VI. NOTES ON THE PAPALHUAPA SITE, GUATEMALA

John A. Graham and Robert F. Heizer

In January, 1965, we were in Guatemala with our colleague, Dr. Howel Williams of the University of California Department of Geology and Geophysics, Berkeley. Dr. Williams had earlier noted an extensive deposit of obsidian near the village of Papalhuapa and we were anxious to visit the area to learn whether there was evidence of prehistoric industrial workshops there. We were fortunate enough to have available from the Comisión Cartografía of the Government of Guatemala a U.S. weapons carrier, a driver, and the company of Ing. Jorge Godoy with whom to make the inspection visit. Our sojourn was very brief, largely because of the unsettled conditions in the area, and for this reason our information on the natural obsidian deposit, the extent of the aboriginal workshop areas, and of the nearby archaeological site called locally the "Templo de Montezuma," which lies within the present village of Papalhuapa, is very meager. We were able to make a rough map of the ruins (fig. 1) and to make a small collection of workshop materials which we here describe. It was our intention to return in 1966 to excavate the Papalhuapa site, but the political situation has become worse each year, and since there is at present no prospect of being able to carry out further work, we are placing our observations on record.*

The modern village of Papalhuapa (population of ca. 500 ladinos) lies off the main road leading from Jutiapa to Chiquimula. One turns off to the south at Agua Blanca and follows what can barely be described as a road, passable only to four-wheel-drive vehicles, and proceeds for about 7 km. to the village (maps 1 and 2).

The site was first described by Azurdia (1927) who visited the ruins in 1926, having been informed of their existence while staying on the hacienda of Santo Domingo de Papalhuapa. Azurdia dug into several structures, but unfortunately he does not provide us with details of his exploration. He mentions a jaguar sculpture which is almost certainly the one seen by us (pl. 2), as well as three other sculptures reported to be incorporated in the masonry wall

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of a house foundation. His most important discovery seems to have been two stone yokes which he encountered in the excavation of some structure as yet unidentified, but probably the "Acropolis." Villacorta (1930) derived his account of the ruins from the report of Azurdia.

In 1937, Harry E. D. Pollock, attached to the Carnegie Institute staff, visited the Papalhuapa ruins for a few hours, but informs us that there is nothing in his notes which would amplify our own observations. G. Stromsvik and G. Espinosa apparently did not visit the Papalhuapa site during their explorations of the site of Asunción Mita, some 14 km. to the southwest (Stromsvik 1950).

The main architectural feature of the site is a large square platform or acropolis with sloping, boulder-faced sides. Its dimensions are 200 feet N-S and 210 feet E-W, and it stands 18 feet above the surrounding land level. Its interior construction features are not known, but it appears to have been built of a dumped rubble of small stones and earth. Several structures were built on the top of this large platform. On the west edge one can make out three much dilapidated mounds, the central one of which was a structure enclosing a corbel vaulted room whose eastern wall has fallen. Whether the structures on either side also contained vaulted rooms cannot be told from their present appearance. Along about two-thirds of the northern edge of the Acropolis surface is a pair of platforms, the easternmost of which is lower than its neighbor on the west. Stairs face the southern sides of this double platform. The eastern edge of the Acropolis top has what appears to be a single platform running along its whole length. The southern edge of the surface has no apparent structures, and there is an opening 45 feet wide which is oriented directly toward the Volcan Cerro Gordo on the northern side of the Acropolis. No approach stairway or ramp was observed by us, but it would seem probable that one existed on the north slope of the Acropolis.

About 300 feet south of the northeast corner of the Acropolis is a modern wooden house which is built on a dry stone foundation wall which is said to contain three stone sculptures found beneath the surface on this spot. A fourth sculpture escaped the fate of the other three. It is in the form of a jaguar (pl. 2) and is described below. This spot is indicated as "B" on Figure 1.

Two hundred and fifty feet south of "B" is a ball court ("C" in fig. 1) consisting of two low platforms, each 21 feet wide and 63 feet long. The space between the two mounds is 19 feet wide. The west mound stands 6 feet high, and the east one stands 4.5 feet. Here we found the tenoned stone head of a parrot (pl. 1) which is interpreted as a court marker.

About 150 feet southeast of the ball court is a low right-angled wall made of slightly trimmed basalt boulders ("D" on fig. 1). The interior of this low enclosure consists of almost pure obsidian debitage (flakes and cores). It was apparently a restricted workshop area.

Across a low wash about 150 feet to the southeast of the obsidian-filled enclosure are a series of four earth mounds ("F" - "I" on fig. 1), most of which have been dug into, presumably in search of treasure. One of these mounds covers a corbel vaulted room which we took to be a tomb. Whether the other mounds also cover masonry rooms cannot be determined until excavations are made. Two other such mounds ("E" and "J" in fig. 1) may be tombs or small platform structures.

It is our belief that the architecture at the Papalhuapa site dates from the Late Classic. While much smaller than the nearby site at Asunción Mita, the use of laja masonry and the presence of wall niches (noted in 1937 by Pollock and referred to by Stromsvik, 1950) constitute identical traits at the two sites. To these parallels we can add yokes, corbel vaulted rooms, absence of corbel spring in vault construction and tenoned parrot sculpture (ball court marker), ball court, and acropolis-type platform. Stromsvik (1950) dates the major period of architectural activity at Asunción Mita to the Classic period, apparently on the basis of the architecture and presence of Copador ware. We were not able to make ceramic collections at Papalhuapa and thus cannot compare the two sites.

The exposed central area surface of the Acropolis structure at Papalhuapa is covered with a layer, one to two feet thick, of obsidian debitage. It seems improbable that such workshop debris would have accumulated while the structure was in use, and our guess is that this refuse post-dates the abandonment of the Late Classic(?) Acropolis and that the obsidian refuse is evidence of Post Classic activity.

About one kilometer due northeast of the Papalhuapa site is a fairly steep-sided hill. This is an extinct volcano with a freshwater lake (Laguna de Obrajuelo) inside (pl. 1). This lake was anciently (and recently, until a well was drilled in the town) the source of all water during the dry season for the inhabitants of Papalhuapa. There is little doubt that the reason for the location of the Papalhuapa site is the proximity to this source of water.

The great natural deposit of obsidian occurs in the Volcan Ixtepeque. This has been studied geologically by Williams, McBirney and Dengo (1964), from whose report we reproduce the geological map of the area (map 2). We made a hurried visit to the western end of this mountain and saw everywhere an abundance of obsidian workshop debris. The small village of Quequexque is situated about one mile to the north. Some unusually large cores were col-

lected, one of which (pl. 7) was saved for detailed study. Three large parallel-sided blades were also picked up at the same workshop area.

From the area immediately west of the Acropolis (fairly open except for scattered houses) we made a collection of worked obsidian pieces. These are here described, and are illustrated in Plates 3, 4, 5, and 6.

