

THE SITE OF PUMPUENTSA AND THE PASTAZA PHASE IN SOUTHEASTERN LOWLAND ECUADOR

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INTRODUCTION

The Pumpuentsa archaeological site, located in the tropical lowlands of southeastern Ecuador, was discovered during a brief reconnaissance in August of 1976 (Athens, 1985).¹ The materials recovered from a small test excavation serve to highlight some of the problems in current interpretations of the Pastaza Phase with which the site seems to be affiliated. This article will review these problems as well as discuss findings from the Pumpuentsa site.

The Pastaza Phase was first described by Porras (1975), who had conducted excavations at the Huasaga site, about 20 km. from the Pumpuentsa site (fig. 1). In his detailed and amply illustrated report, Porras identifies pottery with the combined use of incision and punctuation as the most important diagnostic of this phase (Porras Garcés, 1975, p. 129):²

Lo que consideramos el Rasgo Diagnóstico de esta fase es el uso contemporáneo en variedad de combinaciones y motivos, del inciso con la puntuación. En general, el tipo dominante de la decoración es el que acabamos de apuntar y que llamamos Pastaza Inciso y Punteado.

The designs are highly variable, and red or white paint is sometimes found inside the incisions. Comparison with Porras' (1975) line drawings and photographs leaves no doubt that this same distinctive pottery, P. Incised and Punctate, is present in the Pumpuentsa site. The dating of the Pastaza Phase is considered to be between 2000 and 1000 years B. C., which is the Early Formative in Ecuador (Porras Garcés, 1980, pp. 113, 117; 1987b, p. 224).

Results of the present investigations at the Pumpuentsa site, limited as they are, suggest the need for caution in accepting an Early Formative age for the Pastaza Phase. Two new radiocarbon dates indicate that the pottery may be much more recent. Several differences between the pottery complexes of the Pumpuentsa and Huasaga sites are also evident, as will be detailed in the following discussion.

ARCHAEOLOGICAL INVESTIGATIONS IN THE SOUTHERN ORIENTE

The only archaeological investigations in the area prior to 1976 were those conducted by Harner (1972, pp. 13-14), who test excavated two sites. These were located in the middle Upano River valley, considerably west of the Pumpuentsa area (near Sucúa, see fig. 1). Each site contained a different ceramic complex, with one producing a date of 609 ± 440 years B.C. (uncorrected) in association with artificial earth mounds and ridges. The other site contained abundant "Red-banded Incised" pottery, and dated to A.D. 1041 ± 160 years (uncorrected). Harner (1972, p. 13) notes that the Red-

banded Incised pottery is the same as that recovered in limited quantities by Collier and Murra (1943, pp. 61-62) in the adjacent highland province of Azuay. This pottery, it may be noted, falls in the late part of the stratigraphically based Cerro Narrío ceramic sequence (Collier and Murra, 1943, pp. 80-82).³

A description of both ceramic complexes was undertaken by Herod (1970). While the later Yaunchu complex does show some general resemblances to Pastaza Phase pottery, especially with its "fancy incised textured ware," neither complex has the distinctive P. Incised and Punctate style, and there are other differences as well. The earlier Ipíamais style is "characterized by white on buff; with red used over the buff, but not under the white paint" (Herod, 1970, p. 108).

More recently, Porras has continued his work in southeastern Ecuador, first at Cave of the Oil Birds (Cueva de los Tayos) on the Santiago River and nearby locations, and subsequently at what he refers to as a large ceremonial site on the Upano River (Porras Garcés, 1987b, pp. 220-230). He has noted that some of the pottery from the Santiago River area has similarities to Pastaza Phase materials (Weber, 1981, p. 204). Chronologically, Porras lists the Pre-Upano Phase as the earliest, with beginning and ending dates of 2750 and 2520 B.C. (see discussion below; all radiocarbon-based dates are uncalibrated unless otherwise noted). There follows the Pastaza Phase, at 2000-1000 B.C., and then the Los Tayos Phase, which dates to 1500 B.C., as determined by radiocarbon dates on shell and thermoluminescence dates (Porras Garcés, 1987b, pp. 227-228). The latest phases are those of Upano I, II, and III, which are assigned dates of 1100 B.C.-A.D. 120, 40 B.C.-A.D. 170, and A.D. 640-940 respectively.

The Upano ceremonial site, named the "Sangay Complex" (Porras Garcés, 1987a, p. 33), is located 30 km. north of Macas at an elevation of 1200 m. above sea level. The site consists of at least 180 truncated pyramid mounds, roadways, canals, and other remains in an area 2600 m. in length and 100-700 m. wide. Some of the mounds are said to form geoglyphs representing a feline and a man in coital position. Porras' investigations at this site between 1978 and 1984 yielded 18 radiocarbon assays as well as a seriation study based on the recovery of 33,597 pottery sherds (Porras Garcés, 1987a). Upano phases I, II, and III, constituting the Upano Tradition, are characterized by Red-banded Incised pottery, a Black smudge ware, and Red-on-Buff pottery (Porras Garcés, 1987a, p. 298; 1987b, p. 236). Other pottery types are used to distinguish the three phases. Porras (1987a, pp. 267-268, 320) believes that the Upano pottery has greater similarity in vessel form and decorative elements to pottery from the Ecuadorian coast (Valdivia, Machalilla, and Chorrera) and from the Cotacollao site in the highlands near Quito than it does to the pottery of other eastern lowland pottery phases.

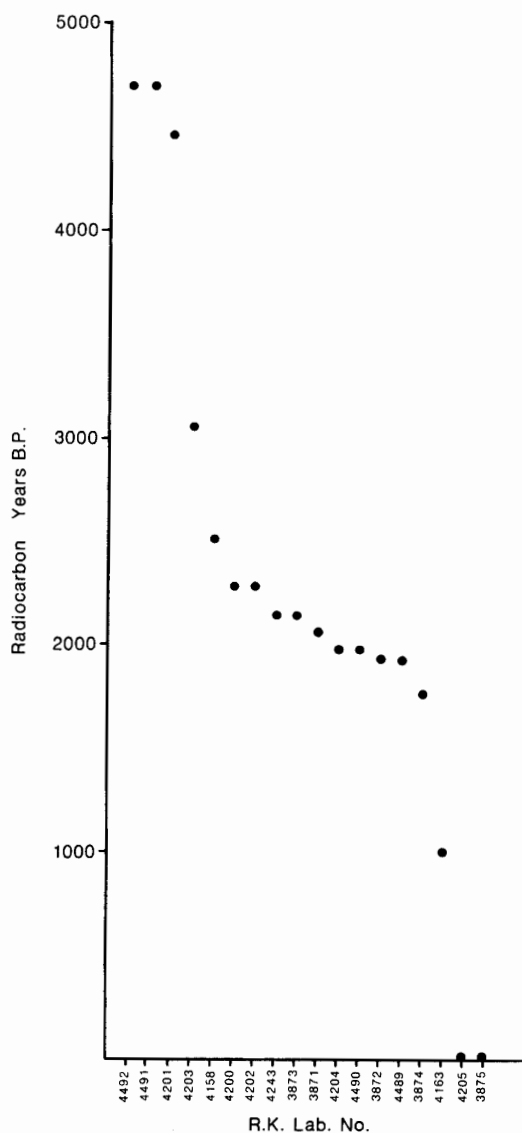
The Pre-Upano Phase, which is said to precede mound construction (Porras Garcés, 1987a, p. 300), is

characterized by a light grey plainware pottery with coarse temper. It also has mamiform tripod pots and vessels with short, narrow necks having spirals formed in relief. There is also a narrow-mouthed Pre-Upano vessel type with a slightly arched shoulder and no neck (Porrás Garcés, 1987a, p. 297; 1987b, p. 223).

