIXTEENTH CENTURY

When European explorers first penetrated the western Venezuelan llanos in the early sixteenth century, they encountered indigenous societies of varying size and complexity. The Jirajara occupied the southern slopes of the Andean Cordillera along the piedmont as far south as the Apure river (See fold-out map in Jahn 1927). Their small, scattered villages usually consisted of a single communal long house (maloca), which according to one source, measured some 200 feet long and 30 feet wide, with a low entrance at each end.

These Jirajara communities united primarily for the purpose of conducting warfare. Groups of villages were under the leadership of a principal chief, who was advised by a council of elders. Prominent Jirajara leaders were entitled to sumptuary privileges, and they enhanced their prestige further by acquiring many wives, often through strategic marriage alliances.

The Jirajara are known to have subsisted primarily upon manioc and plantains. In addition to these two staple crops, they also cultivated maize, and they engaged in hunting and fishing. Entire villages participated in communal fishing expeditions on the major rivers during the dry season. The Jirajara also maintained exchange relationships with neighboring groups, including the groups that inhabited the llanos, from whom they received a variety of tierra caliente (hot country) products.¹

The high llanos, and for that matter, much of the western Venezuelan llanos formed part of the territory of the Caquetío. The Caquetío occupied large villages located out on the savanna, usually near a

river or caño. Villages were politically united under the leadership of one paramount chief. For example, the early German explorer Nicolaus Federmann noted that 23 villages along one river were united under a paramount chief. One of the member villages contained some 4000 inhabitants, and Federmann estimated that this paramount chief could easily raise a fighting force of 30,000 men. Two other such polities on the llanos could count on 16,000 and 8,500 fighting men to defend their territories (Federmann 1962:191-192; Morey 1975:96).

Caquetío villages were made up of multiple extended family residences. One Caquetío chief is described sitting in a spacious structure, which might have been his residence or perhaps a public building where he carried out his chiefly duties. Status differences in Caquetío society were marked not only by the size of one's house, but also by the number of wives one had (some particularly important men had a dozen or more wives whom they secured through marriage alliances), and the quantity of shell necklaces one wore.

The Caquetío supported their populations by cultivating plots of maize, squash, manioc, and sweet potatoes in the gallery forests along rivers and caños, and on fields out in moist areas of the savannas as well. They also hunted and fished, especially during the dry season when rainfall agriculture was not possible and when the rivers were low.

The Caquetío's relationships with neighboring groups can be characterized as a pattern of trading and raiding. They maintained extensive trade networks both with other groups inhabiting the llanos and with groups outside the llanos, by means of which the Caquetío exchanged and received pottery, fresh-water snail shell disks, palm products,

vegetable dyes, and salt and gold from the Andes. Aside from trading, the Caquetío were involved in almost continual warfare with certain neighboring groups. Consequently, the Caquetío fortified their villages and were prepared to muster a fighting force on short notice. In general, most warfare took the form of surprise raids on villages for the purposes of looting and taking captives (Morey 1975:257-269,282-283).

ARCHAEOLOGICAL CONTEXT OF THE STUDY REGION

Our study region is located between two zones, the Andean Cordillera and the middle and low llanos, which fortunately have received some archaeological attention (see Figure 1). José M. Cruxent's program of survey and test excavations in a number of Andean regions (including the sites of Betijoque, Santa Ana, and Santo Domingo) during the late 1940s and 1950s resulted in the first systematic regional chronology for western Venezuela, extending from approximately 250 B.C. to A.D. 1500 (Cruxent and Rouse 1958-1959:247-260). Erika Wagner has contributed detailed occupational chronologies (ranging from ca. A.D. 300 - 1500) for several Andean river valleys, including the Boconó and Mucuchíes regions (Wagner 1967, 1972, 1973a, 1973b, 1979).² More recently, Wagner's excavations at Lagunillas, on the eastern shore of Lake Maracaibo have yielded evidence of an earlier occupation that includes the remains of pile dwellings, manos and metates, and ceramics decorated with broad-line incising and applique (designated the Lagunillas complex), with associated radiocarbon dates that range between 480 and 210 B.C. (Wagner and Tarble de Ruíz 1975; Wagner 1980).

The prehistoric mounds, causeways, and ridged fields of the western Venezuelan llanos have long intrigued explorers and archaeologists.

Systematic archaeological research had to wait until the late 1940s, when Cruxent and his associates began surveying the llanos and conducting test excavations at certain mound sites. With the ceramics from these excavations, Cruxent and Rouse established the first regional chronology for the llanos.³

In 1964, Alberta Zucchi began a long-term program of archaeological research in the western Venezuelan llanos. Her first excavations at the mound site of Hato La Betania (Figure 1) led to a detailed ceramic analysis which expanded upon Cruxent and Rouse's sequence by establishing three subphases of their Caño del Oso complex. Zucchi called the subphases Caño del Oso A, B, and C (ca. 230 B.C. - A.D. 650), and she added the succeeding La Betania complex (ca. A.D. 650 - 1200), naming the entire sequence the Osoid series (Zucchi 1967:151-156).