Workshop Material from Base of West End of Ixtepeque, Near Quequexque

Three pieces were collected at this quarry and workshop site, one very large blade core (pl. 7) and three large parallel-sided blades. The large core and blades were found in association and numerous others were seen littering the area of the quarry-workshop area. The initial preparation of the obsidian prismatic cores and the concomitant production of large parallel-sided blade blanks apparently took place at the quarry. The prismatic cores and large blades were subsequently taken to the Papalhuapa site for further work: the cores for the manufacture of razor-like prismatic blades[1] and the large blades for the production of bifacially-worked ceremonial knives.

The material of the large pyramidal core is the glassy obsidian from which all the artifacts and waste are made. It weighs 11 pounds and is 8 inches long and 6 by 5 inches in diameter. The core tapers from the flat striking platform to its tip. Small ribbon-like flakes have been pressed from the tip and are evidence of the core resting on this apex while being worked. Large semi-parallel-sided blades have been removed all around the core from a flat, unfaceted platform, either the original surface of the quarried block or a fracture produced by controlled heating as described below. The platform shows no evidence of artificial preparation at this stage of work. At a later stage, when their size has been reduced, the prismatic cores show deliberate scratching or roughening of the platform, probably to keep the punch from slipping. The fact that the platform is unprepared, the irregularity of the blades removed, and the size of the negative bulb lead us to think that a chest punch was not used at this stage of manufacture. Rather the core was worked instead, either by indirect percussion (soft punch), using a bone or wood punch and a stone hammer, or by direct percussion, with a large bone or antler hammer. It is also possible that a hammerstone was employed to detach the large blades.

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[1] Aztec obsidian blade manufacture was described firsthand by Torquemada in 1616 (transl. in Kidder, Jennings and Shook 1946:135), Motolinia (ibid. 135-136), Hernandez in 1580 (Barnes 1947), and Kidder (1947:20); and has been discussed by Mená (1913), Semenov (1964:46-47), MacCurdy (1900), Courtis (1865), Barnes (1947), and Epstein (1964).

Such hammerstones are abundant in the workshop area. They are basalt and andesite spheroidal stream cobbles, probably secured from the bed of the Río Ostúa about 5 miles to the west. They range in diameter from 3 to 8 inches. Many of these exhibit signs of use as hammerstones.

Three large semi-parallel-sided blades (not illustrated) were collected at the quarry workshop in association with the large core. They are between 5.75 and 6.50 inches long, 2.0 to 2.5 inches wide, and 0.75 inch thick. The striking platform is unfaceted and unprepared by roughing. The bulb is prominent but diffuse; two of the flakes have large bulbar scars. Their sides and ends are severely crushed, probably because of being walked upon and joggled on the heavily littered surface. The dorsal faces of these large blades usually show three ridges. The blades were struck on a point which places one ridge directly on the line of the blow. This medial placement of the ridge adds the necessary strength to allow a long thin piece to be removed from the core.

Obsidian Workshop Material from Templo de Montezuma, Papalhuapa

There are seven complete prismatic blade cores without secondary utilization (pl. 6d-i). These are presumed to represent exhausted nuclei which were thrown away as being of no further utility. The striking platform is plain with deliberate scratching or roughening (parallel scratches in one or more directions) around the edge of the platform. The length ranges from 4.5 to 6.0 inches; the width (in most cases the diameter of the striking platform is the widest point) is from 0.75 to 1.75 inches. The cross section is elliptical, one side usually being slightly flatter than the others. There is rarely evidence of crushing on the tip of the core (the end opposite the striking platform), which is strong evidence that the tip did not rest on the ground while the core was being worked. It was perhaps rested on or jammed into a wooden block or anvil. The largest of the prismatic cores has most of the striking platform accidentally removed (probably an erratic punch below), and two blade scars end abruptly in hinge fractures at pumice inclusions, rendering it useless (pl. 6f). Two of the smaller cores show erratic blade scars probably due to misapplication of punch or pressure. The striking platform of the smallest of the cores (pl. 6d) is almost entirely worked away.

Two prismatic cores show secondary battering and were probably used as hammerstones (pl. 6a,c). In the specimen shown in Plate 6a, the battered area appears as a compacted white shattered area slightly below the center of the core cylinder on one side along one of the ridges caused by the intersection of two negative blade scars. The striking platforms of these cores also show signs of deliberate roughening; there is no apparent crushing of the tip. The largest of these is 5.25 inches long and 1.50 inches in diameter.

The crushed area occurs 1.50 inches from the striking platform, runs for approximately 2 inches, and is 0.50 inch at the widest point. The smaller one shows several erratic flake scars. One of the flake scars has completely removed the striking platform. It is 2.75 inches long and 0.75 inch in diameter. The edge of the irregular flake scars shows battering for a distance of 1.50 inches. The third hammerstone (pl. 6b) is not on a prismatic core. It was originally either one of the primary blade blanks, or a portion (an erratic blade) of a larger prismatic core, or a large blade from which some smaller blades were removed. There are six scars made by the removal of prismatic blades on the dorsal face, making the latter interpretation most probable. There are apparent attempts to thin the blade on the ventral surface in the manufacture of thin blades or knives. Three wide, long, wavy flakes were removed, but the attempt was apparently unsuccessful and was abandoned. One edge is completely crushed in the same manner as the two cores described above. The striking platform has been removed, one end is a hinge fracture and the other shows a part of a wide flake scar. The implement is 4.0 inches long, 1.25 inches wide, and 1.0 inch thick.

There are three prismatic blade cores whose tip ends are crushed. As these cores were not worked resting on the ground, but with the sides held firmly by some kind of clamp, such crushing could occur only secondarily. They may also be hammerstones with only the tips rather than the sides being used, either for the fluted secondary retouch on the ceremonial knives or in an intermediate punch technique (used to hit a bone, antler, or wood punch to remove blades). Mr. D. Crabtree of Idaho, who has worked extensively on the techniques of manufacture of punch blades and physical properties of various raw materials, has suggested that the tips of exhausted cores might have been used in the core preparation to score the platform and allow the blade to be peeled off with the punch, rather than struck off by force. A polished surface is, according to Mr. Crabtree, stronger and more resistant to pressure than a scratched or scored one.

