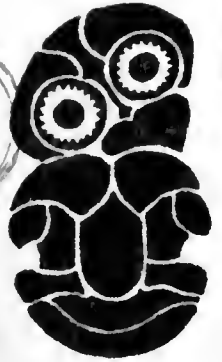


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## SOCIAL MOBILITY AND SURNAME: TWO COMPARISONS

William C. Sayres

Social scientists (see Hollingshead, 1949; Warner, 1942, 1949; Winch, 1952; Sirjamaki, 1953; Cuber and Kenkel, 1954) concerned with family and class factors in American life have noted the importance of surnames in the determination and limitation of social position. Particularly well documented is the significance of surnames in the socially most favored "old family" group. One of the clearest statements of the relevance of surname to status at all social levels in a contemporary New World society appears in the San Carlos study by Gillin (1951). In this Guatemalan community "everyone is placed by means of family name." For the non-Indian (Ladino) members of the community, surnames serve not only to mark the social separateness and inferiority of the Indian group but to specify social distinctions among themselves: "...an individual's class position is reckoned in terms of his family line (his surname) and...all family lines are ascribed places on the class scale." Gillin observes that the achievement of wealth and prominence will not raise the status of an individual beyond that of his family line, nor will lack of achievement lower it. In San Carlos, from "upper" to "lower" social horizons name is more efficacious than fame.

In the present paper San Carlos is taken as the point of departure for a discussion of certain features of surname ranking in another Latin American community, the Colombian pueblo of Coconuco.<sup>1</sup> In Coconuco, as in San Carlos, the ascriptive value of surnames is high, but in the former community an interesting variation appears: the specific purpose of the present paper is to introduce and examine this variation.

Coconuco is a highland valley agricultural community situated approximately thirty-five kilometers southeast of Popayán, capital of the Department of Cauca. The people of Coconuco are the Mestizo descendants of non-Indian colonists. The indigenous population, after whom the pueblo was named, was moved to nearby reservation lands to make room for the colonists, and on these lands the Coconuco Indians still live. Hence the pueblo Mestizos have Indian neighbors.<sup>2</sup> The term "Mestizo," as used in this paper, refers to a member of the large racially and culturally mixed non-Indian group of the area: the Mestizos, however many Indian skeletons may grace their family closets, speak only Spanish, prefer Western to native garb, and have no reservation land system. The Mestizos, as locally defined, are comparable to the San Carlos (and Mesoamerican) Ladinos.

Among the San Carlos Ladinos, "each family name is either 'upper' or 'lower': among the Coconuco Mestizos, similarly, every family name assigns its bearer to the primera linea (first line), to the según puesto inmediatamente (position immediately following), or to the "lower class" tercer puesto (third position). In Coconuco, as in San Carlos, the very "lowest" of Spanish surnames are those identified with the Indians.

In both places certain Spanish names are exclusive to the Indians, others to the non-Indians (Coconuco Mestizos, San Carlos Ladinos), and still others are shared by both groups. Gillin suggests that these shared names in San Carlos do not imply genealogical connections between the groups, but represent labels borrowed by the Indians, or bestowed on them by non-Indians. By way of parallel illustration, he cites the lack of implied family relationship between George Washington and Booker T. Washington in the United States. In Coconuco, one of the shared surnames falls partially into this category. A distinction is made between the Jicarollo<sup>3</sup> de Castilla (Castilian Jicarollo) and Jicarollo de tierra (common Jicarollo) lines. The former is ascribed a Spanish and the latter an Indian heritage. The Jicarollo<sup>4</sup> de Castilla of the pueblo accordingly regard the Jicarollo de tierra of the reservation as an unequivocally separate line, and the latter do not presume to assert a connection. However, over the years various reservation Jicarollo have drifted into the pueblo, intermarried with members of the lower Mestizo ranks, and left progeny bearing their surname. Hence there are now three branches of Jicarollo: (1) the Jicarollo de Castilla, whose members are Mestizos belonging to the según presto inmediatamente of pueblo society; (2) the pueblo Jicarollo de tierra, whose members are Mestizos of the tercer puesto; and (3) the reservation Jicarollo de tierra, whose members, as Indians, rank below the tercer puesto. Genealogical relationship is recognized between (2) and (3), but not between (1) and (2), or between (1) and (3).