This is not the place for a detailed discussion of Porrás' work on the Upano and Pre-Upano phases. However, because of the extremely early dates of the Pre-Upano Phase and the important question of initial occupation in the Amazon area, a question also posed by the Pastaza Phase dating, it is appropriate to comment briefly on the Upano chronology.

The first point concerns the Upano phases I, II, and III and their dating. Graph 1, representing the 18 radiocarbon dates, shows a tight clustering of 11 dates in the 330 B.C.-A.D. 170 range. There are two isolated B.C. dates, at 560 and 1100, and one isolated A.D.

Graph 1. Upano Tradition Radiocarbon Dates (Porrás, 1987a)⁴



date at 940 (two other dates are modern). Until further dates with precise and detailed associational documentation become available, the Upano component of the Sangay Complex can be most securely assigned an age range between about 400 B.C. and A.D. 250, on the basis of the tight clustering of the majority of the radiocarbon dates. The isolated dates, therefore, should not be considered reliable at this time.

With respect to Harner's two dates, noted above, it is obvious that they cannot be readily accommodated within the Upano chronology as determined from investigations at the Sangay Complex. Harner's early date (609 B.C.) is associated with earth mounds and ridges, but apparently not with Red-banded Incised pottery as might have been expected. His late date (A.D. 1041) is associated with Red-banded Incised pottery, but appears to be much too late and not in the context of the earthen mounds. It seems clear that further field investigations at Harner's sites will be needed if these dating problems are to be resolved.

In regard to the three Pre-Upano dates, two of 2750 B.C. and one of 2520 B.C., it is of considerable concern that there is no specific documentation by Porrás of the cultural materials associated with these dates. Exactly what was found in the Pre-Upano deposits is left unstated. Each of the dates derives from a different location, and at least one seems to be associated with mound construction (Porrás Garcés, 1987a, pp. 83, 89). The published profiles are difficult to interpret, and it is unclear if there is stratigraphic evidence for a cultural hiatus of at least 2120 years until the Upano occupation began (or a hiatus of 1420 years if one accepts the 1100 B.C. beginning date suggested by Porrás). Indeed, while all must acknowledge the value of Porrás' pioneering archaeological research in the tropical lowlands of eastern Ecuador, the true significance of his findings remains to be assessed. It is this author's feeling that more documentation is needed before the Pre-Upano dates can be accepted.

GEOGRAPHICAL LOCATION OF PUMPUENTSA

The Pumpuentsa archaeological site is located in southeastern Ecuador in territory presently occupied by the Achuara Jivaro (Harner, 1972; Kelekna, 1981). Small-scale maps prepared by the Instituto Geográfico Militar of Ecuador show an Indian settlement with the name Jibaro Achianiati (fig. 1). This settlement, which consisted of approximately one dozen families at the time of the fieldwork is locally known as Pumpuentsa. It is a short distance east of the Macuma River. The Pumpuentsa archaeological site is situated approximately 2 km. west of the settlement but still east of the Macuma River. A resident of the settlement led this author to the archaeological location after several people had been questioned on their knowledge of places that contained old pottery.

In every respect, the region has the characteristics of a tropical rain forest. The climate is warm, with plentiful rainfall, and the vegetation is very luxuriant. There is a great diversity of plants and trees in the closed-canopy forest. Elevation above sea level is approximately 350 m. The tropical nature of the area is also manifest in the subsistence practices of the Achuara. Their agriculture is of the long-fallow swidden type, which provides for a diet based principally

on manioc (and manioc beer), plantain, sweet potatoes, and peanuts. Hunting and fishing are both important, providing the necessary dietary protein. The Achuara settlement pattern is seminomadic, with dispersed houses forming neighborhood clusters (Harner, 1972; Kelekna, 1981). Travel in the area is principally by overland trails, though canoes are also used.

The Pumpuentsa site, situated just off the main trail to Taisha, the location of a missionary and military outpost, is slightly elevated. The archaeological deposits may be partly responsible for this effect. Rivers and streams are not in the immediate vicinity of the site, though neither is distant. As the site surface was covered by humus and vegetation of the forest, its dimensions could not be determined. However, a small path crossing the site shows pottery sherds scattered for a distance of approximately 200 m. It is possible, then, that the site covers a fairly large area.

THE PUMPUENTSA EXCAVATION

Because of the very brief nature of the reconnaissance, which was primarily oriented toward gaining insight into Achuara settlement, only a single 75 × 75 cm. test pit was excavated. The intention was mainly to document the depth of the deposits and their potential for future excavation, besides obtaining a sample of the archaeological materials. The lack of transport, workers, and tools made any thought of a more ambitious testing program out of the question.

The excavation was undertaken with a hand trowel in 10 cm. levels. The exception was level 8, the deepest, which was 30 cm. thick. The test pit reached a depth of one meter, considerably deeper than anticipated. Archaeological deposits were encountered in all levels, and these consisted primarily of pottery

sherds. The density of sherds was greatest in levels 3 and 4. In levels 6 and 7, sherd density diminished substantially, and by level 8 it was very low. Although culturally sterile soil was not reached, it is doubtful that the archaeological deposits extended much deeper.

The soil matrix consisted of a very dark silt loam (Munsell 10YR 3/3 dry—dark brown). Levels 4 through 8 contained four or five bright red horizontal bands about 1 cm. thick. These bands, crossing the entire excavation unit, appeared to be the result of oxidation from fire, though such an origin was not determined with certainty. Features such as hearths, pits, or floors were not observed or distinguished. However, there is no doubt that the archaeological deposits are primary. Many of the pottery sherds were quite large, and it was possible to reconstruct two vessels (figs. 8, 32). The sherds from these vessels were lying flat, as if they had been crushed flat.

In consideration of the red bands and reconstructable vessels, it is possible that repeated house burnings had occurred at the test pit location. If this interpretation is correct, then there would appear to have been some similarities with ethnographically documented Jivaroan warfare practices of house burning (Harner, 1972, p. 186).

All of the material recovered in the test pit is listed by level in Table 1. In classifying the pottery, the diagnostic type, Pastaza Incised and Punctate, was taken from Porras (1975). The categories Zoned Hachure and Simple Incised Line, however, are new with this presentation. The category P. Red is from Porras (1975, pp. 112-114). These sherds have no decoration other than red slip, which the other decorated types at Pumpuentsa do not have. Of interest is Porras' observation that P. Red sherds were very eroded at the Huasaga site (Porras Garcés, 1975, p. 114), which was also true of the Pumpuentsa sherds (along with

TABLE 1

Cultural Material Recovered from the Test Trench at the Pumpuentsa Archaeological Site

Level	Depth below surface	Total sherds	P. Incised and Punctate	Zoned Hachure	Simple Incised Line	P. Red	Other decorated sherds	Grind stones	Flakes	Unmodified stone	Charcoal samples
1	0-10 cm.	155	5	-	-	-	-	-	-	-	-
2	10-20 cm.	146	2	6	-	4	-	-	-	-	-
3	20-30 cm.	246	6	2	1	2	-	1	-	4	-
4	30-40 cm.	268	9	11	3	1	6	1	1	3	1
5	40-50 cm.	158	5	3	-	-	1	-	-	-	1
6	50-60 cm.	107	-	5	1	-	-	-	-	-	-
7	60-70 cm.	68	-	3	-	-	-	1	-	2	-
8	70-100 cm.	44	-	2	-	-	-	-	-	1	-
TOTALS		1,192	27	32	5	7	7	3	1	10	2

many of the plainware sherds). The category Other Decorated Sherds includes mostly sherds too small for classification, though a single example with incised circles (fig. 22) was placed in this category. The remaining sherds are all plainware. Various types of implements for grinding are included in the Grind Stone category (figs. 18, 26, 34). A flake (fig. 27) and unmodified stones are listed in their respective categories.