Thirteen broken fragments of prismatic blade cores show two distinct types of fracture. The first kind of fracture (8 specimens) is perpendicular to the long axis of the core. The break shows no flake scar and is usually completely without a bulb; only one shows what may be a bulbar scar, and this may also be interpreted as a flake removed later. There is, therefore, no evidence of a direct blow to shear the cores transversally. Three of these eight specimens show slight hinge fracture on one side. Five of the cores show crushing along one or two sides (cf. pl. 6c), as in the cores utilized as hammerstones, although here it is usually slight. Five of these fragments with perpendicular fracture are the tip ends of cores, only two having striking platforms, and one is fractured at both ends (giving an example of a different kind of fracture at each end). It is possible that the perpendicular fracture occurred during use of the

piece as a hammerstone and that the core snapped during the shock of use, cracking near the tip where the cylinder thins. But because only three specimens show conclusive evidence of battering, a second explanation (again suggested by Mr. Crabtree) may be entertained. It seems possible that these cores were fractured to obtain a new platform in order to continue to remove the razor-like blades after the original platform became impossible to work (cf. pl. 6d,f,i). The kind of flat fracture necessary can be obtained in two ways: by grinding, as is seen on many cores from Mexican sites; and by heat fracture. Several of the Guatemalan cores show a single constriction, a raised ring which extends all around the fracture, about one-eight to one-quarter inch from the edge of the platform. This constriction, the absence of a bulb of percussion, the lack of concentric rings, and the almost perfect flatness of the remaining surface all strongly support the theory that the break is the result of some kind of controlled thermal fracture. Mr. Crabtree postulates that this might be obtained by dipping a cord or string in resin, wrapping it around the core at the desired point, lighting the string - thereby heating the volcanic glass - and then plunging the core in cold water, perhaps helping the break with a sharp rap at the thin line of heating. This method is similar to the one used in the controlled breaking of glass bottles. The second kind of fracture, of which there are four examples (or five counting the specimen which shows both kinds of fracture), is broken diagonally across the length of the core in a contorted fashion. The break is associated in three cases with a wide, erratic flake scar, perhaps due to an error in the application of the punch while attempting to remove a blade. One flake scar continues down through the core and twists around in such a way as to remove the tip. Two small cores are irregularly worked into gouge-like implements. The tips of the cores are twisted off in the manner described above, and several erratic flake scars are found removed from the original striking platform. One core was subsequently flipped over and several unsuccessful blades were removed from the opposite end, forming a shallow notch or gouge on either end. A slip of the punch or the grip in which the core was held during the process of manufacture would cause the core to slip, the pressure to be misplaced, and an erratic flake to be removed. The misdirection of pressure, straight rather than downward and outward, would presumably be sufficient to cause the break to continue through the core and remove the tip.

One flake blade core is very small - about 2 inches long, 2 inches wide, and 1.75 inches thick. The platform is contorted, not from two blows but from some natural fracturing agent. Two flakes were struck off the platform although several more partial scars are present. It may be a tip end from a large core which broke off by some thermal action before it was worked down.

The large blades struck at the quarry were carried to this ceremonial

site where they were further worked into bifacially flaked knives or ceremonial blades. All stages of this working are represented in the eleven examples in the collection (pls. 3a-d, 5e,f). It is impossible to say how long they may have been originally. Even the largest is broken far short of its original length. Their present range in width is between 1.50 and 3.75 inches. Seven are broken, split close to the striking platform, with heavily abraded edges. Ten of the blades have large plain striking platforms. One platform is punctiform. The bulbs are large and diffuse, and all have bulbar scars. Five have multiple scars. There is an apparent decrease in the width which is not accompanied by a proportional diminution in length, as the cores are worked into narrower and narrower prisms.

Three large blade fragments of the kind shown in Plate 5e and 5f were collected. None of these exhibits a bulb. Two approach the prismatic parallel-sided blades described below.

Fragmentary prismatic blades are illustrated in Plates 4e-f and 5a-f. Such pieces were very abundant. At some point in the narrowing of the core, long parallel-sided prismatic blades began to be punched off. They are both snapped approximately in the middle. The width is about 0.5 inch and the length is 2.25 inches - probably close to 5.0 inches in its original form. There is some nibbling along the edges but it is not nearly so pronounced as in the blade blanks. The portion of the striking platform preserved on one terminus of each of these blades is plain, but the surface is covered with tiny parallel scratches in one or two directions. This scratching is even more noticeable on the exhausted prismatic cores all around the outside of the striking platform. The purpose of this roughening of the platform appears to have been to prevent the punch from slipping. All of the fragments have two parallel ridges running down either side of the dorsal face (pl. 5a,b,e,f). These beveled edges give the long thin blade the necessary strength which prevents it from snapping during manufacture and guide the preparation of the platform and placement of the punch.

The large blades are worked by a process of bifacial secondary retouch into long ceremonial knives. The secondary flakes removed are flat, wavy, long flakes usually associated with wood or bone cylinder hammer technique. No pressure flaking was found in our very small sample, but in light of evidence for the secondary use of cores for battering, it may be possible, although not very likely, that the used-up cores were the fabricators. The sequence from roughed-out blade to bifacially worked knife is almost complete in the surface collection. Most of the blades and finished knives broken during manufacture or during the final touches were probably discarded.

Only one completely finished blade was collected (pl. 3g,h). It is 6.0 inches long, 1.75 inches at the widest point, and 0.5 inch thick. It is shaped like an elongate laurel leaf with a lenticular cross section. It is bifacially worked all around with long, wavy flakes, except in the center of the ventral face which shows some of the original flake surface. One end is flaked to a point and the butt is narrowed, but flattened rather than round.

A second finished knife has the point broken off, but the butt is complete and this is also flattened (pl. 3ef). A third piece is still in roughout form and somewhat thick in comparison to the finished knife; this imperfection is a possible reason for its abandonment (pl. 4g,h).

Two seemingly finished pieces, apparently broken in the last stages of work, have been further retouched for subsequent use for some other purpose. On one the point has been truncated (pl. 4a,b); on the second (not illustrated) the point has been reworked to form a borer, while blunt shoulders were worked just above the broken base—possibly for hafting.

There are 28 base fragments of bifacially flaked knives in all stages of work; all of the more finished ones show flattening. There are 8 tip fragments. The breaks appear to occur roughly in the middle of the knife. Work seems to have been performed in the following progression: the butt was first trimmed and thinned on the ventral face; then the ridges were removed from the dorsal; butt and sides were now trimmed to the point; and finally the sides of the ventral face were trimmed. The center of the ventral face often escaped secondary retouching.

Finally there are two short quadrilateral flakes. The edges of one, which is 3.75 by 2.75 inches, and about 0.5 inch thick, are severely utilized, while the second (pl. 4k,l) is bifacially retouched into a semi-quadrilateral blank or scraper which is 4 by 3 inches, and 0.75 inch thick. Implements like these, sometimes called bifacial scrapers, are found traded throughout Mexico as blanks and are considered by us to be preforms destined to serve as trade items.

Stone Sculpture

In the village of Papalhuapa there is retained as a local curiosity a sculptured seated jaguar figure of black vesicular basalt (pl. 2). It is said to have been found about sixty years ago while excavating for a house foundation. Three such sculptures were discovered; the other two are imbedded in the wall foundations ("B" on fig. 1). The seated figure is 97 cm. high.

A tenoned parrot head (pl. 1) was given to us by a local resident. This was delivered to the Museo de Arqueología in Guatemala City. We assume that this piece was originally associated with the ball court ("C" on fig. 1), and served as a marker in the usual fashion. It is 20.0 cm. long, 9.5 cm. high, and 6.5 cm. thick. The tenon end has been broken off and bears a biconical pecked perforation 5.5 cm. in diameter at the opening and tapering to 2.0 cm. in diameter where the two holes meet.

