

SOUTHERN DIEGUEÑO USE AND KNOWLEDGE OF LITHIC MATERIALS(1)

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FOREWORD

In northernmost Baja California today there are less than two hundred Southern Diegueño living in seventeen rancherías widely scattered over 3500 square miles of territory, from the present International Line south as far as La Huerta de los Indios. South of La Huerta there are a few Southern Diegueño families living at the predominantly Paipai settlements of the ex-Mission Santa Catarina Virgen y Mártir and its nearby ex-mission ranchería of San Miguel. The Southern Diegueño speak a language belonging to the Yuman linguistic family and call themselves Tipái (The People). In these notes they are called Tipái.

It was thought that some data concerning native knowledge and use of lithic materials might be of general interest to both ethnographers and archaeologists. Information of this kind is often lacking in ethnographic reports, yet such data are just as important as, for example, ethnobotanical notes since they represent another part of the Tipái classification of the world in which they live.

The basis for the Tipái classification of lithic material is largely functional and somewhat subjective. The native artisan sees in the rocks and clays certain potential or obvious physical properties, the principal ones being ease of fracture, suitability for grinding, texture, plasticity, and color. These factors of recognition result in a native classification of lithic materials which differs noticeably from our geological classification.

LOCAL SOURCES OF MATERIAL(2)

The sierras in Territorio del Norte, as exemplified by the Sierra de Juárez, are largely composed of granite and metamorphic rock which are capped in some localities by lava flows and bedded volcanic rocks.(3) Much of the volcanic flow consists of a greenish-black basalt which weathers to a chocolate-brown color. This material is commonly found on archaeological sites. Basalt and andesite outcroppings are located at Los Alisos, Table Mountain, Colonia Rusa (Guadalupe Valley), and Punta Colnett. Crystalline rocks compose about three-quarters of the northern area: quartz diorite, granodiorite, schists, and gneisses. The Sierra de Juárez is composed of a granitic core flanked to the east and west sides by schists, gneisses, and slates. The auriferous gravels of this range contain white quartz, dark quartzite, red and grey porphyritic lavas, and some schist, all furnishing material for aboriginal tools. White quartz is particularly common in mountain archaeological sites. Porphyry is common in the Pacific coastal plateau extending from San Diego County into northern Baja California, and this material is a characteristic of the coastal sites. A source of red and black chert is Isla San Geronimo, the larger of the two Islas de Todos Santos, lying

six kilometers northwest of Punta Banda on the Pacific coast. Sandstones and shales are found at Tijuana and in the foothills of the Sierra de Juárez, and agglomerates, tuffs, and lava may be obtained from Rosarito (south of Tijuana), El Sauzal del Comacho, and Ensenada. San Antonio del Mar is a local source of limestones. In addition to these local materials, the Tipái obtained either through trade or by making special trips to more distant sources, manganese, hematite, and obsidian. However, data based on collections from archaeological sites indicate that most artifacts were made from local materials.

NATIVE CLASSIFICATION OF STONE FOR TOOLS

Based on ease of fracture

?ui?kwišá (4) -- Clear quartz. Commonly used for blades and projectile points, as indicated by specimens found on archaeological sites.

?ui?hakwišá -- Milky quartz. The Tipái claim that there is a difference between ?ui?kwišá and ?ui?hakwišá based on the way the two stones fracture. The term ?ui?hakwišá also applies to white chalcedony, although it is quite different in appearance and texture from milky quartz.

?ui?upát? (ipát) -- Quartz crystals. If they are colored with lithia in tourmaline formations they are particularly esteemed by shamans (kusiyái). Informant Ricardo Calles (kwhá:s gens) of Calabazas Canyon reported:

It is said that if you hold one in the hand while gambling it will bring luck or if traveling it will protect you from harm. It is very dangerous for most people, though. The kusiyái often attacks people through their dreams. He places one of these crystals under his intended victim's blanket, quilt, or sleeping mat. This crystal is just like a radio receiver. The kusiyái mÍspIt (sorcerer) sends his evil to the victim through the crystal: it talks, sings and weeps, just like a radio. Pretty soon the victim gets sick, worried, and mopes around; he doesn't know what is wrong. He won't eat. Then he will die or go crazy. It is said that the kusiyái can also cure with these crystals.