The other shared surname, Paranima, clearly implies genealogical relationship between the two lines bearing it. Historically the Paranima, like the Jicarollo de tierra, are Indians with pueblo spillovers: there is a reservation source branch, and there is a pueblo derived branch. The latter, begun by a few reservation Paranima who formed pueblo alliances, is exclusively tercer puesto. Nevertheless its members, as Mestizos, outrank the reservation source branch.

Gillin notes for San Carlos that none of the surnames shared by both groups is rated as upper class. In Coconuco, with only two cases represented, the situation is similar: neither surname is primera linea. Though one branch of Jicarollo is ranked just below primera linea, the social aspirations of a "de Castilla" are hardly furthered by the presence of two "de tierra" branches sharing their name.

Another Coconuco surname, though not shared by Indians and Mestizos, is identified with two major Mestizo branches. Until 1949 there was no split in the Talaro ranks: all Talaro were primera linea, and their common relationship was unchallenged. Then Julio Talaro scandalized the primera linea by making a bad marriage, and the threat of affiliations extending to the reservation was introduced. Two Talaro factions accordingly developed. One, led by Rafael Talaro, maintained that Julio and those who supported him were not really Talaro, that they had "stolen" the family name and had no right to use

it: this argument was designed to introduce a "de Castilla"- "de tierra" distinction. The other faction, led by Julio, sought to minimize the importance of the marriage and proceeded in self-defense to affirm vigorously its right to the Talaro name. Indeed, Julio and his followers went too far: if there were any imposters on the premises, they insisted, Rafael and his cohorts were the guilty ones, and only the former group represented the "real" Talaro. This was deplorable strategy, since it implied that the Julio and Rafael factions were not after all related, an implication which the Rafael faction was definitely interested in promoting. The breach widened steadily and the Julio faction was dropped from the primera linea. When the Talaro are discussed today, discussants are expected to specify the branch concerned. As an informant in our own society, referring to local family fortunes, comments: "Some of the Stocktons do and some of them don't (belong to the upper class). You've always got to make a division in the Stocktons" (Warner, 1949, p. 102).

In Coconuco, as in San Carlos and elsewhere in Latin America, the Spanish surname passes from father to children only if the father is officially married to the mother. If the parents are not legally wed, the children receive the surname of the mother. Since illegitimacy is quite common in Coconuco as in San Carlos, surname is not a valid index of patri-lineal connections. Considerably less social stigma is attached to illegitimacy in Coconuco than to tercer puesto and Indian surnames. It is better to be an illegitimate Calcimia (según puesto) than a legitimate Stenozza (tercer puesto). Gillin similarly notes that in San Carlos illegitimacy confers no great social disadvantage.

The people of Coconuco, like those in San Carlos, do not keep elaborate genealogies. Thus the Coconuco Indians are all felt to be interrelated somehow (like the Indians of San Carlos), but so complexly crisscrossed have the connections become over the centuries that it is considered too troublesome to untangle them. To a lesser extent this is true also of the Mestizos, whose crisscrossings have been largely, though by no means exclusively,<sup>5</sup> effected within rather than between the different social strata. For both Indians and Mestizos surnames are regarded as the handiest guide to broad relationship categories. Even when surname branches develop, as those for Jicarollo, Paranima and Talaro, the degree of further specification required is admittedly slight. In placing anyone within the local social ranks, all that needs to be known is his surname and, if any, surname branch.

The foregoing paragraphs essentially represent spadework. We are now ready to deal operationally with four cases involving individuals who acquired important symbols of higher status. In San Carlos, according to Gillin, class mobility would be achieved in none of these cases. There, he observes, an individual may attain prominence or wealth, but will still be rated in terms of the place of his family line on the class scale.<sup>6</sup> In Coconuco class mobility was achieved in two of the cases and was not achieved in the other two. These cases interest us not because they show that surname ranking in one community is not what it is in another, but because they show strikingly how a key social process operating in one community may, while operating in another, entail both the same and rather different outcomes.

Two comparisons will be made, each between a case in which social mobility from one position to another occurred and a case in which it did not. Each set compared is drawn from the same social stratum and features an increment of like status symbols.