No stelae are reported from this site.

This part of Guatemala is very poorly known archaeologically. Sites in the Middle Motagua Valley have been investigated and reported on by Kidder and Smith (1943). Here the main structures are mounds which cover vaulted chambers with long entrance passages (dromos) and which served as collective tombs used over a long period of time. Ball courts with long, narrow alleys with sloping benches and low vertical playing walls and closed ends are reported. Tenoned head markers are also reported.

At Asunción Mita, G. Stromsvik (1950) found a very large archaeological site consisting of four groups of structures (plus a great Acropolis structure one kilometer from Group D, which may be separate or a section of the Group D ruins). The ruins lie in an area about 3 km. E-W by 2 km. N-S. Obsidian workshop refuse is abundant here, but no details are provided by Stromsvik. The constructions at Asunción Mita are similar to the Acropolis at Papalhuapa, being solid masses of thin andesite plates (laja) set in a mud mortar. The stones of the Papalhuapa Acropolis are quite thin, being only 0.75 to 1.00 inch thick; those at Asunción Mita are apparently of the same material but are larger in size. We were told at Papalhuapa that a great exposure of pyroxene andesite occurs near Amatillo, about 8 km. to the northwest, and we suppose this locality may have also been the source of the construction materials of the Templo de Montezuma.

Tenoned heads representing parrots (or macaws), jaguars, and snakes, used as ball court markers set horizontally in the side walls, are reported from Copán, La Unión, San Pedro Pinula, from near Antiqua and Pueblo Viejo (Huehuetenango), Azacualpilla, Finca Pompeya, Kaminaljuyu, Asunción Mita, and sites in the Middle Motagua Valley (Stromsvik 1952; Borhegyi 1965; Smith 1961; Shook 1952).

The obsidian of the Ixtepeque source has been analyzed by x-ray fluorescence and the data are published and discussed in papers by Weaver and Stross (1965), Heizer, Williams and Graham (1965), and Stross et al. (this volume, pp. 59-79).

The very large amount of workshop refuse at the site of Papalhuapa and in the whole area of the lower slopes of the Volcan de Ixtepeque indicates, in our opinion, that this was the seat of a considerable industrial enterprise whose products were largely made for export. It is possible that Papalhuapa was a procurement center established by some Maya city lying at a considerable distance. The test of this theory, for which we freely admit we have no evidence, will lie in the excavation of the site and identification of Ixtepeque obsidian artifacts in other Maya sites.

Data presently in hand – and we are quite aware how few these are – point to Copán and the Middle Motagua sites as being most closely related. At this time the Asunción Mita-Papalhuapa sites represent the southeasternmost extension of a number of Classic Maya features. The archaeology of Copán suggests that Classic lowland Maya civilization as expressed in stelae, corbel-vaulted construction, polychrome pottery, and other traits, arrived there about A.D. 435 (9.0.0.0.0 in the Maya calendar). The Maya presence at Copán has been interpreted as the actual arrival of an elite from the main Petén area. Whether the principal architectural constructions at Papalhuapa and Asunción Mita represent a secondary "colonization" from Copán or some less dramatic diffusion, will become clearer upon excavation. The exact nature of the ties to the Copán site on the one hand and the Middle Motagua area on the other will be an important matter for study.

As to the ethnic identity of the Late Classic occupation at Papalhuapa, we can also suggest only possibilities. Place names such as Papalhuapa, Mita, Ixtepeque, and others of the region are Pipil. They are part of the basis for Stromsvik and Villacorta seeing a Pipil occupation of the region in late (Post-Classic?) times. Archaeological materials such as yokes also bear out this idea. Nevertheless, in spite of the Pipil place names, which are ancient, Miles (1965) believes this area to have been Pokoman in in the sixteenth century. Furthermore, she entertains the likelihood of Pokoman occupance of the Middle Motagua sites. We think it likely that Late Classic Papalhuapa may have been Pokoman-speaking.

Explanation of Illustrations

[Accession numbers are those of the Lowie Museum of Anthropology]

Map 1 — Region of Papalhuapa

Map 2 — Geologic reconnaissance map of part of southeastern Guatemala (From Williams, McBirney and Dengo 1964, fig. 2.)

Figure 1 — Plan of the ruins of Papalhuapa

Plate 1 — Top: Laguna de Obrajuelo (looking south), with village of Papalhuapa near upper center. Photo by S. Bonis

Bottom: Profile view and upper surface of the broken tenoned parrot head ball court marker from Papalhuapa. Length 20 cm.

Plate 2 — Seated jaguar sculpture, Papalhuapa. Height 97 cm.