No remains of carbonized seed or animal bone were found in the excavation. After the analysis in 1976, the complete collection of artifacts was deposited in the Museum of the Banco Central del Ecuador, Quito.

RADIOCARBON DATING

Two samples of charcoal were recovered, and both were dated. One of the samples (Beta 22015) was combined from levels 4 and 5, while the other comes exclusively from level 5 (DIC 798). Both samples consisted of dispersed charcoal, though DIC 798 was composed principally of large chunks. The DIC sample was processed in 1977,⁵ while the Beta sample was processed in 1987. The Beta laboratory was given the option of using AMS technology for processing due to the small size (1.8 gm.) of the sample. However, the sample was determined to be of sufficient quality so that normal processing was considered reliable, although the counting time was extended to four times normal. The laboratory was also instructed to take special care in the removal of humic acids and other possible contaminants before processing the Beta sample.

The dating analyses were based on a half-life of 5568 years, and calibrated using the tables in Klein and others (1982) at the 95% confidence level. Beta 22015 provided an age of 1910 ± 110 B.P. A C^{12}/C^{13} correction of -20.9 resulted in an adjusted age of 1970 ± 110, for a calibrated range of 180 B.C.-A.D. 230. Sample DIC 798 weighed 10.0 gm., and gave an age of 1210 ± 65 B.P., with a calibrated range of A.D. 630-905.

The ages of both samples were expected to be approximately the same. The fact that there is a difference of approximately 700 years suggests that there may be a problem with one of the samples. Despite this difficulty, however, the dates clearly suggest a time frame in the first millennium A.D., and possibly extending into the first two centuries B.C. for the Pumpuentsa materials.

THE HUASAGA ARCHAEOLOGICAL SITE

In order to provide a wider perspective on the Pastaza Phase, as well as to provide a basis for comparison, I shall present a brief description of the Huasaga site excavated by Porras in 1969. Mention will also be made of another site pertaining to the Pastaza Phase, which is also located on the Huasaga River, but across the frontier in Peru.

The Huasaga site is located approximately 20 km. east of Pumpuentsa (fig. 1). It is situated on a terrace above the west bank of the Huasaga River. In 1969, ten years before the excavation, the place was occupied by a Jivaro settlement, which was later aban-

doned due to tribal warfare. There is a small landing strip, "almost abandoned," running behind the site. In his map of the site, Porras (1975, p. 81) shows two structures with the designation "Military Base."

The Huasaga archaeological site measures 300 × 50 m. In the 10 test pits excavated, Porras indicates that the depth of deposit in cut 1 was 70 cm., in 2 was 40 cm., in 3-8 averaged 40-50 cm., and in 10 was a meter; the depth of 9 is not specified here (Porras Garcés, 1975, p. 80).⁶ Cut 10 is said to have been placed on a small artificial hill, 5 × 2 × 0.8 m. high (Porras Garcés, 1975, p. 80); the size of the test pits is not specified. A profile of cut 10 (the deepest) depicts seven soil layers, including a layer of decomposing vegetation (Porras Garcés, 1975, p. 79). Layers 2 through 6 contained sherds, with layer 4 having the most abundant remains (Porras does not provide numerical designations for his soil layers). Since layers 2 through 5 are described only as consisting of "black soil" (the description of layer 5 is "less black soil"), it is uncertain how the layer distinctions were made. Excavation was conducted in 10 cm. arbitrary levels (Porras Garcés, 1975, p. 78). There is no indication of whether the deposits were primary or secondary.

The excavation and surface collection at the site yielded 5,800 sherds. Eight vessel forms were recognized, and eleven ceramic types were defined. Of the ceramic types, two are plainware, and nine are decorated. The decorated sherds made up 31% of the total; and one type, P. Incised and Punctate, comprised 52% of the decorated sherds or 16% of the total number. The names of decorated ceramic types, which indicate something of the manner of decoration, are shown in Table 2. Porras (1975) provides descriptions of these types and the plainware types, including information on temper, vessel thickness, rim and vessel form, etc.

TABLE 2

Decorated Pottery Types from Huasaga

Decorated Pottery Type	% of Total Sherds
Pastaza White on Red	0.34
Pastaza Corrugated	2.84
Pastaza Fingernail Decorated	2.24
Pastaza Excised	0.56
Pastaza False Corrugated	0.05
Pastaza Incised and Punctate	15.94
Pastaza Incised and Retouched	0.75
Pastaza Red	4.41
Pastaza Red Incised	1.96

In two separate sheets accompanying the 1975 publication, Porras provided the results of four radiocarbon assays and a summary of the characteristics of the four Pastaza Phase periods he distinguished at that time. Apparently the results of the dating analyses (Table 3) were received while the article was in press. The summaries for the four periods are as follows:

Period A: 2000-1000 B.C.

Tienen su máxima expansión los incisos punteados y hachurados libres o zonales, lo

TABLE 3
Radiocarbon Determinations from Huasaga

Laboratory number	Provenience	Radiocarbon years B.P.	Calibrated date*
ISGS-384	Cut 1, 10-20 cm.	600 ± 65	A.D. 1270-1410
I-9157	Cut 6, 10-20 cm.	819 ± 90	A.D. 1035-1330
I-9159	Cut 10, 60-70 cm.	4,000 ± 100	2880-2305 B.C.
ISGS-385	Cut 10, 70-80 cm.	4,155 ± 75	2940-2560 B.C.

*Calibration from Klein and others (1982), 95% confidence level.

mismo que el rojo pulido y el inciso retocado. Este período guarda estrechas relaciones con Valdivia C y D de Evans y Meggers y el V y VI de Betsy Hill [1975]. Vasos semiesféricos de boca ancha.

Period B: 1000 B.C. - A.D. 200

Hacen acto de presencia el rojo pulido, el rojo inciso, el exciso y el falso corrugado; a su final, el blanco sobre rojo. Vasos semiésféricos de boca ancha.

Period C: A.D. 200-800

Continúa el blanco sobre rojo y el rojo inciso; comienza el estampado de uñas asociado al corrugado. Vasos esféricos de cuello estrecho.

Period D: A.D. 800-1600

No hay el inciso retocado ni el rojo inciso; escasea el inciso y punteado, falta el exciso y abunda el estampado de uñas; asoma en cambio una cerámica que tiene estrechas relaciones con la actual cerámica jibara o shuara; pasta de caolín con escaso desgrasante, rojo de origen vegetal con huellas de superficie barnizada o ahumada y cocción escasamente oxidante. Siguen los vasos esféricos de cuello estrecho, con o sin bordes evertidos.

Porras' ceramic seriation (1975, p. 124) indicates that P. White on Red is confined to the upper half, P. False Corrugated is confined to the lower part, P. Fingernail Decorated is confined of the lower half, and the other decorated types decline in frequency. Specifically with respect to P. Incised and Punctate, Porrás states that it shows only a "*Ligera tendencia a disminuir de frecuencia a través de toda la seriación*" (Porrás Garcés, 1975, pp. 110-112, 124), indicating that it is fairly common throughout the sequence. His table of sherd frequencies, listed by excavation level, also shows that this type is common in all but cut 1 (Porrás Garcés, 1975, fig. 23).