The first comparison is between a Jicarollo and a Paranima, both Mestizos of the tercer puesto. Policarpo Jicarollo and Antonio Paranima, at the time the study began, were young men in their early twenties, unmarried, more white than Indian in racial appearance, living with their parents and working the household plot. Each had been putting aside a portion of the harvest proceeds over a number of seasons, and with these funds part of the household was converted into a tienda (small general store). A variety of perishables and non-perishables was brought in from Popayán and resold locally. Policarpo and Antonio were industrious and personable, and their tiendas soon were doing a thriving business. Each had obtained as much formal education as the local primary school could offer, and each began to keep a few books and magazines about the premises. Courtesy forms were cultivated, and impressive contributions were made during local charity drives and fund-raising campaigns. Suits were kept pressed, shirts clean, neckties knotted, and shoes shined. As tienda profits mounted, assistants were hired, and Policarpo and Antonio let it be known that the humble manual tasks were in hands other than their own. Mercantile contacts in Popayán were promoted, and Policarpo and Antonio expanded their operations to include the handling of market arrangements for local producers. They renovated their respective households, bought new radios and began to smoke American cigarettes (three times more costly than the most expensive local brand). In short, they handily bested the "poor farmer" standards associated with the tercer puesto class, an accomplishment readily conceded among their Coconuco fellows: none, indeed, were found who ventured to dispute it.

Yet only one achieved class mobility. Antonio was blocked, much as his counterpart in San Carlos would be blocked. He was now prominent and comparatively wealthy, but he was still a Paranima. As a Paranima, he could not be ranked higher than tercer puesto: his surname blocked his rise. Nor could he raise the status of the other pueblo Paranima: though he bested the "poor farmer" standards of his class, there were forty Paranima who did not; in a sense he served as the exception that proved the rule.

The social fortunes of Policarpo, however, were linked to a surname with two pueblo branches. Before his successes, he and his parents were aligned with the tercer puesto Jicarollo de tierra. As his prosperity grew, and it became obvious that he easily met the standards of the según puesto Jicarollo de Castilla in terms of both possessions and deportment, a connection was intimated. His genealogy, like that of almost any of his fellows, was hazy beyond the second ascending generation, and people began to suggest that if all the remote crisscrossings could be known, it might be found that Policarpo and his parents were closer to the "de Castilla" than to the "de tierra" branch. The frequency with which the suggestion was heard publicly, and the strength with which it was propounded, clearly followed the progress made by Policarpo in attaining the status symbols described. During the two-week period following his one serious business setback, when a large consignment of perishables prematurely spoiled, the suggestion was heard notably less often, and was advanced far more tentatively. As soon as it was demonstrated that his losses

were only temporary, that he was taking them gracefully, and that his recovery was indeed swifter than anticipated, the suggestion was again voiced ever more frequently and forcefully. The "de Castilla" affiliation was one which he had little incentive to deny, nor was he really in any position to do so. Within five months Policarpo and his parents were generally ascribed "de Castilla" status: their mobility was greatly facilitated by the circumstance that they had no other surviving primary relatives in the community;<sup>7</sup> Policarpo's sister had died in infancy, his mother's brother had long ago left for Cali, his mother's sister had died a spinster, and his father was an only child. The leading "de Castilla" Jicarollo, for their part, welcomed such an illustrious addition to their ranks. By the conclusion of the Coconuco study, Policarpo and his parents were, on all matched ratings, según puesto.

The second comparison is between a Talaro and a Valcedes. Francisco Talaro and Roberto Valcedes were, at the time the Coconuco study began, según puesto. The former belonged to the Julio Talaro faction, the latter to an unsplit surname line. Like the other two cases, they were in their twenties, unmarried, more White than Indian in racial appearance, and still attached to the parental household. They farmed a little, but their primary interest was in cattle. For the past few years they had been systematically trying to build up their herds, by putting their extra centavos into new stock and additional grazing lands, by withholding young stock from the market, and by making use of all the circulars and pamphlets they could find on the finer--and government certified--points of cattle raising. By now it was apparent that their holdings were quite as substantial as those of anyone in Coconuco. Moreover, the character of their assets was highly esteemed. If there was more occupational prestige to be gained as a merchant than as a farmer, traditionally the most favored occupation of all was cattle raising: the early Spanish cattle barons had set the style for those who aspired to the trappings, at least, of aristocracy.

Francisco and Roberto had new homes built, and invested in new horses and tailored suits. Like Policarpo and Antonio, they had been educated in the local school: now they began to collect fine books, and were known on occasion to quote a few lines from the works of Guillermo Valencia, Colombia's master poet. They successfully volunteered to organize various of the local charity drives and fund-raising campaigns, and were as courteous in their solicitations as they were generous in their own contributions. They conducted themselves with dignity and decorum, and impressively demonstrated their hospitality through libations of American whisky. All informants agreed that in terms of profession, possessions, and deportment they quite equaled the standards of the primera linea.