Plate 3 — Obsidian bifacial knives and flake blades, Papalhuapa

a,b. 3-22967
c,d. 3-22966
e,f. 3-22970
g,h. 3-22968

Plate 4 — Obsidian bifacial knives and trading preforms, Papalhuapa

a,b. 3-22974
c,d. 3-22972
e,f. 3-22965
g,h. 3-22969
i,j. 3-22971
k-l. 3-22973

Plate 5 — Obsidian prismatic blades, Papalhuapa

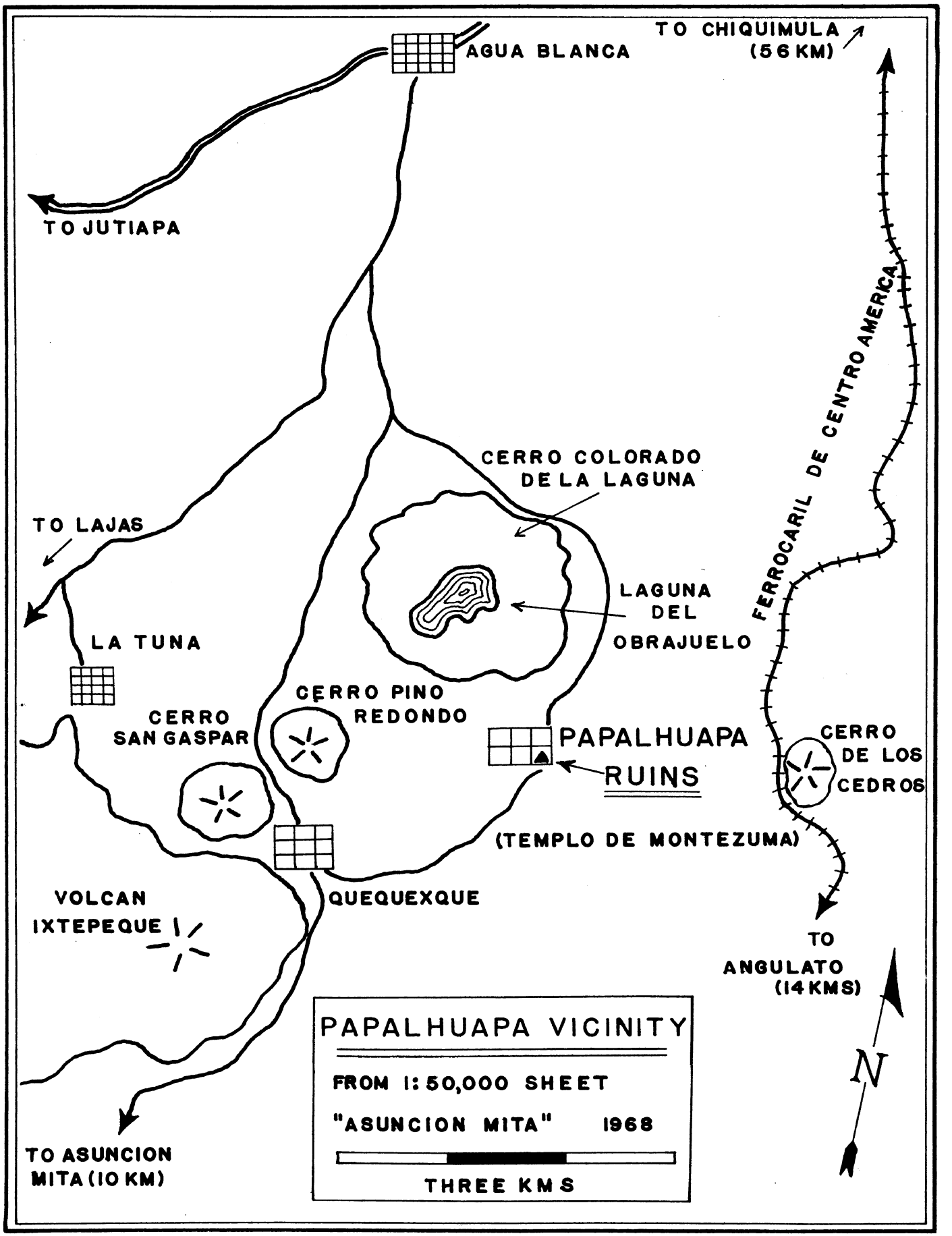
a,b. 3-22962
c,d. 3-22964
e,f. 3-22963

Plate 6 Obsidian polyfacetted cores, Papalhuapa

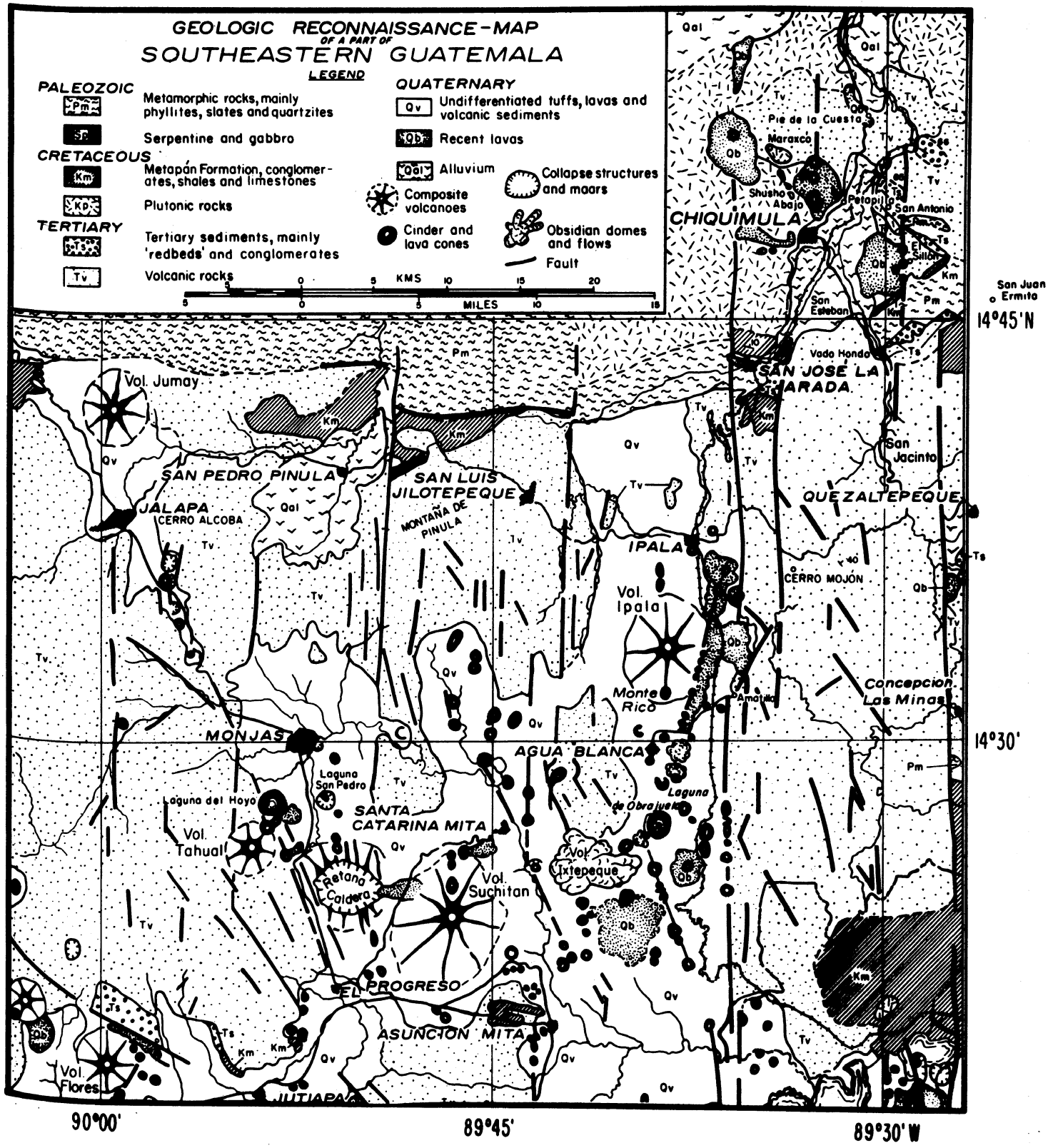
a. 3-22958
b. 3-22956
c. 3-22957
d. 3-22940
e. --
f. 3-22939
g. 3-22937
h. 3-22938
i. --

Plate 7 Profile and flat platform base of large obsidian blade core, Papalhuapa

a,b. 3-22934


AGUA BLANCA
TO CHIQUIMULA
(56 KM)
TO JUTIAPA
FERROCARIL DE CENTRO AMERICA
CERRO COLORADO
DE LA LAGUNA
TO LAJAS
LAGUNA
DEL
OBRAJUELO
LA TUNA
CERRO PINO
REDONDO
CERRO
SAN GASPAR
PAPALHUAPA
RUINS
CERRO
DE LOS
CEDROS
(TEMPLO DE MONTEZUMA)
VOLCAN
IXTEPEQUE
QUEQUEXQUE
TO
ANGULATO
(14 KMS)
PAPALHUAPA VICINITY
FROM 1:50,000 SHEET
"ASUNCION MITA" 1968
THREE KMS
N
TO ASUNCION
MITA (10 KM)

