# PRELIMINARY REPORT ON INVESTIGATIONS, IN THE REGION OF THE VALSEQUILLO RESERVOIR, 1962

Report on Archaeological Investigations in the Region of the Valsequillo Reservoir, Puebla,(Puebla), 1962. Report Submitted to Departamento de Prehistoria Instituto Nacional de Antropologia e Historia.

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Introduction and Background of Research

The question of the origin, age, and character of the earliest inhabitants of the Western Hemisphere is an intriguing one, and presents one of the major unsolved problems of the New World Prehistory. Scientific opinion has shifted dramatically in the past several decades from the belief widely held prior to 1926 that man dated back no more than a few millenia, to modern estimates ranging from 11,000 to more than 30,000 years ago. Whatever the ultimate solution is, it is apparent by now that the earliest Americans were few in number and left relatively little imperishable material culture. It is also evident that man in this remote period was only one of a large and varied fauna, in a complex environment, and that he should be studied in the context of the available knowledge of contemporary geology and paleontology. Given the scantiness of the evidence, it seems imperative that we pursue and develop fully <u>all</u> possible avenues of approach and that we examine critically <u>each</u> potential piece of evidence which

may help in the solution of the problem.

The region of the Valsequillo Reservoir, near Puebla (Puebla) has long been known as an area which offers excellent opportunities for Pleistocene (and earlier ?) research. The deeply bissected topography exposes a thick complex geologic section. The numerous deposits, some fossiliferous, representing a wide range of phenomena and vary in character from alluvial and colluvial through lacustrine and a variety of volcanids. Professor Juan Armenta Camacho (Instituto de Poblano de Antropologia e Historia) had carried out surficial reconnaissance in the region for many years and had amassed a large collection of archaeological and paleontological materials. His studies led him to conclude that certain bone and stone objects possibly of human manufacture , had originated in a formation knownas the Valsequillo Gravels. Due to the complexity of the geologic column, scientific opinion concerning the age of these Gravels varied considerably but all concurred that they were of the Pleistocene or an earlier epoch. The character of the faunal remains from the Gravels likewise indicated consiserable antiquity. (The assemblage appeared to include camel,horse, mastodon, mammoth, glyptodon,dire wolf (?), extinct taper, and

peccary, and other extinct carnivores and ungulates).

The possible presence of archaeological remains in the Valsequillo Formation was of significance, and if the Gravels proved to be of considerable antiquity, they might furnish precious clues concerning the early inhabitants of the Western Hemisphere. In addition in 1959 Armenta reported finding on the surface a fragment of proboscidean pelvis bearing engravings of extinct animals, (Armenta, 1960).

In 1960 I had the opportunity of visiting Puebla and studying briefly his collections. On the whole, while not definitive in themselves, they were highly suggestive of the potential of the area, and strongly indicated that a complete investigation of the situation was warranted. Professor Armenta and I agreed on a program to carry on a preliminary investigation, as a joint project of his institution and my own, the Peabody Museum of Harvard University.

The character of the available material determined our approach:

1) The collections included a large quantity of potential stone "artifacts", collected from the Valsequillo Gravels or from the nearby surface. The vast majority of these were made of a light brown chalcedony which

occurs naturally throughout the region and is common in certain exposures of the Gravels. Most of these were extremely crude, blunt-edged, percussion flaked, and showed a wide variability of form with little tendency to cluster into "types". Most had been heavily water rolled. These features are characteristic of "eoliths" and other quartzite objects chipped by natural agencies to resemble human artifacts, and therefore rendered the entire assemblage suspect. However, a few were made of other materials, seemed less random, and were more acceptable.

2) In addition there was a large series of bone fragments which showed smoothing or scratching. Again, as in the case of the stone objects a few seemed acceptable, but many could be explained in terms of the abrasive action of the current that deposited the Gravels.

3) The fragment of proboscidean bone seemed to have been modified by scratching or engraving before fossilization, although the "artistic" character of the engraving depended entirely on the interpretation of the viewer.