There was no class mobility at all, however, for Roberto. As informants pointed out, he was a Valcedes, the Valcedes were según puesto, and that was that. The very prospect of a primera linea Valcedes seemed a self-contradiction. Though Roberto bested según puesto standards, there were thirty-five Valcedes who did not, and he could no more let his accomplishments speak for all than he could stop being a Valcedes. In every lot of silver dollars one will outshine the others, but its value is fixed by its sign and not its shine. Thus was Roberto's class value fixed by his surname, and he remained según puesto.

For Francisco, on the other hand, who belonged to a split surname group, class mobility was possible. As his successes mounted, people began to suggest that if all the past connections could be known, it might be found that he was closer to the Rafael Talero than to the Julio Talero branch. Within six months the suggested alignment became an accepted alignment, and Francisco was rated by all informants primera linea.

The situation might be diagrammed as follows:

SP= Surname Placement

SM= Social Mobility

	<u>Tercer Puesto</u>	<u>Según Puesto</u>	<u>Primera Linea</u>
Case I	SP: Paranima		
	SM: Antonio Paranima	blocked	
Case II	SP: Jicarollo de tierra	Jicarollo de Castilla	
	SM: Policarpo Jicarollo	----->	
Case III	SP:	Valcedes	
	SM: Roberto Valcedes	blocked	
Case IV	SP: Talero (Branch J.)	Talero (Branch R.)	
	SM: Francisco Talero	-----	

Cases I and III illustrate precisely the same kind of process and outcome noted by Gillin in San Carlos. Antonio and Roberto were placed by their respective surnames, and their accomplishments, while singularly well suited to the validation of higher status, could not, in the absence of proper surname representation, create it. Cases II and IV, on the other hand, illustrate the manner in which surname representation at more than one class level may serve as a social lever permitting class mobility. Interestingly enough, while social mobility is blocked in the former and permitted in the latter cases, ultimately the rationale invoked is similar in all four cases. Thus Cases I and III are held back because of surname affiliation, and Cases II and IV are assigned to higher class position not, according to the rationale, because of

their accomplishments but because of their nominal affiliations with a more favorably placed surname group. Wealth and prominence in Coconuco, as in San Carlos, essentially validate but do not create status, and even though the class mobility achieved by Policarpo and Francisco originated in their accomplishments, these accomplishments were socially defined as no more than the validation of status created by surname affiliation. The accomplishments, in effect, led to the "discovery" of the more favorable affiliation. One cannot, in the absence of a status shift by one's entire surname group, come to belong to a different class without coming to belong to a "different" surname group, and this is only possible when the character of the surname provides a potential social bridge between differentially ranked groups. The major structural conditions for the bridge are these: (a) lack of scrupulous tracing of genealogies; (b) multiple surname branches represented in different social strata; (c) relative isolation of the socially mobile unit, in terms of the number and strength of specifically known kin ties with the branch from which allegiance is to be transferred. Given such conditions, the attainment of symbols closely identified with higher status may lead to a reinterpretation of basic kin affiliations and subsequent realignment with the more esteemed group. Thus, in a community where surname connections determine social status, a strong drive toward higher status may prompt the appearance of a different team in the ancestral backfield.

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#### FOOTNOTES

1. The field research in Coconuco was undertaken between November 1952 and May 1953.
2. The population of the pueblo, like that of the parcialidad or reservation, is approximately 800.
3. Pseudonyms are used for all Coconuco surnames.
4. Following Spanish usage, the form of the surname is not changed in the plural.
5. There is a feeling that the bad alliance contracted by Julio Talaro might not have led to a surname split if he had handled the episode less defensively and more diplomatically. It is not denied by members of the primera linea that other lapses, licit and illicit, have occurred in the past, and have been successfully played down. The general policy toward lapses has been to underadvertise them, on the recognized, though not so labeled, principle that selective forgetting may eventually erase them.
6. He goes on to note that a family line--with status symbols acquired and shared generally among its members--may rise in the scale, "although the rise will not be universally recognized until at least a generation has passed."

7. With the partial exception of Roberto Valcedes, who had two pre-adolescent sisters, this was true of all four cases. In selecting cases which permitted comparisons, it was desired to reduce as far as possible the number of factors which might otherwise limit social mobility.