The validity of the Huasaga seriation as a chronological tool cannot be fully evaluated until information on more sites is available. However, it should be noted that the three sherd types that are restricted to only parts of the sequence have extremely low frequencies, which would seem to make their placement in the seriation unreliable. Furthermore, there does

not appear to be any correspondence between their depth of occurrence in the excavation pits and their location in the seriation (see Porrás Garcés, 1975, fig. 23). Porrás also indicates that his results in the 70-80 and 80-90 cm. levels of cut 10 were aberrant, and therefore they were eliminated altogether from the analysis (Porrás Garcés, 1975, p. 122). The reason for this action is not explained, which gives the unfortunate impression of adjusting the data to fit preconceived ideas. Another point regarding the seriation concerns Porrás' indication in his later publication (Porrás Garcés, 1980, p. 117) that two types of decoration, red slip and red zoned (presumably these types are the same as P. Red and P. Red Incised of the 1975 publication), appear only in the late part of the Pastaza Phase. This assertion seems to contradict the seriation results, and the reason for the change is not explained. Similar discrepancies are also apparent in at least two of the types mentioned in his descriptions of the four periods. Finally, Porrás' reference in his Period A description to "*Hachurados libres o zonales*" is unclear since this terminology does not seem to be used anywhere in the 1975 article.

In his 1980 summary of the Pastaza Phase, Porrás does not mention his period designations, and restricts the chronological range to between 2000 and 1000 B.C. No mention is made of either the later or earlier radiocarbon dates. He also states that "*La cerámica de la Fase Pastaza tiene una fuerte individualidad que la separa netamente de Valdivia*" (Porrás Garcés, 1980, p. 117). Porrás further notes that the resemblance in vessel form and decoration is greater between Yasuni and Late Tutishcainyo, which are separated by a straight line distance of 850 km., than between Yasuni and Pastaza, separated by only 25 km. As a result, Porrás (1980, p. 117) believes that the Pastaza Phase belongs to the Early Formative, and that it is presently the oldest known in the Amazon Basin. The phase may have its origin in Puerto Hormiga, Colombia, or the Mayal on the coast of Venezuela, according to Porrás (1980, p. 116), who refers to Evans and Meggers' work on the Zoned Hachure horizon.⁷

The Huasaga Archaeological Site in Peru

Porrás (1975, pp. 132-133) also calls attention to a third Pastaza Phase site, discovered by the anthropologists W. DeBoer, E. Ross, J. Ross, and M. Veale of Queens College of the City University of New York. This site is situated on the Huasaga River on the Peruvian side of the frontier. It is known only from a small surface collection of pottery, designated Kamihun by its discoverers. Illustrations (Porrás Garcés,

1975, láms. 10, 11) clearly indicate that it has the same P. Incised and Punctate pottery. Other details concerning the site are not known.

THE PUMPUENTSA POTTERY

The number of sherds from the Pumpuentsa site, a total of 1192, is insufficient for a rigorous and formal analysis comparable to that of Porras. Decorated sherds, in fact, constitute only 6.5% of the collection. For this reason, the discussion here will be limited to a few general comments about the collection and how it compares to that of the Huasaga site. The illustrations (figs. 2-17, 19-25, 28-33, 35-37) provide a fairly good documentation of what was found in terms of vessel form, size, and decoration.⁸ Temper was not noted during analysis due to uncertainties in identifying the inclusions; perhaps it will be possible to undertake a thin-section analysis sometime in the future.

The diagnostic type, P. Incised and Punctate, represents a very distinct style, with its zones of punctation intermixed with incision in a variety of rectilinear and curvilinear designs (figs. 2-3, 9, 13-14, 19-20, 23, 28-30). What is so striking is the very high quality of the craftsmanship; some of the punctate zones remind one of fine checkering on a sporting firearm. Vessel form of this ceramic type is limited to bowls. The frequency of P. Incised and Punctate sherds at the Pumpuentsa site is low, only 2.2% of the total compared to 16% at Huasaga. Among the Pumpuentsa examples is a large sherd with an incised and very stylized zoomorphic figure; perhaps it is a monkey or bat (fig. 13). This type of decoration is not known from either Huasaga site (Ecuador or Peru). As previously mentioned, some of the P. Incised and Punctate sherds from the Huasaga site in Ecuador have evidence of white or red painting inside the incisions, as do some from the Huasaga site in Peru. Painting, however, was not observed on the Pumpuentsa sherds.

The stratigraphic placement of the P. Incised and Punctate sherds is interesting in that they do not occur below level 5 of the site's 8 levels. This evidence suggests the possibility that either the P. Incised and Punctate sherds are not a characteristic of the earliest part of the Pastaza Phase, or that the Pumpuentsa site has an earlier component. Unfortunately, however, the decorated sherd counts are so low in the Pumpuentsa levels that more excavations will have to be undertaken to determine whether there is in fact a stratigraphic separation of sherd types. In contrast, the Huasaga site (Ecuador) did not show any form of stratigraphic separation with the P. Incised and Punctate sherds.

It is the decorative ceramic type, Zoned Hachure, that occurs in the lower levels of the Pumpuentsa site, and it is common in the upper levels as well. Vessel forms include both bowls and pots of different sizes. Decoration is produced by the alternation of narrow bands of incised areas with smooth areas. The Zoned Hachure style has very clear parallels to similar styles in other areas of the Amazon Basin, as suggested by Meggers and Evan's (1961) earliest horizon style of the same name. Examples of this style at the Pumpuentsa site appear in figs. 12, 16-17, 24, 32-33, 35-37. Porras (1975) does not illustrate a similar decorative style; apparently it was not found at either of the Huasaga

sites in Peru or Ecuador. The Zoned Hachure pottery does not have slip or painting. The vessel reconstructed in fig. 32 is interesting for having had on its interior base an elevated pedestal or similar appendage, which is now missing. The place of fracture is clearly visible as a solid and slightly raised circular area.

The Simple Incised Line pottery is represented by only a few examples at the Pumpuentsa site. The best is that illustrated in fig. 8, which is a small reconstructed pot. The exterior of the pot has no slip, though the interior appears to be coated with a black smudge. Interior smudge is also occasionally found on the other ceramic types at Pumpuentsa, though it is not mentioned for the two Huasaga sites. The same small pot also has paired perforations on opposite sides near the rim, indicating that a cord was probably attached for either carrying or hanging the vessel. Porras' illustrations do not show any examples of Simple Incised Line pottery (Porras Garcés, 1975).

Other types of decorated pottery described by Porras for the Huasaga site (Ecuador) are not evident at the Pumpuentsa site. These include such distinctive types as P. Corrugated, P. Fingernail Decorated, P. Excised, P. White on Red, and several others.

To conclude this discussion of Pumpuentsa pottery, it may be noted that, in contrast to the Pastaza Phase, the use of incision and punctation as decorative techniques is absent in the known historic and present day Achuara and Jivaro pottery (Karsten, 1935, pp. 99-102, pls. 18, 19). Porras' observation that there is a relation between his Period D and the local indigenous pottery cannot be documented with the pottery from Pumpuentsa.

LITHIC ARTIFACTS AT THE PUMPUENTSA SITE

Among the lithic remains at the Pumpuentsa site are three grind stones of various types and a single flake. The grind stone of fig. 18 has an appearance very similar to a mano, while the implement of fig. 26 most resembles a smoothing or polishing stone. The implement of fig. 34 is most like a pestle, showing signs of wear at both ends. The flake in fig. 27 appears to show signs of use along its left edge. Except for the manolike stone, the Huasaga site produced similar artifacts (Porras Garcés, 1975, pp. 118-121, figs. 21-22). Unlike the Pumpuentsa site, however, the Huasaga site also produced a number of ground stone axes (Porras Garcés, 1975, p. 117, fig. 20).