Subsequent excavations by Zucchi at the Hato de La Calzada site (Figure 1) produced a complete stratigraphic cross-section of the main mound and 29 radiocarbon dates (Zucchi 1973:Table 1). Twenty-six of these dates fell within the 230 B.C. - A.D. 600 range. Of the three outlying dates, one was modern, one was colonial (A.D. 1610), and one was 920 B.C. Accordingly, Zucchi extended the Osoid series back to 1000 B.C. (Zucchi 1972). Other researchers, however, have suggested that additional radiocarbon dates are needed to support that claim (Garson 1980:62,295-296; Wagner n.d.). As for the mound itself, there is little doubt that it was raised over a relatively short time during the Caño del Oso C phase, since charcoal samples from hearths located at its base and top dated between A.D. 540 - 550 (Zucchi 1973:186, Table 1). Zucchi has characterized the Caño del Oso complex by its

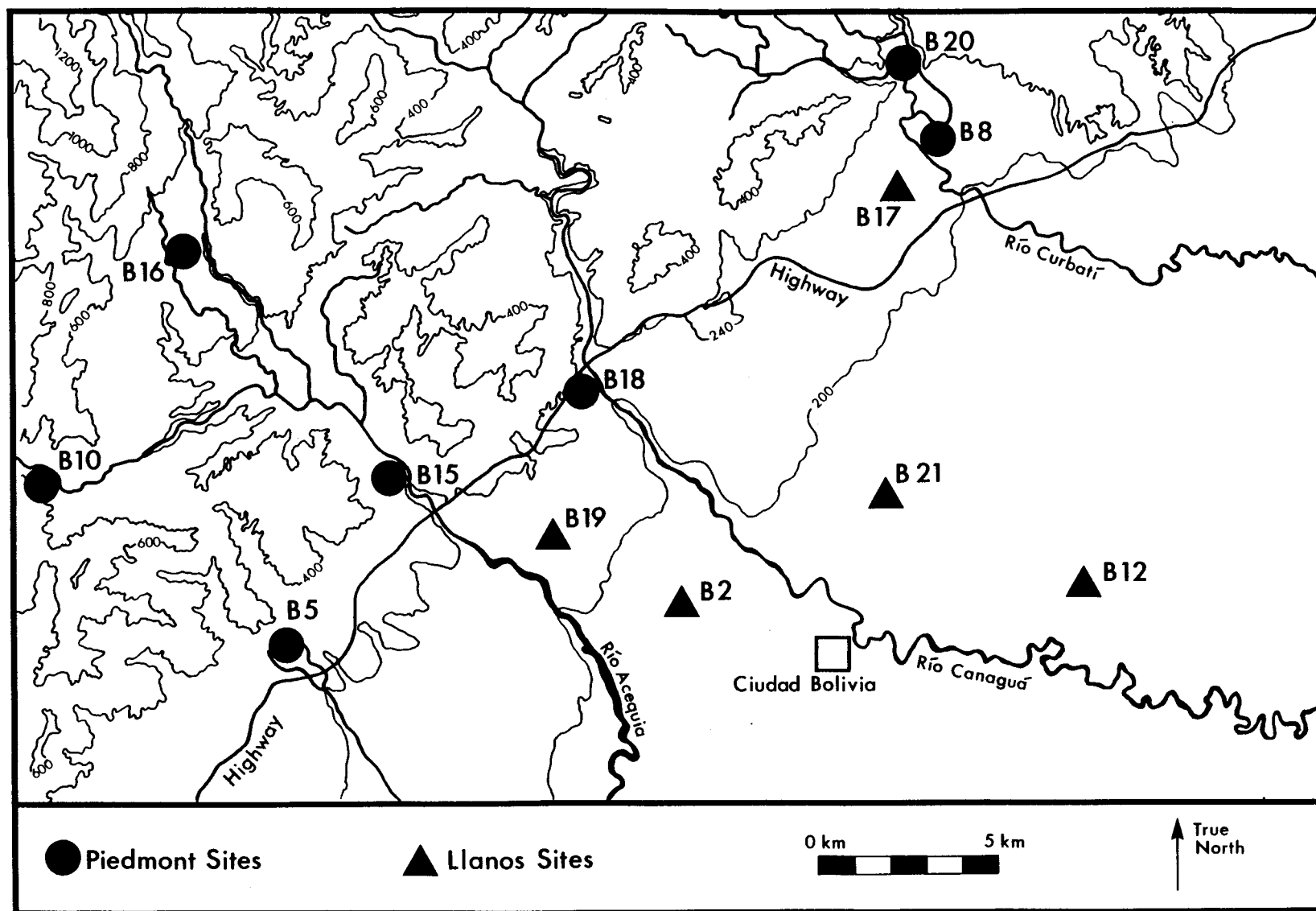


Figure 2. The study region in the vicinity of Ciudad Bolivia, Venezuela, showing sites located during the 1983 field season.

elaborate polychrome ceramics, primary burials, maize agriculture, hunting, fishing, and construction of mounds and causeways. The La Betania complex apparently witnessed the addition of manioc cultivation and the production of cotton.