4) Finally, just before my arrival in Mexico, Armenta recovered an indubitably bifacially worked artifact, out of place, and close by, in situ a large fragment of

the mandible of a mammoth in the Gravels, in which he believed it had been imbedded.

In short the situation concerning the potential archaeological material was this: We had questionable artifacts or "eoliths" almost certainly from the Gravels; we had an indubitable bifacial artifact out of place, and the engraved bone also out of place. Our goal then was to discover the existence or lack of it, of fresh unrolled artifacts of unquestionable human manufacture, preferably fashioned of a distinctive non-local material, and most important, in situ in the Valsequillo Formation.

General Procedure Followed

Field work was undertaken between April 23 and July 15, 1962. The initial seven weeks were devoted to an intensive study and survey of the region aimed at obtaining as complete a record of the archaeological and paleontological remains as possible, and making a superficial study of the rudimentary features of geological stratigraphy. The area covered by this survey lies between 18° 50' to 19° 15' North latitude and 98° 00' to 98° 40' West longitude. Attention was centered in the Valsequillo Reservoir Region between the city of

Puebla to the north, and the town of San Hipolito to the south, and between the Atoyac River and the town of Zacachimalpa to the east and west respectively. Selected localities outside of this district were visited to further the solution of specific problems.

Since the material in the existing collections represented a very wide area, well over one hundred square kilometers, the primary objective of the reconnaissance was the location of well defined localities which would be suitable for controlled excavation. Only direct association of artifacts and flakes of indubitably human workmanship with extinct fauna in situ in the Valsequillo Gravel Formation, was considered as admissible evidence, and as an indication of a site to be excavated. A team of fifteen to twenty-five trained local workers from the Museo de la Revolucion (Puebla) assisted in this phase of the investigation.

The survey yielded four localities at which artifacts in situ were unquestionably associated with extinct fauna in the Valsequillo Gravels: El Mirador; Hueyatlaco; Tecacaxco; and El Horno. All are located within a few kilometers of the town of La Colonia Buena Vist de Tetela, either on the Tetela Peninsula or the adjoining

small peninsula east of Tetela. In addition several other localities (eg. near the Hacienda of Arenillas, south of the town of Totimehuacan, and on the Atepetzingo River, one-half kilometer south of Totimehuacan) appear promising and should be further investigated.

The remaining part of the field season was devoted to testing at El Mirador, conducting preliminary excavations at Hueyatlaco, and Tecacaxco, and excavating the small site of El Horno. A team of thirty-five trained workmen and museum assistants cooperated in this.

This project was entirely archaeologically oriented. As an archaeologist, beyond rudimentary description, I have not made any attempt at interpretation of the complex geology and paleontology of the region, which I feel is rightly in the sphere of specialists in these fields. I understand that new research of this kind has been and is being done in the area, but do not at present have access to the material. I believe that <u>archaeological</u> evidence strongly supports the direct association of unquestionably man-made artifacts with extinct fauna in the Valsequillo Formation. But the significance of the faunal assemblage and the antiquity and climatic conditions indicated by the geology are and should

remain the work of specialists. I hope that the research of this kind, done recently or in the future will provide solutions to these questions, and that the joint efforts of the various disciplines can be united to produce a complete and coordinated program.

Chronology of the Investigations

The 1962 Valsequillo Project began in effect in 1960, when I had the opportunity of visiting Puebla and viewing Professor Armenta's large collection of archaeological and paleontological material. As noted above, after studying it I became convinced that the situation should be thoroughly investigated. We discussed the possibility of a cooperative project, and in 1961 agreed to carry out such a program. On this basis in 1961 I applied for and received a grant from the American Philosophical Society to conduct the research.