Crystals are found at Pala and tourmaline at Mesa Grande, both in San Diego County (DuBois, 1908, p. 99), and may have been traded into northern Baja California. In January, 1940 Mr. A. O. Treganza, Dr. A. E. Treganza, and I discovered a possible source of black tourmaline and quartz crystals just north of Cantú Grade, between that road and La Rumarosa, Baja California. The local Tipái may have utilized this outcropping within their territory since it is not as far away as Pala and Mesa Grande.

?ui?xukwá -- Smoky obsidian. This material is not common in mountain sites but is found in archaeological sites along the Laguna Maguata (Salada) and as far south as the San Felipe Desert (El Desierto en Medio), in dune sites at Valle de Trinidad and along the salitral at the eastern base of

the Sierra San Pedro Mártir. The nearest source for this obsidian apparently is Obsidian Butte on the southeastern shore of Salton Sea, Imperial County (Treganza, 1942, p. 155, Footnote 13). The Tipái visited Cocopa settlements along Hardy's Colorado and either obtained the obsidian through that tribe or from the neighboring Kamia, a Diegueño group.

?ui?xakwá -- This widely inclusive term is applied to any fractureable metamorphic or igneous rock which can be used for artifacts. Thus it includes quartzite, rhyolitic tuff, andesite, dacite, basalt porphyry, and the crypto-crystalline silicates (chert, flint, agate, jasper or chalcedony). As long as it can be flaked, it is ?ui?xakwá, regardless of Western geological classification. The term even applies to petrified wood. Scrapers, choppers, drills, blades, and projectile points may be made of such varied materials. Apparently there is little special selection of fractureable materials for blades or projectile points and choppers or scrapers (particularly turtle-back scrapers). According to the Tipái, almost any material can be used if it "breaks right."

As an example, below are identifications (5) of only a few artifacts recovered from inland sites in Tipái territory:

- (a) Porphyritic dacite, with feldspar and rare quartz crystal phenocrysts in an extremely dense base. Scraper.
- (b) ?Very fine grained diorite. (6) Scraper and projectile point.
- (c) Calcareous slate or a mudstone. Large blades.
- (d) ?Dense metavolcanic rock with epidote. Core from which flakes have been removed.
- (e) Metamorphosed rhyolite tuff. Scraper.
- (f) Porphyritic andesite, with large feldspars in dark, glassy groundmass. Five large blades, some with serrated edges.
- (g) Devitrified? rhyolite glass. Projectile point.
- (h) ?Dense lava.(cryptofelsitic material stippled with minute flakes of biotite). Could be a fine-grained metamorphic rock. Projectile point.

Specimens (f) to (h) were recovered from a "workshop" (tallér) site in Santa Clara Valley, near Vallecitos, Baja California. All are highly patinated. Signal Mountain, Imperial County, is a nearby source of jasper for the Tipái. Artifacts of this material have been recovered from dune sites along the west side of Laguna Maguata (Heizer and Treganza, 1944, p. 314). A source of petrified wood is Pinto Mountain, at the junction of Davies' and International Wash on the United States-Mexican border. Examples of this material have also been recovered by Treganza from sites along the Laguna Maguata (ibid, p. 331.).

Based on suitability for grinding

?ui?harrəhárr -- Hard crystalline rocks which "do not break right," often represented by large or small boulders in arroyo bottoms or creek beds. It makes little difference whether they are dense or coarse-grained. If they cannot be flaked but can be ground, they are considered by the Tipái as ?ui?harrəhárr. Such rocks may be ground into manos, metates, or free mortars. The usual pestle in the area is the cobble-pestle. Bed-rock metates and mortars are also made in large immovable masses of such rock. The most commonly utilized type is represented by a dense granite, but limestone, diorite, and hard sandstones are also used. Gifford, (1931, p. 4) says that the Kamia journeyed as far west as Jacumba, San Diego County, for granite from the northern foothills of the Sierra de Juárez.

Of no specific use

?ui?tasí:t -- This term applies to the disintegrating or exfoliating pale grey granite which is common in the interior of northern Baja California. It is represented by numerous outcroppings and titanic boulders, particularly in the higher parts of the Sierras Juárez and San Pedro Mártir. It is too "crumbly" to be used for artifacts.