The other lithic material at the Pumpuentsa site consisted only of unworked small pieces of stone with no signs of use. The type of stone was not identified for any of the lithic material.

CHRONOLOGY OF THE PASTAZA PHASE

At the outset, it should be stated that presently available information does not permit the formulation of a conclusive answer to the question of the age of the Pastaza Phase. The extremely early Huasaga dates of Porras are clearly inconsistent with the dates from Pumpuentsa. Porras' interpretation, though reasonable for the time at which it was made, may still prove to be correct. However, now that additional information is available, it is imperative that further

refinement of the Pastaza Phase chronology be attempted. Especially given the claim that the Pastaza Phase pottery ranks among the earliest in South America, the basis for its dating is a point of some significance.

One problem with Porras' dates is the extremely long time covered by his sequence, 3575-4290 years, assuming that all of the Huasaga dates are correct for the Pastaza Phase. The diagnostic type, P. Incised and Punctate, occurs in fairly high frequencies even in the level from which his A.D. 1035-1330 date was derived (15 sherds for 11.62% of the total pottery in the 10-20 cm. level of cut 6). Though it is nearly absent in cut 1, where the other late radiocarbon date was recovered, P. Incised and Punctate is relatively common in nearly all of the other excavation units and levels. Thus, Porras' investigations, taken at face value, suggest that the intricate design system of P. Incised and Punctate endured virtually unchanged for approximately 4000 years. This conclusion is clearly out of line with what is known of the duration of complex ceramic styles in prehistoric cultures from other areas of the world; 1000-2000 years is about the maximum as far as this author is aware.

Even if Porras' most recent dates are discounted for the Pastaza Phase, the same argument can be made in comparing his early dates with the two dates from the Pumpuentsa site. Thus, if the Pumpuentsa dates represent the late part of the phase, the P. Incised and Punctate style would encompass at least a 2000 year period. This also appears an improbable duration.

Were it not for the Pumpuentsa dates and the unavoidable problem of stylistic longevity, it would be easy to explain Porras' late dates as simply belonging to a later component at the Huasaga site, the P. Incised and Punctate sherds having somehow become mixed with this component. This would be a fairly rational explanation were it not for two facts: first, there is no stratigraphic justification for such an interpretation; and second, the ceramic seriation tends to be relatively homogeneous; there are very few discontinuities. Unless the Huasaga sediments are entirely redeposited and secondary, a 4000 year long cultural sequence should have some detectable evidence of changes in sediment morphologies correlating with the age of the deposits. There should also be some evidence for major ceramic changes through time. Both of these types of evidence appear to be lacking at the Huasaga site.

Another argument suggesting a somewhat later dating for the Pastaza Phase concerns the fact that the only three sites presently known in the entire region belong to this phase. Unless the Pastaza Phase sites just happen to be much more highly visible archaeologically than later sites, perhaps due to a more nucleated and permanent settlement pattern, they would be expected to be rarer, possibly deeply buried, or otherwise more difficult to find than the later sites. Since this seems not to be the case, it may be that these sites are actually much later than Porras' early radiocarbon dates imply.

As to the reason for the ceramic differences between the Pumpuentsa and Huasaga sites, slightly different time periods could be represented by the two sites with Huasaga being later. This interpretation would help explain the absence of Zoned Hachure and

Simple Incised Line pottery at Huasaga. Also, it makes sense in terms of Porras' observation that his latest period incorporates pottery styles that can be related to the ethnographic Jivaro pottery, which does not seem to be the case for any of the Pumpuentsa pottery.

Finally, mention must be made of the charcoal samples from which Porras derived his early dates. They are from two adjacent levels in cut 10, and they were processed by different radiocarbon laboratories with very similar results (in fact, the deeper sample is just slightly older than the stratigraphically superior sample, which is exactly what would be expected). Thus, on the face of it, the early dates would appear to have the kind of consistency and replicability that should inspire confidence. Yet, in view of the foregoing discussion, they seem to go against all logic and other evidence.

The process responsible for the dating error, if that is what it is, might be the incorporation of older charcoal from natural forest fires into the archaeological deposits. Colinvaux (1989, pp. 107-108) not only indicates that there have been recurrent episodes of such fires in the Amazon area, but also has evidence for a prolonged drought in the Ecuadorian Amazon about 4000 B.P. This, of course, is almost exactly the time indicated by the uncorrected early Pastaza radiocarbon dates (presumably Colinvaux is reporting uncorrected B.P. dates, though he does not so specify). This process may also provide a simple and elegant explanation for the early Pre-Upano dates. Before any such explanation is accepted, however, further field investigations must be undertaken.

SETTLEMENT PATTERN OF THE PASTAZA PHASE

The two sites of the Pastaza Phase for which there is information on size, Pumpuentsa and Huasaga in Ecuador, extend for distances of 200 and 300 m. respectively (the Pumpuentsa measurement should be considered tentative). The archaeological deposits at both sites are deep, reaching a depth of one meter. While much more archaeological work will be necessary to determine how the houses were constructed, how many houses were present at any one time, and other details of community organization, it may be noted that the archaeological evidence suggests a settlement pattern distinct from what is known from the ethnographically documented Jivaroan settlement. Consisting of isolated houses and frequent location changes, the ethnographic pattern has been reported since the earliest Spanish contact in 1549 (Jiménez de la Espada in Harner, 1972, p. 17).⁹ It is unlikely that this type of settlement pattern could have produced sites with the characteristics of Pumpuentsa and Huasaga, which may have been loci of nucleated villages. However, it is possible that what is being observed archaeologically is only the continual reoccupation of preferred settlement loci after brief absences.

CONCLUSION

Investigations at the Pumpuentsa site have provided additional details on the Pastaza Phase in southeastern lowland Ecuador. While the archaeological materials

recovered from this site are too limited to allow detailed analyses, it was possible to add new information to Porras' pioneering study, particularly as concerns pottery types and dating. Because of discrepancies in the dating of the Huasaga and Pumpuentsa sites, there is a need for considerable caution before excepting the Early Formative time frame proposed by Porras. The issue can be resolved only with further detailed field work, and in this respect the Pumpuentsa site offers considerable potential.

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24 October 1983
final revision 1 June 1989

NOTES

¹The author spent 5 days in Pumpuentsa, from August 5 through 9, 1976. Olivia D. Athens and Alex Hinds accompanied the author. Dr. Pita Kelekna, social anthropologist, was already residing in Pumpuentsa. This article is based on a report originally submitted in 1976 to the Banco Central del Ecuador in Quito (Athens, 1985).

²In a brief description in his later book, Porras names the Inciso Retocado pottery as the diagnostic type of the Pastaza Phase, and describes it as consisting of "*la conjugación dentro de la incisión con el punteado que cuelga de la línea madre a manera de banderola*" (Porras Garcés, 1980, p. 115). The reason for this change is not explained. Porras' earlier report describes a pottery type, P. Inciso Retocado, but it makes up less than 1% of his pottery collection. His description (Porras Garcés, 1975, p. 112 and fig. 18) suggests that this pottery type is very similar to P. Incised and Punctate.

³Braun provides a detailed discussion of the Cerro Narrfo materials, including a chronological scheme. He considers the Group X ceramics, which includes the Red-banded Incised type, to date between 1500 and 1300 B.C., based on comparisons with coastal assemblages (1982, pp. 46, 49-50, table 3). There is a single radiocarbon date of 1978 B.C. (uncorrected) from the basal Cerro Narrfo layers (Braun, 1982, p. 41). However, as the Group X pottery is derived from the upper layers, there is no reason to believe that these pottery types must necessarily have such early B.C. dates. Indeed, Porras' work at the Sangay Complex now suggests that the Group X pottery, the Red-banded Incised pottery in particular, probably dates between 400 B.C. and A.D. 250.