I arrived in Mexico on April 23,1962 and spent several days restudying the material in Armenta's collection. We then visited those localities which he considered of prime importance. With this brief background, I was able to sketch out the plan of investigation to be

followed: Beginning about May 1st, 1962 we spent two weeks surveying the area of the Valsequillo Reservoir (see above). Subsequently, having chosen the areas most likely to produce evidence of the kind sought, we were joined by a team of local workers, in an intensive search for actual evidence of archaeological material in situ in the Valsequillo Gravel Formation. This search was rewarded by the discovery of four such localities between May 15th and June 12th, 1962. Test excavations at three of these localities lasted until July 15th. At this time I was obligated to return to the United States (Wyoming) to act as co-director of the Harvard University - National Geographic Society Hell Gap Expedition. I was able to bring some of the artifacts recovered with me for examination by North American Early Man specialists. I was able to analyze some of the material as my schedule permitted. I returned to Mexico briefly in late August, 1962 for the Thirty-fifth Congress of Americanists and placed the material once more in the Museum of the Revolution.

El Horno

The Site

The Site of El Horno is located on the west bank of the old pre-reservoir Atoyac River on a low peninsula jutting out from the highland of the Tetela peninsula. It lies about one kilometer west of the town of La Colonia Buena Vista de Tetela at 98° 11' longitude, 18° 55' North latitude. It is situated at an altitude of 2040 meters above sea level. The site was located on June 8, 1962 during the above mentioned archaeological survey of the Valsequillo area. Sr. Hector Montiel, an assistant at the Museum of the Revolution in Puebla, collected from the surface of the future site several bones of a proboscidean, and brought them to the Museum for further study. One of these, a phalange, displayed indisputable signs of butchering; a deep (ca. 2 mm.) V-sectional cut running almost entirely about its circumference. Microscopic examination revealed that the cut had been made by a sharp edged object used in a sawing motion. The adjacent phalange, evidently from the same animal,

showed some evidence of butchering. When the locality was visited, it was evident that a considerable portion of a single proboscidean was represented. Although much had been eroded away, much still remained in place in a deposit considered to belong to the Valsequillo Formation. (Maldonado-Koerdel, 1962, p.c.; Mooser, 1962, p.c.). The only evidence of the presence of man, was the cut phalange, but on the basis of this slight but intriguing clue, it was decided to conduct test excavations at the locale.

Procedure and Observations

On June 13, 1962, the datum point was established and a grid of one meter squares was laid out. The first act was to photograph and map the existing surface out of which the fossils were eroding. Subsequently a small test trench indicated the presence of three observable depositional units: 1) Recent lake shore deposits (0-18 cms. thick), including glass, metal, ceramics, and redeposited fragmentary fossils evidently belonging to the proboscidean.

2) A well defined white silty deposit, labeled Zone A, 0-45 cms. thick) containing undisturbed mastodon fossils. 3) A red clayey deposit with occasional small gravel lenses designated Zone B (40-60 cms. in excavated thickness) including a few fragmentary fossils pertaining to the proboscidean, and several artifacts.

In addition certain fossils lay partially in Zone A and partially in Zone B. Apparently the underlying deposit B had been in a soft unconsolidated state at the time of the advent of the mastodon, and certain objects had sunk or partially sunk into it.

The initial procedure was to remove the entire recent lake deposits exposing the early layers and negating the possiblity of contamination with modern materials. Subsequent excavation was carried out with small hand tools. Each fossil or artifact was photographed and recorded in terms of its exact geological context, its depth below datum and its triangulated horizontal position. The fossils were treated with a solution of Bedacryl and allowed to remain in place until the termination of the work on July 14, 1962. The rising waters of the gradually filling dam created an ever present hazard, but fortunately it was possible to complete the project before they reached the level of

in the actual excavation.

The Materials and their Context

The fossils found in place pertained for the most part to a single mastodon comprising somewhat less than a third of the complete animal and including principally the pelvic girdle minus the sacrum; several ribs, one tusk and fragments of the other one; numerous tooth fragments and various fragments of long bones. In addition a large number of fragmentary fossils representing long bones, ribs, cranium, and metapodials were redeposited in the modern lake sediments. Fossils not pertaining to the mastodon were rare but included horse and a small artiodactic.