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## ARCHAEOLOGICAL SURVEY OF THE MT. SHEEP AND PLEASANT VALLEY RESERVOIRS

George L. Coale

### Introduction

The archaeological reconnaissance of the Mt. Sheep and Pleasant Valley Reservoirs represents a continuation of the Columbia River Basin Survey instituted by the Smithsonian Institution immediately following the war. The primary purpose of the survey was to assess the extent of the archaeological resources in the area to be inundated by the above named reservoirs, and to recommend such salvage operations as must be accomplished before flooding takes place. Since the Smithsonian Institution has discontinued its survey in the Columbia Basin, the work reported here was accomplished by the joint efforts of the Pacific Northwest Power Company which provided necessary funds, and the Washington State Museum which was responsible for the initiation and execution of the project. The Mt. Sheep and Pleasant Valley Reservoirs are projects of the Pacific Northwest Power Company.

The work of the survey was greatly facilitated by the cooperation of Mr. Kinsey Robinson, President of the Pacific Northwest Power Company, and Mr. W. E. Parrott of Washington Water Power Company. Thanks are due also to the staff of Pleasant Valley Camp for their assistance and friendship: Mr. and Mrs. Oscar Taplin, Mr. and Mrs. James Armistead, Mr. Dan Cole and Mr. Ralph Page. The work in the field was accomplished by the author at the direction of Dr. Douglas Osborne, Curator of Anthropology at the Washington State Museum. The period of field work began October 9, 1955 and was completed November 30, 1955.

The sites were recorded on standard Museum Site Survey Forms and located on topographic sheets of the pool areas. They were labeled in the trinomial system, the first element of the site designator being the serial number of the state in an alphabetical list of states, the second element being a two letter symbol indicating the county, the third being the serial number of the individual site in the order that it is located within the county. Thus 10 is the symbol for Idaho and ID the symbol for Idaho County; 35 is the symbol for Oregon and WL the symbol for Wallowa County; 10-ID-1 is the designation of the first site located in Idaho County. Site designations assigned in this survey were 10-ID-1 through 10-ID-19 and 35-WL-2 through 35-WL-21. 35-WL-1 had been previously assigned in the pool area of the Hell's Canyon Reservoir. The site reports, maps, photographs, catalogues, daily journal and field collections have been placed on deposit in the Washington State Museum, and will be available there to interested persons.

The readiness with which the Pacific Northwest Power Company accepted the suggestion that their areas be surveyed archaeologically and the generous support that was given to the work merits the gratitude of those in the Northwest who are interested in areal prehistory. We hope that other and as satisfactory arrangements will be made elsewhere in the future.

### Environment

The area surveyed comprises the Canyon of the Snake River between the mouths of the Imnaha River and Brush Creek. In this region, the Snake marks the boundary between Idaho County, Idaho, and Wallowa County, Oregon. All lands not privately owned form part of the Nez Perce National Forest on the Idaho side and the Wallowa National Forest on the Oregon side. Mt. Sheep damsite is located about one mile above the confluence of the Imnaha and includes the area enclosed within and below the 1165 foot contour. Pleasant Valley damsite lies just below the bar on which Pittsburg Landing is located and includes the area encompassed by the 1565 foot contour.

In the 60 mile stretch of river to be inundated by the two reservoirs, the river drops nearly 500 feet in elevation, flowing through a canyon which is over one mile in depth at the southern end of the Pleasant Valley pool and over 4000 feet at the Mt. Sheep damsite. The Snake has cut this trench through the Snake River High Plateau between the Seven Devils and Wallowa Ranges, and, from about the vicinity of Getta Creek and continuing upstream, the trenching has exposed the Paleozoic and Mesozoic rocks of these mountains. They include metamorphosed basalts, granites, schists and a few sedimentaries. Their bedding planes have been so distorted by metamorphosis, faulting, and so on, that the canyon erosion has produced immense amorphous rock masses rearing, in places, in near-vertical cliff faces. Here, the canyon is extremely narrow and precipitous, widening in the least degree only where tributary streams have cut back the canyon walls. (Fenneman, 1931, pp. 227, 250-251; Freeman, 1940, rep. pp. 7-8; Freeman, et al, 1945, pp. 68-69.)