More recently, Zucchi has established the Caño Caroní complex (ca. A.D. 1000 - 1400), based on her excavations at a small non-mound site located in the gallery forest along the Caño Caroní and at similar sites in the vicinity of Caño Ventosidad (Figure 1). She characterizes these complexes as simple tropical forest adaptations, marked by manioc agriculture, hunting, fishing, secondary urn burials, and perhaps the building of ridged fields as well (Zucchi 1975; Zucchi and Denevan 1979).⁴

The only archaeological reconnaissance in the high llanos and adjacent piedmont of Barinas has been carried out by a local group of amateur archaeologists whose main interest has been to record an assortment of petroglyphs in the piedmont, though in one instance they conducted salvage excavations in a burial mound at the site of Cerro Mijaguas (see Figure 1).⁵ Otherwise, the archaeology of the high llanos is limited to Jorge Armand's brief excavations at the small mound site of Batatuy, southwest of our study region, where he recovered radio-carbon dates of A.D. 220 and A.D. 510 associated with Osoid ceramics (Armand 1975).

THE 1983 FIELD SEASON

During the summer of 1983, we undertook a preliminary season of fieldwork in the study region. Over a period of about six weeks, we conducted a regional survey, made topographic maps of six sites, and

carried out test excavations at two sites.

In our regional survey we used the following techniques: 1) systematic field-by-field survey of selected zones; 2) systematic examination of road cuts, river banks, drainage ditches, construction sites, and other places where sub-surface deposits were exposed; and 3) informant survey. All three techniques resulted in the discovery of archaeological sites, both in the Andean piedmont and in the high llanos (see Figure 2). These sites were all located on 1:25,000 aerial photographs and on 1:100,000 topographic maps of the region.

A second phase of our 1983 research involved topographic mapping of individual sites, using alidade and plane table as well as Brunton compass and tape measure. Topographic maps were made of the following sites: B2, B5, B8 (see Figure 3), B17, and B21; the topographic map of B12 is still in progress (see Figure 5).

The third and final phase of our 1983 field season consisted of test excavations at B8, a piedmont site, and at B12, a llanos site. The locations of these test excavations are indicated in Figures 3 and 5. The purpose of the test excavations was to recover systematic, stratigraphically-controlled samples of ceramics from these two representative sites.

As a result of our regional survey, we can state with confidence that both the Andean piedmont and the high llanos contain a number of prehistoric sites (Figure 2). Yet, it is also the case that the sites of the two zones differ significantly in terms of their size range, architectural complexity, and associated ceramics.