A total of thirteen specimens of chipped stone were recovered in situ with the El Horno mastodon, (see Figure 6 ). Six of these occurred in Zone A: two (numbers 9 and 13) directly beneath the pelvis; three (1,3, and 4) in an area containing several ribs, and one (2) a short distance from the pelvis. Five of the remainder were recovered from Zone B, three (5,6, and 7) in relatively isolated positions, one (8) near the tusk, one (10) in a cluster of tooth and bone fragments. The remaining two occurred at the contact with the modern sediments a short distance from the

main concentration of fossils and their association can be considered somewhat less certain. In addition while constructing a drainage, two specimens (14 and 15) were recovered out of place near the tusk.

Of the total of thirteen specimens of chipped stone recovered in situ with the El Horno mastodon, six showed definite evidence of retouching and can be considered intentionally formed artifacts. Another two exhibited signs of utilization on one or more edges, and probably served as cutting edges, or scrapers. The specimens were numbered chronologically in the order of discovery and will be discussed in sequence.

1# This specimen is a thin unifacially retouched flake recovered a short distance from several ribs (see Figure 6 ). The two retouched edges intersect to form a blunt point at one end. No attempt was made to thin or otherwise work the butt-end. The function of the piece is somewhat uncertain, but it could have served as a cutting edge or a scraping edge, possibly even a projectile point.

2# This piece is a wide flake still displaying a small area of cortex on one edge. The opposing contex edge shows evidence of utilization.

3# This thick narrow pointed flake or core fragment exhibits

rather extensive steep chipping along one edge, and local shallow retouch on the ventral face produces a rather sharp point.

4# This diminutive flake displays no retouch or use marks and may well have been a flake taken from a larger piece.

5# This specimen is a thin flat triangular flake lightly retouched along one side to from a sharp cutting edge. In addition retouch extends for a short distance down the adjacent side to form a sharp point.

6# This elongated thick flake shows no definite signs of retouch or utilization.

7# This comparatively large thick flake shows rather extensive shallow retouch on the dorsal face along one side to form a scraping and/or cutting edge. In addition steep retouch on the ventral face near the butt of the flake produces a steep end scraper form.

8# This small thick flake shows no evidence of use or retouch.

9# This thin flat flake recovered directly under the right iliac crest of the mastodon has naturally sharp edges showing extensive retouch or heavy utilization around most of its circumference.

10# This piece consists of a thick plano-convex flake showing extensive steep retouch at one end to form a

11# and 12# These thick blocky flakes or core fragments show no evidence of use or retouch.

13# This extremely interesting specimen was discovered almost directly under the right acetabulum of the mastodon pelvis. One edge of the rather thin carinated roughly triangular flake exhibits use marks. Another has been well worked with pressure retouch on one face; subsequently a blow struck to one end of this edge removed somewhat over one-half of this worked edge. The flake scar produced by this blow presents an exceedingly burin-like appearance, but whether the tool functioned as a burin must await further evidence.

14# (not in situ) This thick crude flake is apparently a fragment of a larger piece such as a nucleus. One sharp edge may have been utilized but it shows no definite marks of use. However, a naturally occurring pointed projection near the butt of the piece shows evidence of use, probably for perforation.

15# (not in situ) Like the preceding this thick pointed flake may be a core fragment as it shows evidence of numerous anterior flakes or attemprs at flake removal. However, its naturally occurring point exhibits fine marks of use and/or retouch, and possibly functioned as a perforator.

Summary

Between June 8, and July 14, 1962, excavations were carried out at the Site of El Horno, in the Valsequillo Zone, Puebla, Mexico. A total of fifteen artifacts and flakes of indisputably human workmanship were recovered, eleven in direct association with the bones of extinct animals, primarily mastodon.

Hueyatlaco

The Site

The site of Hueyatlaco is located on a high terrace of the Valsequillo Reservoir below the eastern edge of the town of La Colonia Buena Vista de Tetela (98° 10' longitude, 18° 55' North latitude). It is about one-fourth kilometer south of the site of Tecacaxco, and like the latter lies at an altitude of about 2055 meters above sea level. It is situated about one hundred meters from a larger but more isolated outcrop of the Valsequillo Formation, near which Armenta reported finding the engraved fragment of proboscidean pelvis in 1959.