Below Getta Creek, the basal rocks of the old mountain ranges are left behind and the canyon cuts primarily into the horizontally bedded Tertiary basalt flows of the Tristate Uplands section (Freeman, et al, 1945, p. 69). In this area, the walls rise from the river in steps or terraces which roughly follow the contact between successive flows. These structures are known locally as "rimrock," and they frequently display the columnar cleavages so common in the valleys of the Lower Snake and Columbia Rivers.

Topographically the canyon of the Snake River is young. That is, it is characterized by sharply incised erosional features cut into a pre-existing mature surface (Fenneman, 1931, p. 250; Freeman et al, 1945, p. 68). Level or near-level locations suitable for human habitation were found only on the "bars" which have been built up of recent sediments at the mouths of tributary streams. In the case of small creeks, these bars may consist of simple alluvial fans of boulders and coarse gravel and a shallow surface deposit of light-colored sandy silt on their downstream halves. Where two or more of these streams join the canyon within a short distance, especially if this occurs near a bend in the river, the individual boulder outwashes

have become joined together in a single large bar by an accumulation of river silts.

The structure of the bars is of special interest here because on them are located the greater number of sites recorded in the survey. As noted above, they have been built up by a combination of detritus from tributary creeks and river sedimentation. This basic aggradational structure has subsequently been subjected to cutting by first the river and then the tributaries. The river cutting has produced a series of terraces ranging in number from one to three or four depending on the size and total height of the bar. On the largest bars such as Pittsburg Landing and Dug Bar, these terraces represent differences in elevation of 50 to 100 feet. Across these terrace lines which are roughly parallel to the river, the tributaries have cut deep gullies. The recency of most of these gullies is attested by their near-vertical walls and by the fact that the bar surfaces frequently slope away from the gully shoulders.

Behind the bars, the tributary streams flow through canyon structures of their own. Small creeks with intermittent flow usually drain simple ravines which become progressively narrower and steeper. The larger, more permanent streams, however, have somewhat more complex canyons. They have cut trenches which are sometimes constricted at the mouth but which have been widened in their middle reaches. There, in a sequence analogous to that of the main canyon, these trenches have undergone limited filling and recutting of the fill.

Although occasional sites were found in these side canyons, their major archaeological importance was perhaps in their function of facilitating access to the Snake River canyon proper. They formed natural roadways for the aboriginal peoples who wished to enter or to cross the canyon. Several of such trails are known historically. The Nez Perce, for example, who wished to cross from the Wallowa Valley to the Joseph Plains came down into the canyon by way of Pine Tree Saddle, made the crossing at Dug Bar and began the ascent in a ravine opposite. Again, Curry Creek provided easy access to the crossing at Pittsburg Landing; Granite and Brush Creeks gave directly into the heart of the Seven Devils for those young Nez Percés who sought a Guardian Spirit visitation; and so on.

The structural features outlined above represent merely a regional variation of the structural pattern found generally in the Central Mountains physiographic subprovince (Freeman, et al, 1945, pp. 65-69). The topographic ruggedness which sets off the upper two-thirds of the survey area from the general pattern results chiefly from the presence of old mountain ranges projecting up into and interrupting the even extent of the Tertiary lava flows. The total effect has been a terrain harsh enough to effectively discourage permanent human occupation of the region. On this account, the region remained for the aboriginal population, an auxiliary to more hospitable environments.

The climate of the lower Hell's Canyon region presented a somewhat less austere facade than the topography. The summer months there are quite warm, diurnal highs in excess of 110° Fahrenheit being not uncommon from July through September. But, being protected from cooling factors, the

canyon floor may have temperatures 10° to 20° higher than those of any contiguous areas during the winter. This must have been a positive attraction for winter hunting parties.

Precipitation-wise, the region is semi-arid, and Merriam shows this area on the border between his Upper Sonoran and Arid Transition areas. Although he asserts that the true sagebrush is the prevailing vegetation (Merriam, 1898, pp. 25, 36; see also frontispiece map), sagebrush does not predominate in Hell's Canyon farther north than Homestead, Oregon, many miles south of the pool area. The bunch grass, which does seem to have predominated prior to the introduction of stock raising, corresponds more closely to the Arid Transition area described by Piper for Eastern Washington (Piper, 1906, pp. 47-49). The elevation brackets noted by Piper also tally with my observations of the extent of the grass zone. As both authors note for the Arid Transition, Yellow Pine forest begins in the Canyon within the limits of the grass zone, and above 4000 feet the forestation becomes general.