The piedmont sites are typically situated on piedmont spurs or

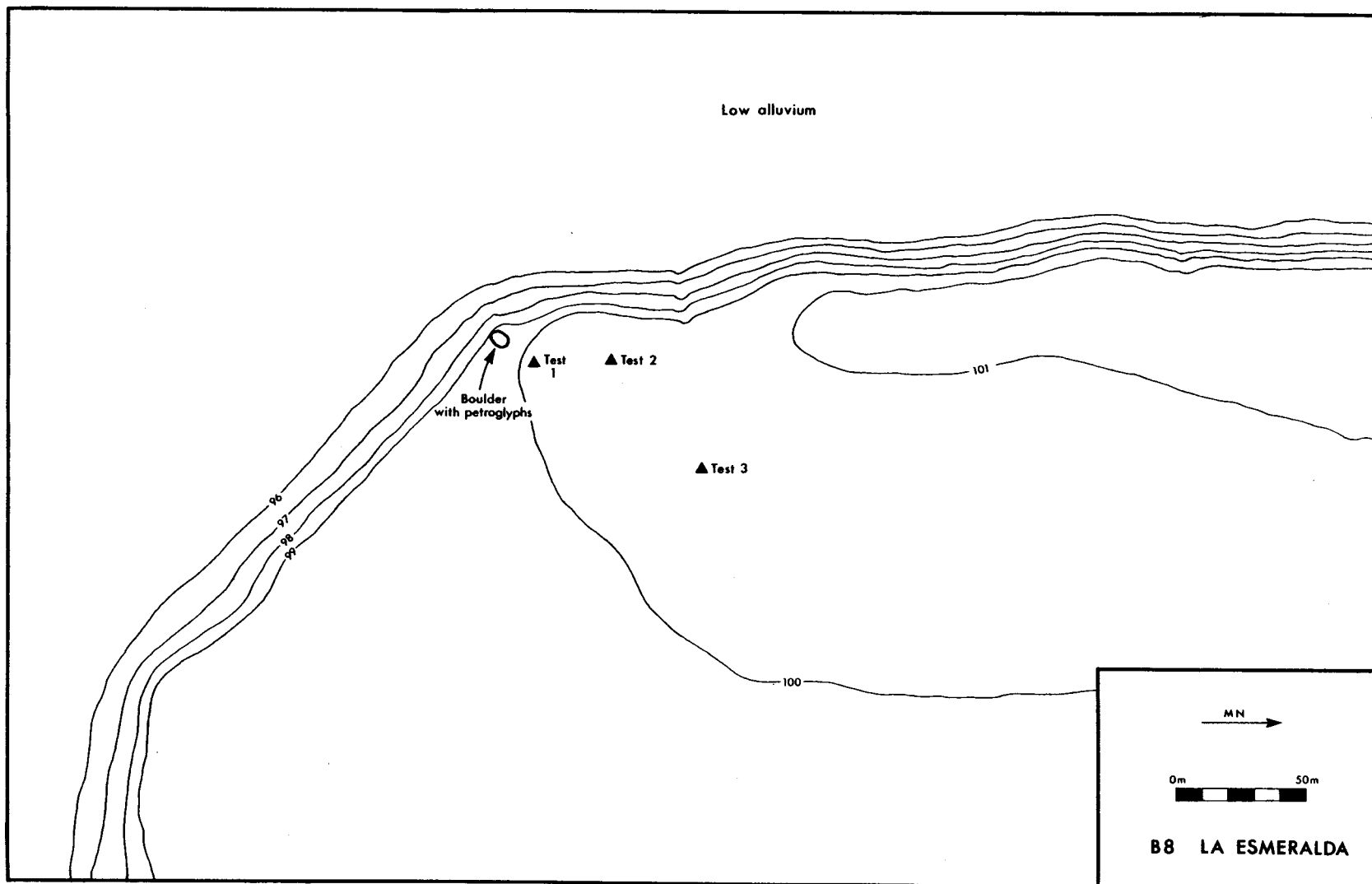
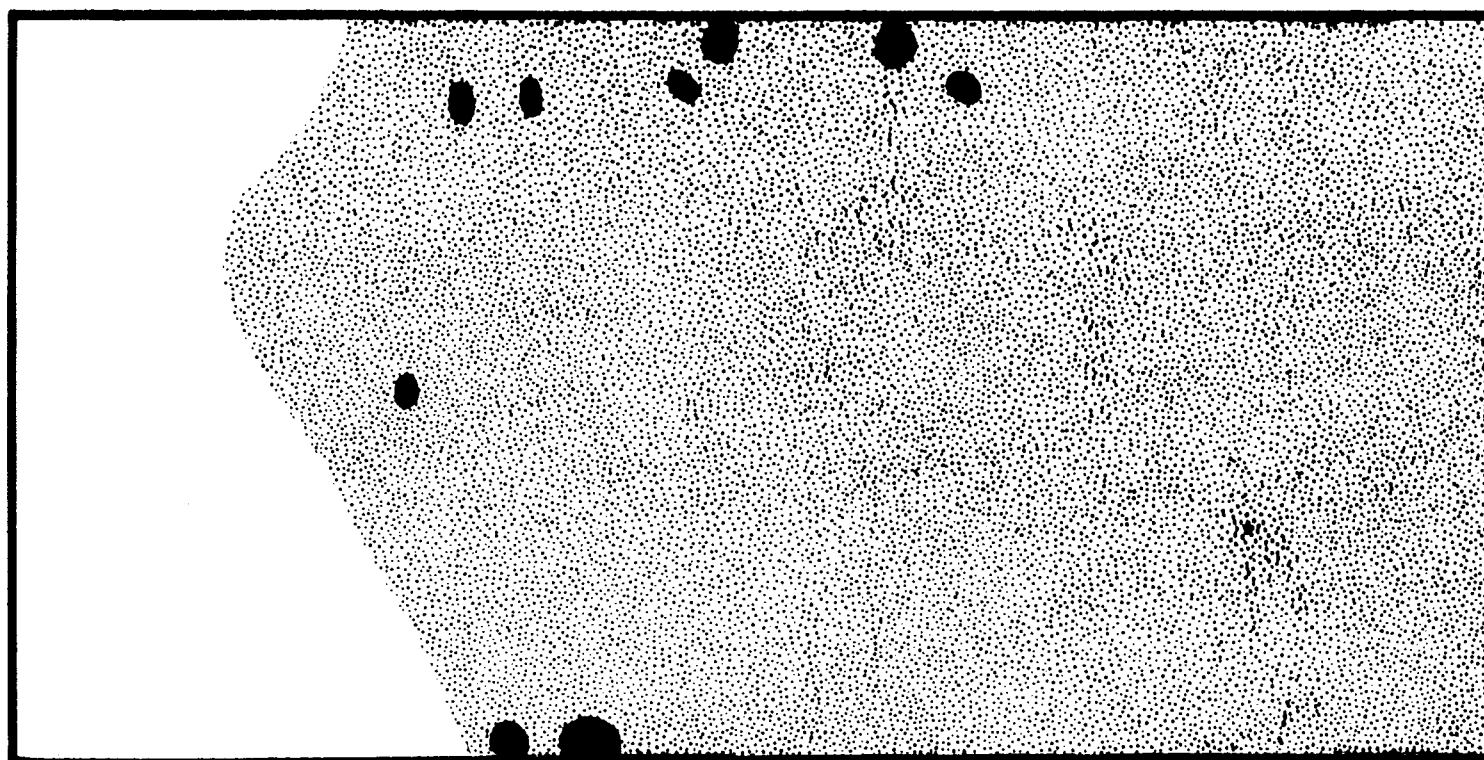