?ui?hopái:t -- Large tumbled granitic boulders found in canyons and stream beds, too large to be of any use.

?ui?tu: -- Mica. By itself of no use but it is considered pretty. However, good pottery clay should contain mica enough to eliminate the need for added temper (see below POTTERY CLAYS). There is a mica mine at Las Parras between Peña Blanca and Cañon del Álamo, south of Tecate.

No artifacts of steatite (soapstone) were found in northern Baja California and Tipái informants failed to recognize the material by description. However, Señor Francisco Barrios (deceased, 1949) of La Puerta de Tecate informed me that he had found a globular "olla" of soft, smooth stone at the east base of Picacho de Cuchumá, overlooking Tecate. From his description of this "stone pot," it could have been a steatite bowl. There is a steatite quarry near the mouth of Carrizo Gorge in the north-east part of Jacumba Valley, San Diego County. In 1940 five steatite "plates" were found nearby and local arrowshaft-straighteners were also made of the same material, according to Treganza (1942, p. 157). (7) Waterman (1910, pp. 298 and 309) says that the Southern Diegueño of San Diego County used powdered soapstone for white body paint.

POTTERY CLAYS

Texture, "bind," and plasticity are the important points to consider in selecting good pottery clays.

εmat?sukwIn ačau ("earth-pot-to make") -- The best pottery clay, containing mica. No added temper is needed. The old woman María Osuna (hat? am gəns) of Manteca Canyon, one of the few surviving Tipái potters, said that the good clay occurs in vetas (veins) in the Sierra de Juárez foothills.

There are many deposits of suitable clay in the Tipái country. Malcolm J. Rogers (1936) and Heizer and Treganza (1944) list other sources of pottery clay for Southern California.

Pottery made from mountain clays burns a brick-red upon firing. Modern Tipái ware has a hardness of 4.5 (chabazite) while archaeological specimens from the same localities have a hardness ranging from 4.5 to 5.0 (apatite) on the pottery hardness scale.(8) Occasionally, in mountain sites, sherds of thinner ware are found, grey or buff in color, and they probably represent "desert ware" (made of alluvial clays) brought in by Tipái or Cocopa from the Laguna Maguata region, between the Sierra de Juárez and the Sierra de los Cúcupa to the east.

εmat[?]xwít -- A clay which resembles εmat[?]sukwIn ačáu but which is not as good because, unless temper is added, ware made of this clay will crack in the firing process or even during the initial drying. Rotten granite pulverized in a stone mortar is added as temper.

PIGMENTS

Here, color is the factor of recognition and selection. εmat[?] means earth (also body); the other terms indicate the color of the earth.

εmat[?]kwíí:z -- Manganese. Burned chunks of manganese were pulverized into a black powder. According to informants, this material came from the east and was probably traded in. The Kamia worked a deposit of psilomelane in the Jacumba Valley (Gifford, 1931, p. 35) and manganese was obtained by the Cocopa from the north end of Cerro Prieto (Black Butte), east of the Sierra de los Cúcupa (ibid, p. 278). Black was used aboriginally by the Tipái as war paint. According to Waterman (1910, p. 313), powdered graphite was used by the Southern Diegueño of San Diego County for painting the death images at the long mourning ceremony.

εmat[?]kwárr -- Hematite. Deposits of red ochre are located at Mineral Springs (Waterman, 1910, p. 301) and Jacumba Valley (Gifford, 1931, pp. 35 and 42), both in San Diego County, and near the mouth of Carrizo Canyon, on the east side of Jacumba Valley (Heizer and Treganza, 1944, p. 310). Another source of hematite was the north end of Cerro Prieto where it was quarried by the Cocopa and then traded to the Tipái. Also, iron oxide precipitated by iron-bearing springs in the foothills of the Sierra de Juárez was used locally as a red pigment. By heating to stimulate oxidation, the red color was accentuated. A small spring, locally known as Agua Hechicera, in Manteca Canyon was such a source of iron oxide.

εmat[?]kwás: -- A yellowish pigment. This is possibly limonite, or yellow ochre, which was widely used by California Indians, according to Heizer and Treganza (1944).