Map 1



Map 2. Geologic reconnaissance map of part of southeastern Guatemala (From Williams, McBirney and Dengo 1964, fig. 2)

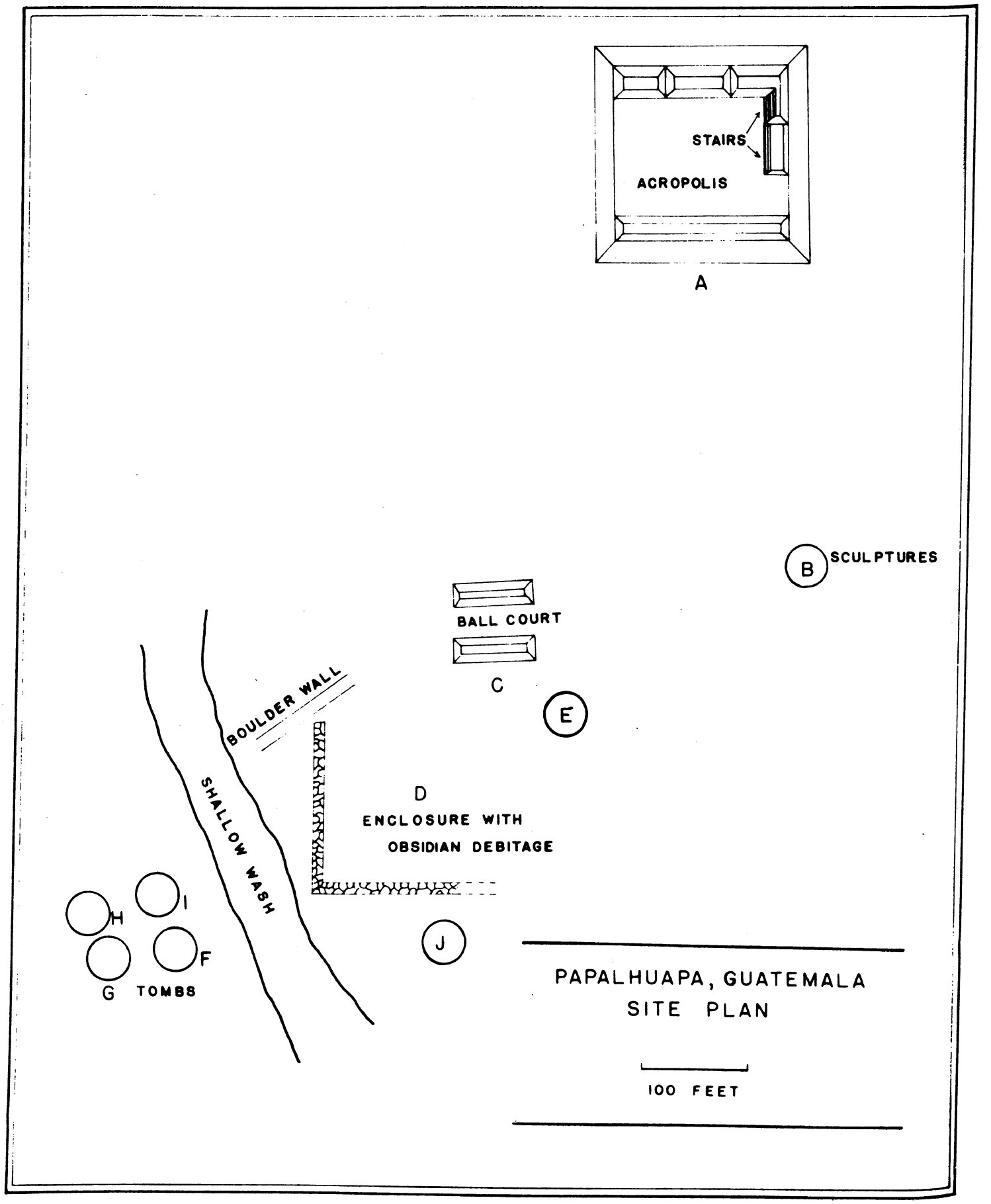

STAIRS
ACROPOLIS
A
B
SCULPTURES
BALL COURT
C
E
BOULDER WALL
SHALLOW WASH
D
ENCLOSURE WITH
OBSIDIAN DEBITAGE
H
I
F
G
TOMBS
J
PAPALHUAPA, GUATEMALA
SITE PLAN
100 FEET

Figure 1

Laguna de Obrajuelo (looking south), with village of Papalhuapa near upper center. Photo S. Bonis.

Profile views and upper surface of the broken tenoned parrot head ball court marker from Papalhuapa. Length 20 cm.

Plate 1

Plate 2. Seated jaguar sculpture, Papalhuapa. Height 97 cm.

Plate 3. Obsidian bifacial knives and flake blades, Papalhuapa.