Figure 3. Topographic map of the archaeological site of La Esmeralda (B8), showing location of inscribed boulder and test excavations conducted during the 1983 field season.



Packed earth surface



Postmold

M N



0 cm

50 cm



B8 Test 1

Figure 4. Plan of possible housefloor with postmolds, at a depth of approximately 80 cm in Test 1 excavation at La Esmeralda (B8); exposed during the 1983 field season.

remnant river terraces overlooking zones of low alluvium (vega) along-side rivers that bring run-off from the Andes down to the llanos. No discernible settlement hierarchy was manifested by the piedmont sites that we located during the 1983 survey; all range from 3 to 5 hectares in size. No artificial mounds or causeways were found at any piedmont sites, but large boulders with petroglyphs occurred at most of these sites. For example, Figure 3 shows the location of a large boulder with petroglyphs at the site of La Esmeralda, or B8, where we conducted test excavations. The only architectural remains we found at any piedmont site were recovered during our excavations at B8. At a depth of 80 cm in Test 1, we exposed a hard-packed earthen surface and a series of postmolds (see Figure 4). We have interpreted this deposit as the partial remains of a wattle and daub structure, a form of construction (called bahareque) still commonly seen in the region.

At most of the piedmont sites we found ceramics of a distinctive style that we have called the Curbatí complex. This pottery is relatively thin-walled (usually less than 8 mm thick), coarse-tempered, well-burnished, and often decorated with deep grooves and incisions. Modelling and appliqué are also common decorative techniques. Painting is infrequent and is restricted to monochrome applications, usually red in color. Vessel shapes include hemispherical bowls, composite silhouette bowls, and ollas. Most of our samples of Curbatí complex pottery came from disturbed surfaces (eroded river banks, drainage ditch profiles) or from the excavations at site B8, where the pottery began to appear at a depth of 30-40 cm below the surface. In terms of stylistic