⁴Graphical distribution of radiocarbon dates for the Upano Tradition as reported by Porras (1987a, p. 299). The dates are uncalibrated and based on a half life of 5,568 years. Standard deviations range between 65 and 115 years except for RK-4243, which is 215 years. The dates, processed at Rigasaku Kenkyushu in Japan, were all obtained on vegetal charcoal.

⁵The laboratory processing of sample DIC-798 involved the following: "Sample noted as 'wood charcoal, very dirty with roots, stones, sand, etc.' It was first treated for removal of humic acids with 2N NaOH at 100° C. for 30 minutes, decanted, filtered, washed, and picked for rootlets under 30×. Free carbonates removed next with 2N HCl at room temperature for ca. 48 hrs. Sample again decanted, sieved (125μ), washed and again picked for rootlets under 30×. There was approximately 10 g. of sample after pre-treatment and picking" (letter of August 12, 1983, from Irene Stehli, Director, Dicarb Radioisotope Co.).

⁶The listing of sherd frequencies by level (Porras Garcés, 1975, fig. 23) indicates that cut 8 was 20 cm. deep; cuts 1, 2, 3, 5, 6, and 7 were 30 cm. deep; cut 9 was 40 cm. deep; and cut 10 was 90 cm. deep (cut 4 is not listed).

⁷Porras does not provide citations to the relevant works of Meggers and Evans (Porras Garcés, 1980, p. 116). These should be Meggers and Evans (1961, pp. 375-378) and Evans and Meggers (1968, pp. 88-92).

⁸With respect to the illustrations, horizontal lines next to rim sherd profiles indicate vessel orientation when this is certain; otherwise proper orientation of the sherd is uncertain. Orifice diameters were not recorded at the time of analysis.

⁹Up de Graff (1923) provides the earliest detailed description of the Jivaro based on his exploration of the zone in the last decade of the nineteenth century. Harner (1972, pp. 12-40) has a summary of historic contacts with the Jivaro.

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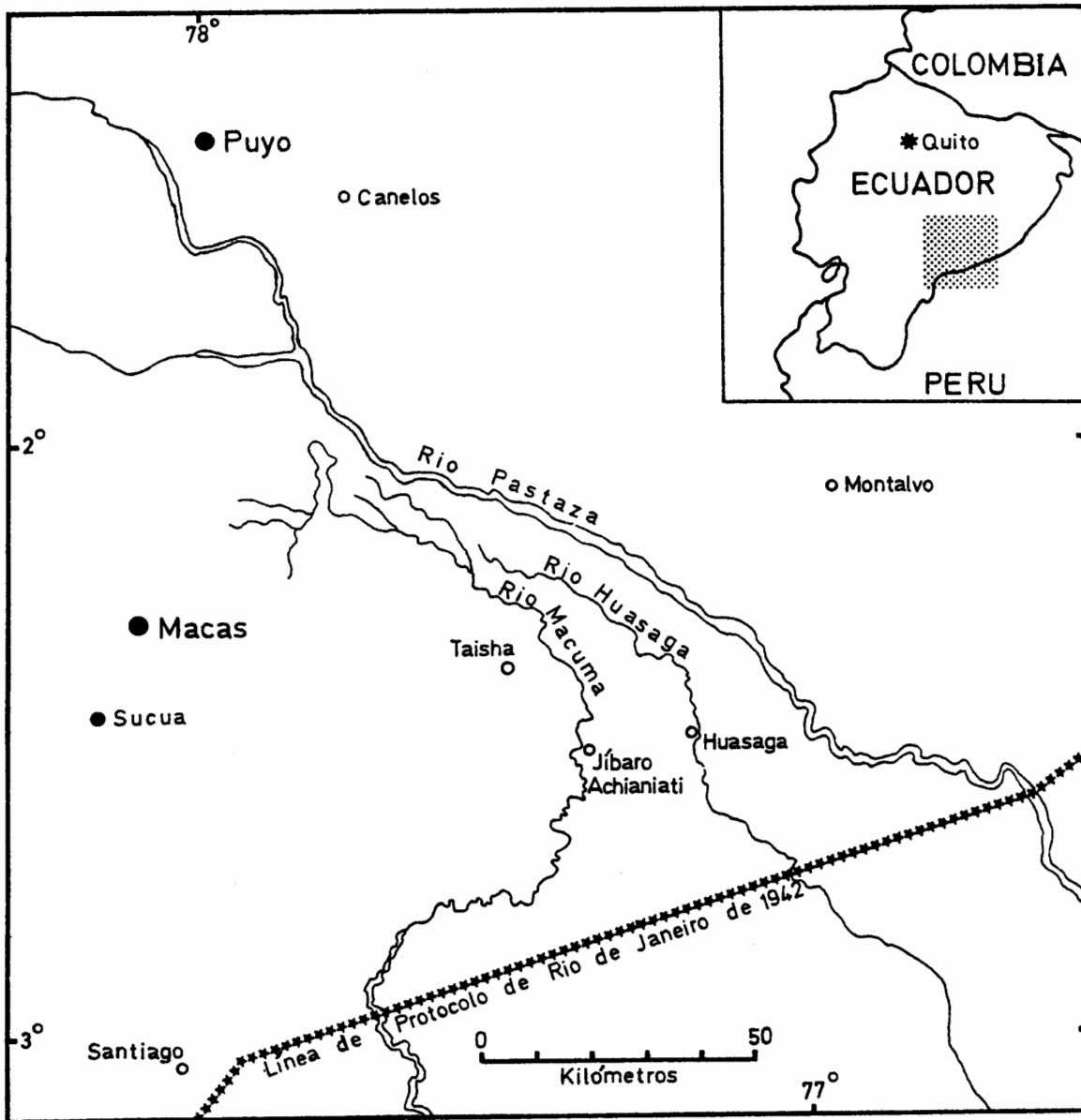
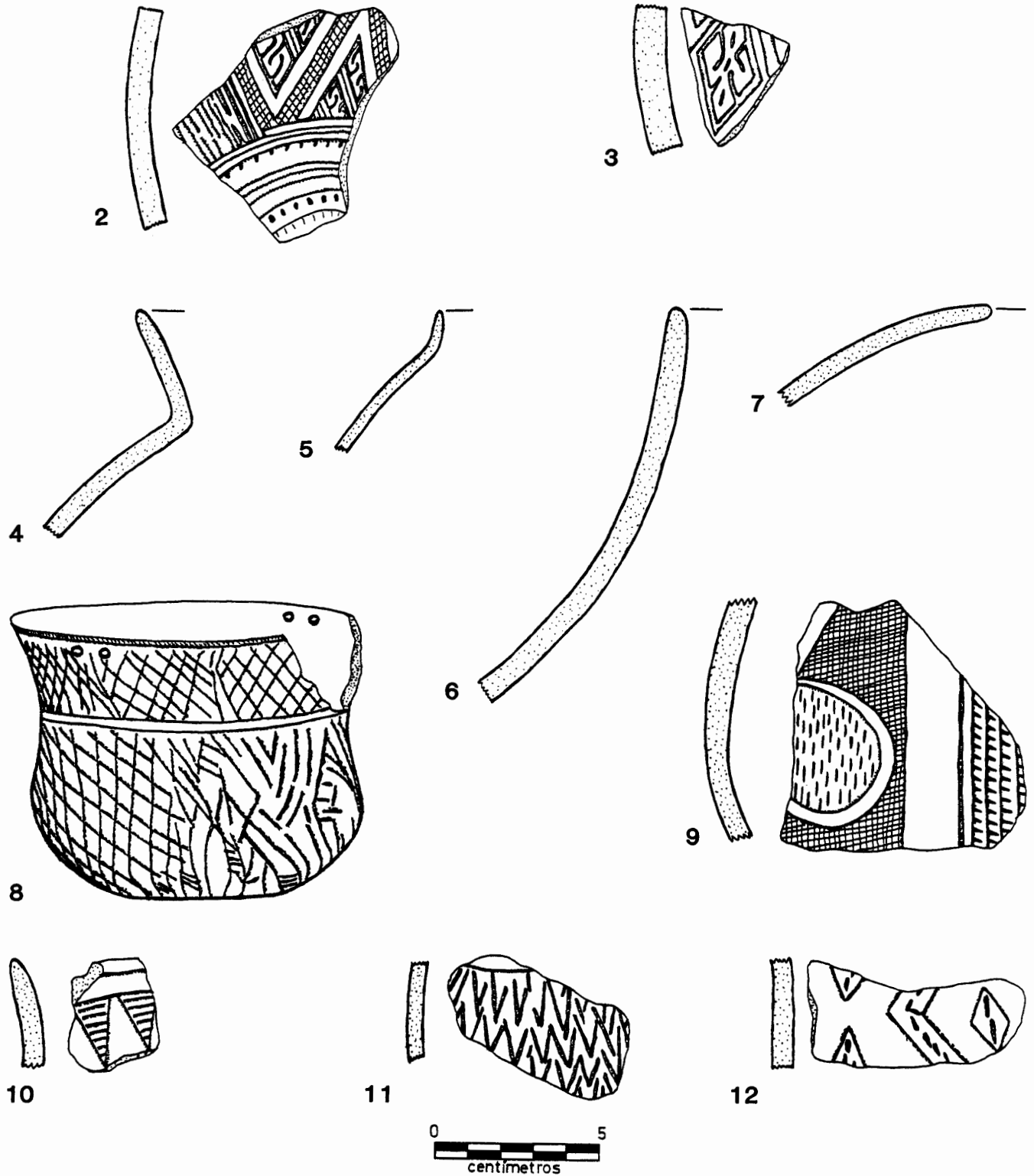
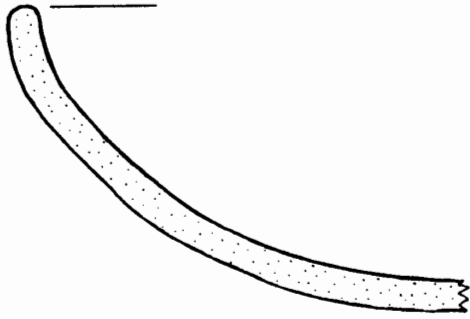