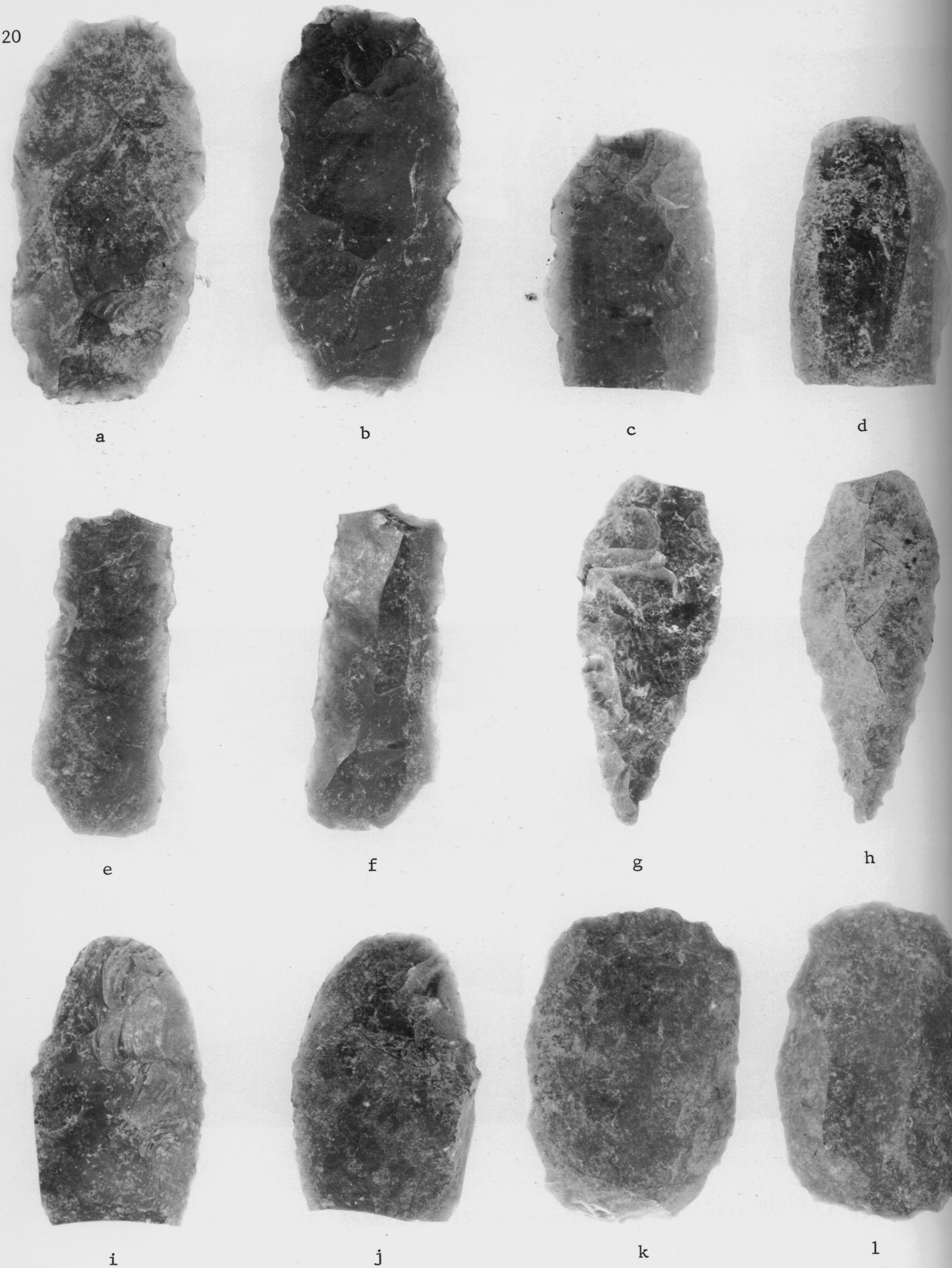


Plate 4. Obsidian bifacial knives and trading preforms, Papalhuapa.

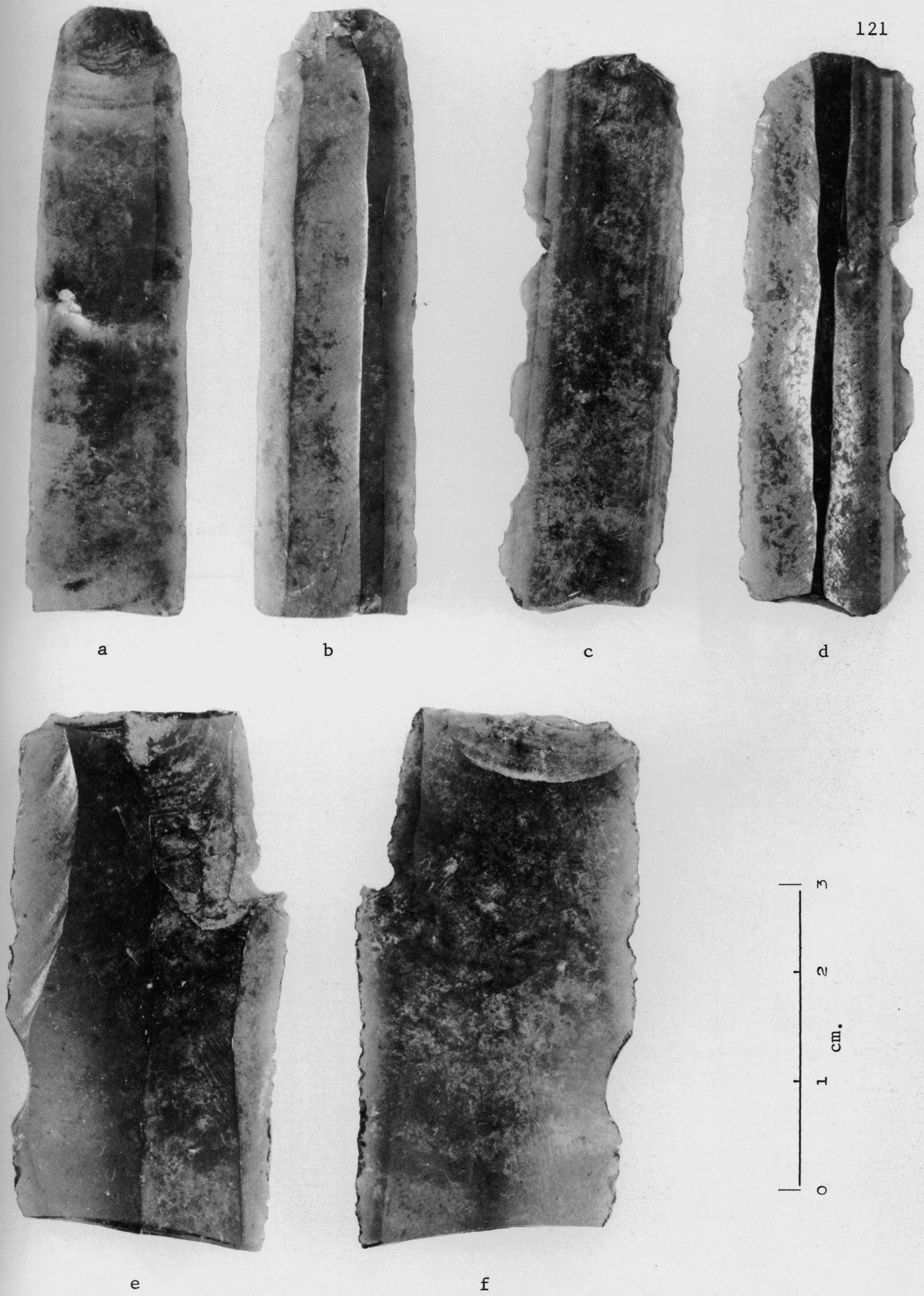


Plate 5. Obsidian prismatic blades, Papalhuapa.