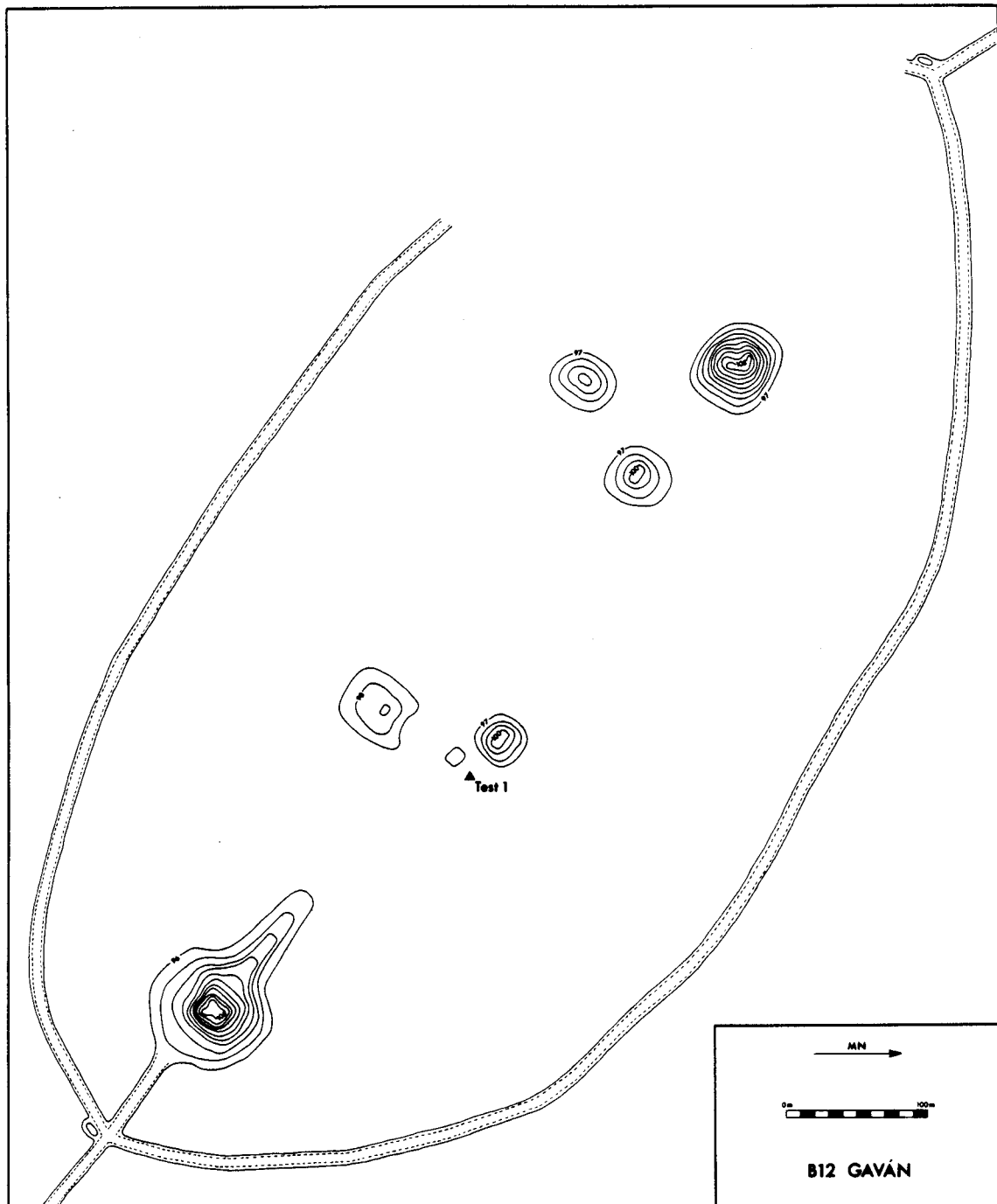


Figure 5. Topographic map of the central part of the archaeological site of Gavan (B12), showing the location of major artificial mounds, causeways, and the test excavation conducted during the 1983 field season (map in progress).

affinities, Curbatí complex pottery is similar in some respects to that of the Lagunillas complex (ca. 500 - 200 B.C.), and it is also stylistically similar to the Santa Ana complex (Wagner and Tarble de Ruíz 1957: 109-117; Tarble 1977). Such stylistic similarities could indicate that the Curbatí complex pottery is broadly contemporaneous with these previously-excavated ceramics, a possibility which we plan to investigate in future seasons.

We also found material pertaining to a protohistoric or historic period at two locations in the piedmont. This pottery is relatively thick-walled (usually over 8 mm), fine-tempered, usually smoothed and not burnished, and undecorated. The predominant vessel forms appear to be utilitarian ollas and bowls. We have tentatively labelled this pottery the Caño Seco complex, and we consider it to be stylistically similar to the thick-walled undecorated pottery (San Nicolás Simple) of the protohistoric San Nicolás phase, recovered by Wagner near Boconó in the Andes (Figure 1) (Wagner 1972:44-46). We found Caño Seco pottery on the surface at sites B15 and B20 in the piedmont (Figure 2); at B15, Caño Seco ceramics were associated with glazed pottery of the Colonial period. Our preliminary interpretation of the Cano Seco complex is that it might be a manifestation of the ethnohistorically-reported Jirajara occupations of the Andean piedmont; we will explore this possibility further in future seasons.

A different archaeological picture is presented by the sites on the high llanos. First of all, there is a clear two-level settlement hierarchy here; most sites assume sizes of less than 10 ha, but one site, Gaván or B12, covers an area of at least 60 ha. No boulders with

petroglyphs were found at the high llanos sites, but all except Bl7 contained artificial mounds, and an extensive causeway network was associated with Bl2. Bl2 also had more mounds, and larger mounds, than the smaller sites on the high llanos. In Figure 5 we present a topographic map, still in progress, of the central part of Bl2. Shown in the map is an 80 percent complete oval causeway (the missing 20 percent may have been destroyed by a caño that passes just to the northwest of the site). The oval measures some 950 meters long by 460 meters wide, circumscribing an area of roughly 30 ha. The site extends in a south-westerly direction from this central plaza area. The largest mound here, on the southeast side of the plaza, attains a height of 10 m and measures 90 m by 70 m at its base. It was apparently ascended by a ramp, 80 m long, that protruded into the central part of the plaza. By contrast, the second largest site we found, B2, had only 3 mounds, the tallest of which reached 6 m, arranged around a 150 m-long plaza.

It is likely that the six large mounds at Bl2 (Figure 5) represent ceremonial structures and/or elite residences. We also noted (but lacked time to map in 1983) many smaller mounds at Bl2, both within and outside the area defined by the oval causeway. These small mounds (most reaching heights of one meter or less) were probably residential in function; even today, the inhabitants of the llanos build their houses upon low natural elevations (bancos) or artificial rises.