No flakes were visible on the exposed surface of the outcrop during the reconnaissance of 1962. However, on the basis of the occurrence of the engraved bone and the evidently rich fossiliferous content of outcrop where exposed, it was decided to carry on test excavations in the area. The actual site for these excavations was chosen in preference to the large isolated outcrop (see above) near the where the engraved bone was found because it was felt that this locale

would be less difficult to tie into the overall stratigraphy sequence, and that its geologic position would thus be more certain.

Observations and Procedure

The site itself comprises a prominent outcrop of the Valsequillo Formation, divided into two sections by a shallow arroyo, which also serves as a local cattle trail. The two sections were termed Hueyatlaco I and II respectively. Preliminary excavations were conducted at both sections.

The geology of the locale is very complex, and as noted above comments made at this time are extremely tentative and are descriptive in character rather than interpretative. The local facies of the Valsequillo Formation is apparently primarily fluviatile in character. It varies from a fine silt and sand representing a weak current (possibly near the edge of a larger body of still water into which the stream flowed), to a fine gravel, representing a swifter flow. All of the deposits encountered at Hueyatlaco I and most of those at Hueyatlaco II were of the fine silt-and-sand variety: There is evidence at Hueyatlaco I of this deposit cutting an earlier red clay level, (see Figure 13). Although minor sub-divisions in the Valsequillo Formation

may be made based primarily on fluctuations in current (also see Figure 13) their exact significance cannot be ascertained without a thorough study of the intimate details of the site's stratigraphy by a qualified geologist. Somewhat more certain is the fact that the character of both the faunal remains and the artifacts recovered indicate that they have been moved little or no distance from their point of origin. The fossils are unrolled and often unbroken, and the artifacts are fresh with no signs of water-wear.

A datum point was established on June 12,1962 and a grid of meter squares was laid in at Hueyatlaco I. Subsequently when the material recovered warranted it, a similar grid was established for Hueyatlaco II. All modern soil and surficial debris were removed where present to avoid mixing. Subsequently, excavation proceeded with various hand tools and the excavated earth was passed through a one-fourth inch mesh rocker screen. Each fossil flake or artifact was photographed in situ and recorded in terms of its geologic context, depth below baseline, and triangulated horizontal position. In two cases,the association of an artifact with the remains of extinct fauna was particularly close and the objects were left in place and removed in a block for

further examination and/or exhibition at the Museum of the Revolution.

The Material

A large number of fossilzed remains of extinct fauna were recovered. These were concentrated in the Valsequillo Formation; although sections of the underlying formation were explored at Hueyatlaco I, they failed to yield such remains. Although no formal analysis is available at this time, preliminary field identification indicate the presence of at least mammoth, mastodon, horse, and camel.

The artifacts recovered from Hueyatlaco occur in the same stratum with the faunal remains, often in close association with them. Since no formal analysis has been done on the material to date, the following brief discussion is based on observation made during the field season. The artifacts will be considered chronologically at Hueyatlaco I, and then at Hueyatlaco II.

Hueyatlaco I

1# As shown in Figures 14 to 15 , this extremely interesting artifact has been extensively worked on both faces. The careful shallow flaking and secondary retouch produce a cutting edge along one side of the ovoid object.

Part of this edge has been subsequently truncated by a blow struck along the edge of the artifact. The truncation presents numerous similarities to the burin form, but whether the tool actually functioned as a burin cannot be ascertained with assurance until a larger sample of the assemblage is available. The artifact was recovered from the silty sand facies of the Valsequillo Formation at Hueyatlaco I.

2# The second artifact was a thick oblong flake showing extensive modification on the one edge. The chipping varies from shallow to rather steep, producing a somewhat irregular scraping edge. (The irregularity may be purposeful as the resultant form is roughly analogous to the spur-perforator found in the pre-ceramic collections from Queretaro and Hidalgo.)