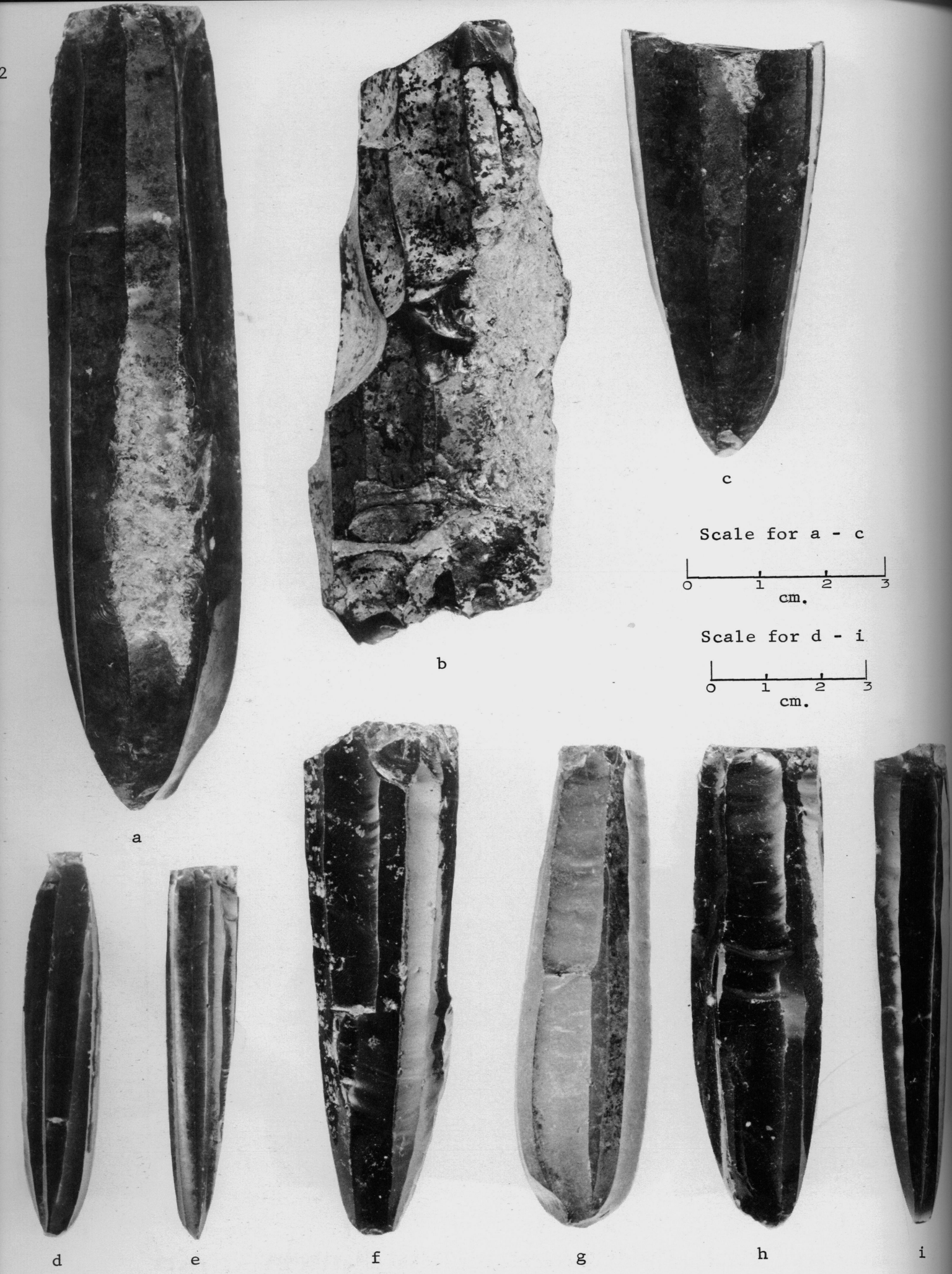
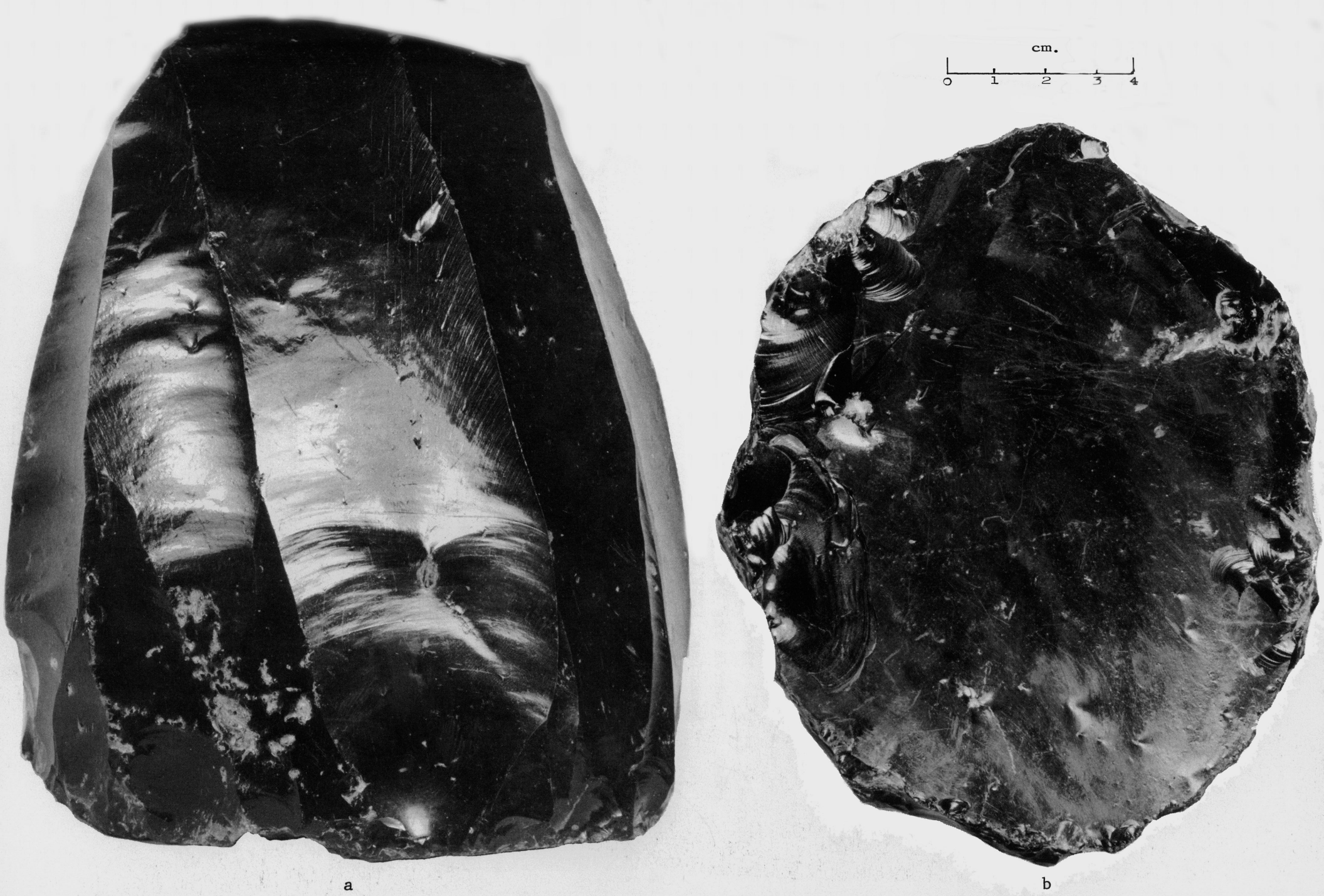


Plate 6. Obsidian polyfacetted cores, Papalhuapa.



a b

Plate 7. Profile and flat platform base of large obsidian blade core, Papalhuapa

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