The pottery that we recovered from our test excavations at Bl2, and indeed the pottery that we collected from all the high llanos sites, differed from both the Curbatí complex and the Caño Seco complex. This material, which we have designated the Gaván complex, is coarse-tempered,

with wall thicknesses ranging from approximately 6 mm to 10 mm. Incised decoration is present, but rare. Painting appears to be the most common decorative technique. Representative vessel shapes include wide-mouthed, S-shaped, and hemispherical bowls, composite silhouette bowls, and shallow bowls, many supported on solid and hollow feet, along with a variety of ollas. In general, we feel that the Gaván complex is stylistically similar to, and hence perhaps broadly contemporaneous with, the Osoid series defined for the middle and low llanos by Zucchi (Zucchi 1967, 1972).

The ceramic complexes defined for the study region as a result of our 1983 fieldwork provide us with a preliminary chronological framework. In future seasons we intend to collect additional samples in order to define better these ceramic complexes and to determine the chronological relationships between them. Radiocarbon dating, thermoluminescence dating, stratigraphy, seriation, and stylistic cross-dating will be among the techniques employed for this purpose.

CONCLUSION

Although our study region is virtually terra incognita, it is strategically situated between areas that have seen considerable archaeological research: the Andean Cordillera and the middle and low llanos (see Figure 1). Our project aims to provide a linkage between the developmental sequences of these better-known regions and thus contribute to a broader understanding of western Venezuelan culture history. Among the specific contributions we hope to make will be an assessment of the chronological placement of the petroglyphs found at piedmont sites. While petroglyphs have been reported in various parts of

Venezuela (see, for example, Sujo Volsky 1975; Delgado 1976; Huizi and de Valencia 1982), the chronology of Venezuelan petroglyphs is still undetermined. The temporal placement of the initial occupation of the llanos is another problem that our work should help clarify (see Zucchi 1972, 1973; cf. Garson 1980:62,295-296; cf. Wagner n.d.).

A further goal of our research will be to document the relationships, if any, that may have existed between the prehistoric occupations of the Andean piedmont and the high llanos. Were the two zones inhabited contemporaneously by ethnically distinct peoples? If so, did they interact with one another through exchange and/or warfare? On the other hand, might the Curbatí and Gaván ceramic complexes pertain to successive chronological periods? If so, could the observed differences in settlement patterns and architecture associated with the two complexes reflect important organization differences representing processes of regional cultural evolution (or decline)? As we continue our research in Barinas, we will endeavor to address questions such as these, thus bringing our archaeological data to bear on issues of general anthropological concern.

Footnotes

1. Major sources of information about the Jirajara can be found in the bibliography of Morey 1975.
2. Mario Sanoja and Iraida Vargas have contributed a complementary chronological sequence for the Chama river valley (see Sanoja and Vargas 1967; Vargas 1969).
3. The Caño del Oso complex (see Cruxent and Rouse 1958-1959:185-187).
4. Jointly with William Denevan, Zucchi undertook the first systematic survey and excavation of ridged fields along Caño Ventosidad (see Denevan and Zucchi 1978).

5. The Centro Arqueológico Kuayú of Barinas (see Kuayú 1981).
6. We would like to acknowledge the support of the Connecticut Research Foundation (grant # 1171-000-22-00220-35-220). Our studies have been conducted in close collaboration with the Department of Anthropology, Instituto Venezolano de Investigaciones Científicas (IVIC). We are grateful for the warm encouragement extended to us by Dr. Erika Wagner and Dr. Alberta Zucchi. We also thank Pablo Novoa Lavarez and María Andueza Guttierrez.

References

- Armand, Jorge
1975 Batatuy. Ediciones del Museo Arqueológico, No. 1. Universidad de los Andes. Mérida.
- Atlas de Venezuela
1969 Ministerio de Obras Públicas. Primera Edición. Caracas.
- Cruixent, José M. and Irving B. Rouse
1958-1959 An Archaeological Chronology of Venezuela. Two volumes. Pan American Union, Social Science Monographs, No. 6.
- Delgado, Rafael
1976 Los Petroglifos Venezolanos. Monte Avila Editores. Caracas.
- Denevan, William M. and Alberta Zucchi
1978 "Ridged-Field Excavations in the Central Orinoco Llanos, Venezuela." In Advances in Andean Archaeology. Edited by David L. Browman. Mouton Publishers. The Hague.
- Federmann, Nicolas
1962 Historia Indiana o Primer Viaje de Nicolas Federmann. In Descubrimiento y Conquista de Venezuela: Textos Históricos Contemporáneos y Documentos Fundamentales. Tomo II. Cubagua y la empresa de los Belzares. Biblioteca de la Academia Nacional de la Historia, No. 55. Fuentes para la Historia Colonial de Venezuela. Italgráfica C.A. Caracas. (Originally published in 1557).
- Garson, Adam G.
1980 Prehistory, Settlement and Food Production in the Savanna Region of La Calzada de Paez, Venezuela. Unpublished Ph.D. dissertation. Yale University. University Microfilms. Ann Arbor.
- Huizi, Isabel and Ruby de Valencia
1982 El Diseño de los Petroglifos Venezolanos. Editorial Arte Montana Gráfica. Caracas.