3# This is an elongated thin naturally pointed flake showing modification at the distal end and along one side. The naturally pointed tip has been further sharpened by fine (pressure ?) flaking and the adjacent edge shows considerable evidence of utilization. The character of the flake is of interest. It displays two parallel longitudinal dorsal ridges and is obviously the result of a series of parallel blows, possibly on a simple prismatic core; it retains the striking

platform (unfaceted).

4# This very interesting object apparently represents a multi-purpose artifact combining the functions of a concave scraper and perforator. It is made on an irregular random flake, and displays careful steep (pressure ?) flaking on one end and the adjacent angle to form a concave scraping edge and a blunt perforator. It was uncovered in situ about one centimeter from a large portion of a horse mandible, (Figure 16) in the silty-sand deposit at Hueyatlaco I. In order to preserve this interesting and significant association, the group was removed in a block and depcsited at the Museum of the Revolution in Puebla.

5# This least definitely worked chipped stone artifact was also recovered from the silty-sand of Hueyatlaco I. It is an ovoid tabular flake displaying some preliminary flaking on its dorsal surface, and concentrated steep (pressure ?) retouch on one diagonally oriented end. It could have served as a scraping or planing tool.

Hueyatlaco II

1# This is a bifacially worked elongated or lanceolate object, very possibly functioning as a projectile point. The chipping is rather coarse and steep and tends to be

concentrated on one slightly convex face of the artifact. The reverse face has a steep longitudinal ridge running its length, and shows relatively less work. The artifact was evidently made on a thick carinated (prismatic?) flake, and retains the unfaceted striking platform at the proximal end. It was recovered from the silty-sand facies of Hueyatlaco II.

2# This is a small chert cobble showing bifacial percussion flaking around approximately one-third of its circumference. The edge produced is sharp and somewhat sineous. The object was uncovered in situ driven into a large fragment of a mastodon mandible near the tooth row, (Figure 16). A mastodon rib lay nearby. The group occurred in a fine gravel lens of the local Valsequillo deposit at Hueyatlaco II. Since the artifact was in such direct contact with the mastodon remains, it was decided to preserve this association intact. The group was removed in a block to the Museum of the Revolution in Puebla.

Summary

Although only preliminary tests were carried on at Hueyatlaco, there is good evidence for the association of man-made artifacts and the extinct fauna of the Valsequillo Formation. Further investigations should

be undertaken to gain a representative sample of the archaeological assemblage.

Tecacaxco

The Site

The Site of Tecacaxco is located on a high terrace of the Valsequillo Reservoir below the northeastern edge of the town of La Colonia Buena Vista de Tetela, (98° 10' longitude, 18° 55' North latitude). It is situated at an altitude of about 2055 meters above sea level, where the local facies of the Valsequillo Formation outcrops at the head of a small steep arroyo draining into the reservoir. It was located during during the extensive reconnaissance of the Valsequillo Zone carried out between May 15 and June 12, 1962. Sr. Prisciliano Garcia, one of the local workmen assisting in the survey, reported finding a "fresh" flake in the Valsequillo Gravels. The object was photographed, and mapped in situ, and then removed. Subsequently another similar flake was encountered, and it was decided to conduct preliminary excavations at the site.

Observation and Procedure

The archaeological site consists of a homogeneous deposit of a poorly sorted facies of the Valsequillo Formation. Characteristically it contains numerous

fragments of the underlying volcanic deposit known as the "Xalnene". No internal divisions were immediately observable within the artifact bearing stratum. It is stratigraphically entirely exposed at its upper surface (except for a thin recent cover of dark soil). Geologic strat-trenches are needed to establish its exact relation with the other later local deposits.

On June 12, 1962 a datum point was established and a grid of meter squares was laid in. Due to the nature of the outcrop, initial excavation was done on both sides of the gully and the two divisions of the site were tentatively designated Tecacaxco I and II. However, the second (southern) portion, proved after extensive tests to be wholly unproductive, and attention was focused ultimately on Tecacaxco I. Here excavation proceeded to a maximum depth of 1.3 meters below the Sub-Datum established on the uppermost surface of the deposit. Fragmentary fossils (see below) occurred throughout, but artifacts were absent in the lowermost 40 centimeters. In addition a small test trench was begun on a low knoll west of the main locale, but could not be completed in 1962.