εmat[?]hápa -- A white clay, deposits of which are found eleven kilometers east of Agua Hechicera (not the one in Manteca Canyon) in Nejí Valley. White was used as a mourning paint by the Tipái.

Local stories have it that south of the Sierra de las Tinajas in the Desierto en Medio, to the east of the Sierras Juárez and San Pedro Mártir, there is a mysterious laguna de brea (bitumen lake) which appears and disappears at infrequent intervals. Although the Indians were reputed, by local Mexicans, to use asphaltum from it for waterproofing baskets and for adhesives, this claim could not be confirmed by native informants or through observation. The usual Tipái adhesive and waterproofing material was melted pinon gum.

SALT

sí:ɬ -- The Tipái of northern Baja California made trips both to the Gulf of California coast and to the Pacific coast for salt. On the latter coast a favorite spot was the mouth of the San Miguel Arroyo near the Misión Vieja, where there were tidal flats from which salt could be scraped, leached through baskets, and crystallized by boiling.(9) Older native informants recall making special trips to that place thirty years ago. Mexicans also once collected salt from San Miguel, transporting it by burro for sale to inland ranchers.

METALS

ka^ʔkwás: -- Gold. This metal had no aboriginal use. Kwás: means "yellow." Since gold was the only metal the Tipái were aboriginally familiar with, the term was applied to any metal used by the Caucasians; for example, a rifle or shotgun is called hapú^ʔkwás: (hapú meaning a stick or cudgel). No data were obtained regarding aboriginal knowledge of meteoric or telluric iron, or copper and silver. The Tipái are not interested in gold, in striking contrast to the attitude of the local Mexicans and foreigners. The Mexicans tell yarns about the Indians knowing where the gold is and of secret Indian diggings, but none of these tales could be confirmed. Heizer and Treganza (1944, p. 341) note that California Indians in general were not interested in this metal.

CONCLUSIONS

Since the Tipái had within their territory no outstanding sources of materials such as the crypto-crystalline silicates for blades and projectile points, they used what was available to them. Some attention was given to the volcanic rocks for such tools, while for grinding implements granite, diorite, and sandstones were the favorite materials. Although limited quantities of the crypto-crystalline silicates were obtained by the Tipái through trade or expeditions, artifacts of local materials are by far the commonest, as shown by collections from archaeological sites, and a wide range of local lithic materials was used for blades, choppers, scrapers, drills, and projectile points.

Tipái classification of lithic materials is based on the factor of fracturability, suitability for grinding, texture ("feel"), plasticity, and color. For example, we class clear quartz and milky quartz together, but the Tipái class them as being distinct kinds of rock. Thus the Tipái classification of lithic materials reflects cultural use.

FOOTNOTES

- (1) These brief notes are based on field work carried out during the summers of 1948 and 1949, financed by the Department of Anthropology, University of California at Berkeley. Archaeological reconnaissance was authorized by the Departamento de Monumentos Prehispanicos of Mexico, directed by Dr. Eduardo Noguera. Native words in these notes are recorded in the phonetic orthography of Bloch and Trager (1942) except that for trills a double "r" (rr) is substituted for their reversed capital "r," and long sounds are marked with a colon (:).
- (2) Based on C. H. Beal, 1948.
- (3) Table Mountain, twenty kilometers south of Tijuana and visible from the Pacific coast road, is an example.
- (4) ?ui? means "rock" or "stone." The other morphemes are descriptive but no meaning for each was obtained. In view of the fact that types of rocks are always indicated by the prefix ?ui?, it is noteworthy that a small rock-lizard common in the region is called ?ui?ko by the Tipái.
- (5) Identifications were kindly made by Dr. Howel Williams, Chairman, Department of Geological Sciences, University of California at Berkeley.
- (6) Query indicates that no microscopic section was taken.
- (7) An arrowshaft-straightener given to me in 1948 by Indians of Manteca Canyon was made of micaceous schist.
- (8) Set "C", Ceramic Hardness Standards of the University of Michigan Museum of Anthropology (in March, 1934).
- (9) Gifford (1931, pp. 24-25) notes that the Kamia used to leach out salt-impregnated earth from the Salton Sink and crystallized the product by boiling.

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