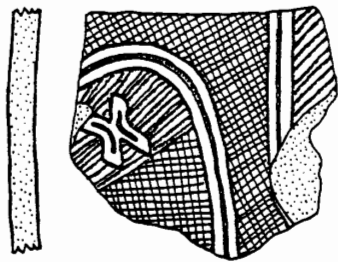
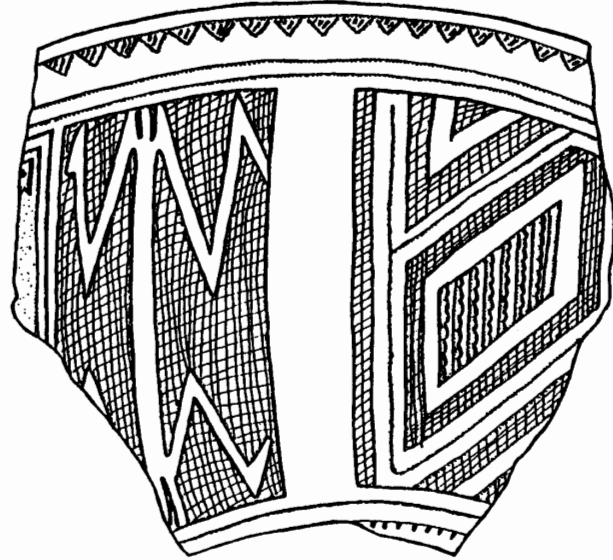
Fig. 1. Map of southeastern lowland Ecuador indicating the settlement of Jíbaro Achianiati, also known as Pumpuentasa. The archaeological site is located about 2 km. to the west, just east of the Macuma River.



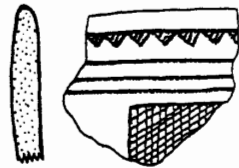
Pumpuenta levels 1 (figs. 2, 3) and 2 (figs. 4-12). **Fig. 2.** P. Incised and Punctate, interior smoothed. **Fig. 3.** P. Incised and Punctate, interior smudged and smoothed. **Figs. 4-7.** Rim profiles of undecorated vessels. **Fig. 8.** Reconstructed Simple Incised Line vessel, interior smudged; note paired perforations on opposite sides of the rim. **Fig. 9.** P. Incised and Punctate, interior smoothed. **Fig. 10.** Zoned Hachure, interior smudged and smoothed. **Fig. 11.** Simple Incised Line, interior smoothed. **Fig. 12.** Zoned Hachure(?), interior smoothed.



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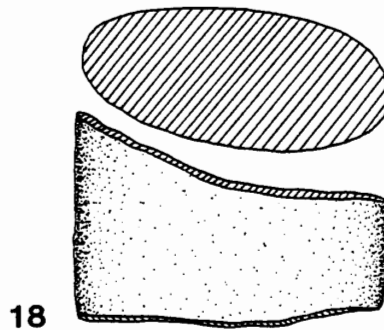
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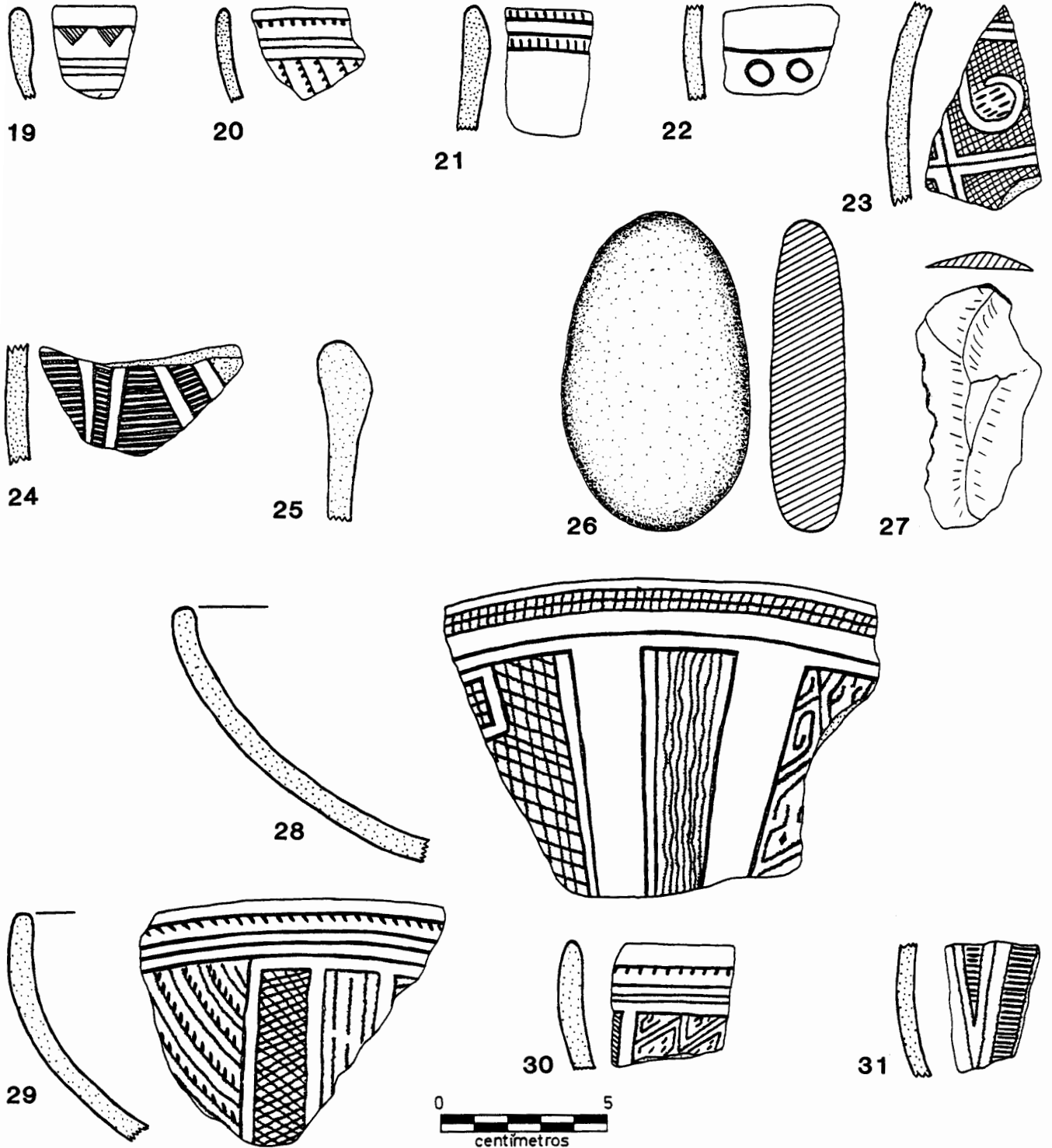