Initially all modern soil and debris were removed to avoid mixing. All subsequent excavation was done

with a variety of hand tools, and all excavated material was sieved in a one-fourth inch mesh rocker screen for maximum security. Each fossil flake or artifact was photographed and reorded in terms of its geologic context, depth below datum and triangulated horizontal position.

The Material*

A considerable quantity of fragmentary fossil faunal remains was recovered. These were scattered throughout the excavated section, though they decreased in number in the deeper levels. The chipped stone artifacts were likewise scattered, though they too decreased in number with depth and were absent in the lowermost 40 centimeters.

Though the faunal remains have not been analyzed, preliminary field identification indicates at least the presence of mammoth, mastodon, horse and camel.

The only definite artifact recovered from the Site of Tecacaxco in 1962 was a small thin roughly oval flake which displayed extensive chipping along

* Since the chipped stone materials are currently in Puebla and have not been formally studied, the following discussion is based on field observations and descriptions. Since the unworked flakes had not yet been catalogued at the end of the 1962 season, and no further information is available about them, they will be discussed here as a group on the basis of preliminary observations.

one edge. The tool could have served for either cutting or scraping.

The relatively numerous flakes from the site may be described as follows: Many of the flakes show prepared, usually faceted, striking platforms. Some in addition seem to be the result of several parallel strokes, as in a crude prismatic core technique. These tend to be elongated and to have one or more visible median ridges. In other examples however, the blows resulting in the configuration of the dorsal surface had been struck from several directions.

Summary

At Tecacaxco chipped stone objects of definite human manufacture were recovered from a deposit belonging to the Valsequillo Formation, together with fossilized faunal remains representing several extinct species.

El Mirador

The Site of El Mirador comprises a poorly known assemblage of extinct fauna including mammoth and horse, and the one associated human artifact. The association occurs in a coarse poorly sorted gravel containing a large fraction of rounded rhyolitic (?) cobbles and pebbles. This gravel has not yet received extensive geologic study, and it may or may not be equivalent to the Valsequillo Formation.. The site is situated on a peninsula of the same name protruding into the Valsequillo Reservoir, ca. two kilometers east of the town of La Colonia Buena Vista de Tetela, ($98^{o}$ 10' longitude, $18^{o}$ 55' North latitude). It was discovered during a survey of the area in 1962 when Sr. Hector Montiel an assistant at the Museum of the Revolution in Puebla. reported finding a flake of human manufacture <u>in situ</u> in the gravel, about ten centimeters from a horse vertebrae. After verifying the character of the exposed surface of the flake, its stratigraphic and horizontal position were recorded,and the specimen was removed for further study. A photographic record was kept of all the

stages of the removal. Despite the very promising character of the locale, the shortness of time, and the relative remoteness of the spot and difficulty of transportation, made it impossible to conduct further tests at El Mirador in 1962.

The specimen

The object recovered from El Mirador is of considerinterest: It is evidently a hafted knife or projectile point. The basic flake is rather long, thin and naturally blunt-pointed. The butt end of the flake has been considerably narrowed by coarse flaking confined for the most part to one face. The natural tendency toward pointedness of the distal end has likewise been emphasized by unifacial chipping. The butt end of the flake has a well developed faceted striking platform. The dorsal face displays multiple longitudinal ridges. The combination is suggestive of a crude prismatic core technique.

Conclusions

After extensive survey of the region of the Valsequillo Reservoir (Puebla), four sites were located in which there is good evidence of the association of man made artifacts with the extinct fauna;in three cases within the formation known as the Valsequillo Gravels. Preliminary excavations were carried out at these three localities and produced a small but interesting series of artifacts. It is hoped that further archaeological investigation will produce a more complete sample and that a more detailed analysis of the material will be possible. It is also hoped that geological and paleontological research in the area will yield data on the exact antiquity of the deposits and the environment they represent.