- Jahn, Alfredo
1972 Los Aborígenes del Occidente de Venezuela. Litografía y Tipografía del Comercio. Caracas.
- Kuayú, Centro Arqueológico
1981 Arqueología del Estado Barinas. Talleres de la Imprenta Municipal de Caracas. Dirección de Información y Relaciones. Publicaciones de la Gobernación del Distrito Federal. Caracas.
- Morey, Nancy C.
1975 Ethnohistory of the Colombian and Venezuelan Llanos. Unpublished Ph.D. dissertation. University of Utah. University Microfilms. Ann Arbor.
- Sanoja, Mario, and Iraida Vargas
1967 "Proyecto: Arqueología del Occidente de Venezuela. Primer Informe General." Economía y Ciencias Sociales 9(2):25-60.
- Sarmiento, G., and M. Monasterio
1969 "Studies on the Savanna Vegetation of the Venezuelan Llanos I. The Use of Association Analysis." Journal of Ecology 57:579-598.
- Sarmiento, G., M. Monasterio, and J. Silva
1971 "Reconocimiento Ecológico de los Llanos Occidentales: I. Las Unidades Ecológicas; II. El Norte del Estado Barinas." Acta Científica Venezolana 22:52-71.
- Sujo Volsky, Jeanine
1975 "El Estudio del Arte Rupestre en Venezuela." Montalbán 4:709. Universidad Católica Andres Bello, Instituto de Investigaciones Históricas, Centro de Lenguas Indígenas. Caracas.
- Tamayo, F.
1972 Los Llanos de Venezuela. Two volumes. Colección Científica 3-4. Monte Avila Editores. Caracas.
- Tarble, Kay
1977 Comparación Estilística de Dos Colecciones del Noroeste de Venezuela: Una Nueva Metodología. IVIC, CEA. Ernesto Armitano, Editor. Caracas.
- Vargas Arenas, Iraida
1969 La Fase San Gerónimo: Investigaciones Arqueológicas en el Alto Chama. Instituto de Investigaciones Económicas y Sociales, Colección Antropológica, No. 1. Universidad Central de Venezuela. Caracas.
- Vila, P.
1960 Geografía de Venezuela. Vol. I. Ministerio de Educación. Caracas.

Wagner, Erika

- 1967 The Prehistory and Ethnohistory of the Carache Area in Western Venezuela. Yale University Publications in Anthropology, No. 71. New Haven.
- 1972 "La Protohistoria e Historia Inicial de Boconó, Estado Trujillo." Antropológica 33:39-60.
- 1973a "The Mucuchíes Phase: An Extension of the Andean Cultural Pattern into Western Venezuela." American Anthropologist 75:195-213.
- 1973b "Chronology and Cultural Relationships of the Betijoque Phase in Western Venezuela." Relaciones Antropológicas: A Newsletter Bulletin on South American Anthropology I(1):13-17.
- 1979 "Arqueología de los Andes Venezolanos: Los Páramos y la Tierra Fría." In El Medio Ambiente Páramo. Edited by M. L. Salgado-Labouriau. Ediciones CEA-IVIC, UNESCO, CIFA. Caracas.
- 1980 Los Pobladores Palafíticos de la Cuenca de Maracaibo. Cuadernos Lagoven. Caracas.
- n.d. "Central and Western Venezuela." In Chronologies in South American Archaeology. Edited by C. Meighan. Academic Press. New York.

Wagner, Erika, and Kay Tarble de Ruíz

- 1975 "Lagunillas: A New Archaeological Phase for the Lake Maracaibo Basin, Venezuela." Journal of Field Archaeology 2:105-118.

Zucchi, Alberta

- 1967 La Betania: Un Yacimiento Arqueológico del Occidente de Venezuela. Two volumes. Unpublished Ph.D. dissertation. Universidad Central de Venezuela. Caracas.
- 1972 "New Data on the Antiquity of Polychrome Painting from Venezuela." American Antiquity 37:439-446.
- 1973 "Prehistoric Human Occupations of the Western Venezuelan Llanos." American Antiquity 38:182-190.
- 1975 Caño Caroní. Facultad de Ciencias Económicas y Sociales. División de Publicaciones. Universidad Central de Venezuela. Caracas.

Zucchi, Alberta, and William M. Denevan

- 1979 Campos Elevados e Historia Cultural Prehispánica en los Llanos Occidentales de Venezuela. Universidad Católica Andres Bello. Caracas.