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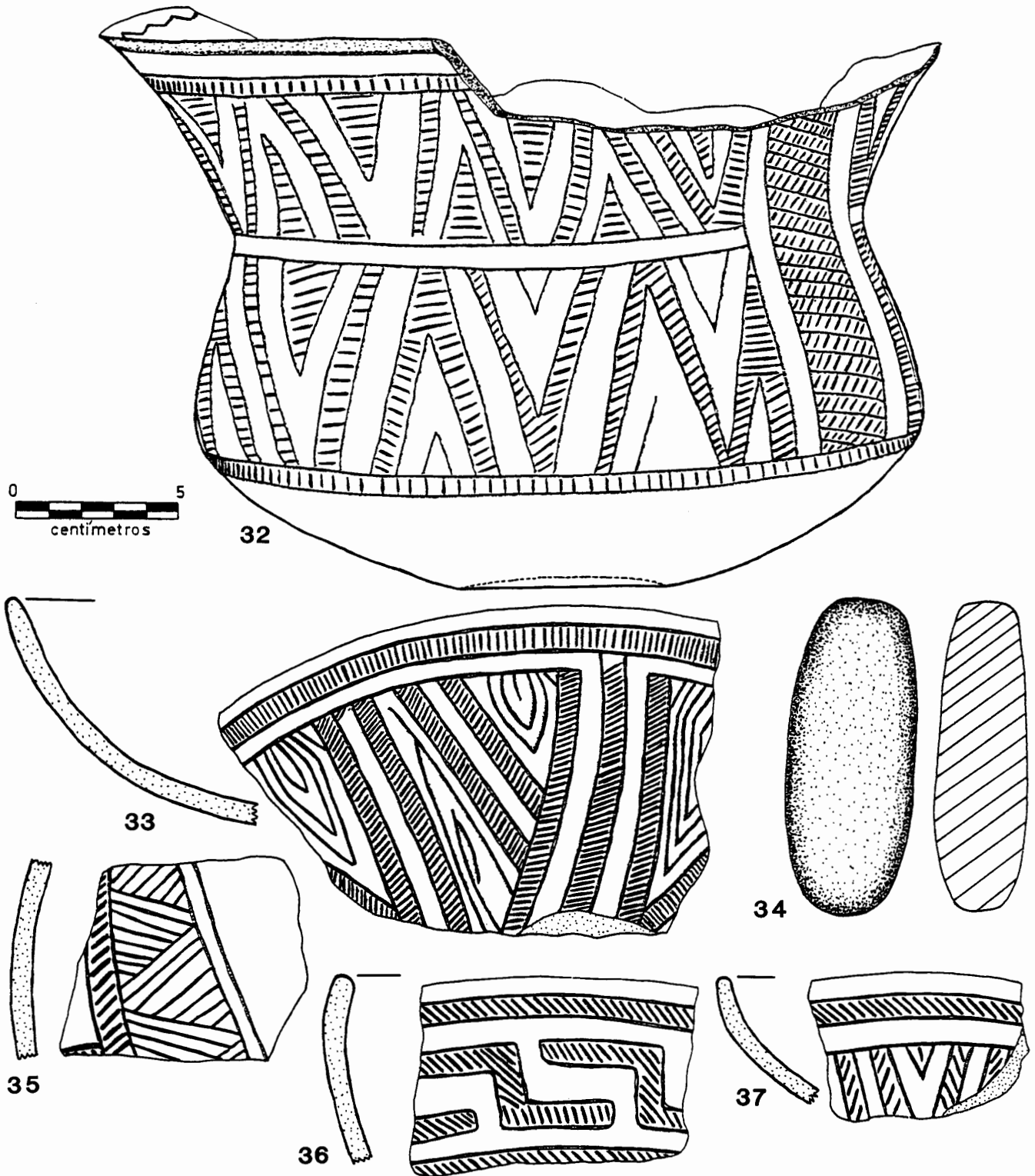


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Pumpuentsa, level 3. **Fig. 13.** P. Incised and Punctate, interior smoothed. **Figs. 14, 15.** P. Incised and Punctate, interior smoothed. **Fig. 16.** Zoned Hachure, interior smudged and smoothed. **Fig. 17.** Zoned Hachure, interior eroded. **Fig. 18.** Grind stone.



Pumpuenta levels 4 (figs. 19-27) and 5 (figs. 28-31). **Fig. 19, 20.** P. Incised and Punctate. **Fig. 21.** Sherd with incision on the interior border. **Fig. 22.** Sherd with circular incisions on the exterior. **Fig. 23.** P. Incised and Punctate, interior smoothed. **Fig. 24.** Zoned Hachure. **Fig. 25.** Rim profile of undecorated sherd. **Fig. 26.** Grind stone. **Fig. 27.** Flake with possible edge wear on left side. **Figs. 28, 30.** P. Incised and Punctate, interior smudged and smoothed. **Fig. 29.** P. Incised and Punctate, interior smoothed. **Fig. 31.** Zoned Hachure, interior smoothed.



Pumpuenta levels 6 (figs. 32-35) and 8 (figs. 36, 37). **Fig. 32.** Reconstructed Zoned Hachure vessel; the interior base may have had a pedestal or something similar, as indicated by a raised circular mark (not shown) where it had broken. **Fig. 33.** Zoned Hachure. **Fig. 34.** Grind stone with evidence of use at each end. **Fig. 35.** Zoned Hachure, interior smoothed. **Fig. 36.** Zoned Hachure, interior smudged and smoothed. **Fig. 37.** Zoned Hachure, interior smoothed.