During periods of the year, the canyon abounds in a variety of large and small game animals. It seems certain that the following animals were included in the pre-contact fauna: Elk, mule deer, possibly whitetail deer; mountain sheep, possibly mountain goat; jack rabbit, cottontail rabbit, pygmy rabbit (?); beaver, porcupine, and so on. Predators such as mountain lion, wild cat, and coyote were also present. Although numerous species of migratory water fowl and upland game birds are seen in the canyon today, it is not safe to assume what their pre-contact distributions may have been.

It is significant to note here one feature of the migratory patterns of the elk and deer. The deer find it difficult to obtain feed once the first permanent snow has mantled the higher elevations so that they must move down into the canyon proper sometime during October in order to find browse. The elk are hardier and are not forced from the higher altitude until snow has accumulated to a depth of around two feet. The net result is that for a three or four month period during the late fall and early winter, large game animals are plentiful in the canyon and hunting is consequently excellent.

#### Aboriginal Occupation

The survey area lies nearly astride the physiographic boundary separating the Plateau and Great Basin Culture Areas. In this locale it is quite difficult to fix the limits of tribal territories with any precision because the aboriginal peoples of the southern Plateau and northern Great Basin thought in terms of proprietary rights applied in only very general areas and not within definite boundaries. (Fn: "Tribal" is used here in reference to linguistic and cultural affinity, not to political unity.) However, since the major physiographic barrier in the form of the Grand Canyon of the Snake and the Seven Devils and Wallowa Mountains lies on the southern margin of the survey area, it is legitimate to look to the north for the groups which may have occupied the region prior to its occupation by whites during the latter half of the Nineteenth Century.

The preponderance of evidence available to date indicates that the area, if not permanently occupied by, was regularly exploited by the Nez Perce Indians whose tribal home included the Clearwater River drainage, portions of the Salmon River drainage, the middle Snake River, and a good part of the Grand Rond-Wallowa area. Spinden, the earliest authoritative student of the Nez Perce, concluded that the boundaries of the Nez Perce extended as far south as the forty-fifth parallel which intersects the Snake River near Homestead, Oregon (Spinden, 1908, p. 172). Spinden's reference to the forty-fifth parallel, however, was based on Nez Perce occupation of the Wallowa region and did not make specific mention of the Snake River in that latitude so that direct information about the survey area is still lacking.

A source of indirect information is to be found in the distribution of Nez Perce bands. The eight Nez Perce bands listed below, when plotted on a map, form a semi-circle on the east, north, west and southwest sides of the area:

lantama--Band on Whitebird Creek.

\*lipexe--Band on Rock Creek below Whitebird.

\*pik'uninmu-- Band on the Salmon River at its junction with the Snake River.

sa?qanma--Band on the Snake River below the Salmon River.

imnama--Band on the Imnaha River.

wal?wama---Band which lived at Wallowa.

saiksaikinpu--Band which lived at Grangeville.

inantoinu---Band on Joseph Creek.

(Fn: Asterisks indicate bands not listed by Spinden. Orthography is my own.)

This list is adapted from both Spinden's work (Spinden, 1908, 174-175) and my own field notes collected in 1953. Further information in my notes indicates that at least two or three of these groups hunted at regular intervals in the Seven Devils Mountains, and thus very nearly closed the circle of Nez Percés around the survey area.

Negatively, no sources have been found which place any of the Shoshonean speaking Northern Paiute bands in the vicinity of the Mt. Sheep-Pleasant Valley reservoirs. Stewart limits his Salmon Eaters (koa'aga'itōka) to the general vicinity of Boise and Weiser, placing their maximum northern extent at the Wallowa-Grand Canyon of the Snake-Seven Devils barrier. Moreover, he notes that Paiute informants confirmed the Nez Perce as the northern neighbors of the Salmon Eaters (Stewart, 1939, pp. 133-134). The distribution given by Hoebel for the Northern Paiute groups, nonetheless, makes it more likely that the Salmon Eater-Nez Perce frontier was actually in the upper Salmon drainage and that the southern neighbors of the Nez Perce on

the Snake were the Mt. Sheep Eaters (ṛu' ku' ka) (E. Adamson Hoebel in Ray, et al, 1938, p. 410 and map, p. 411). This situation is more in line with local knowledge of ethnic distributions. It has been reported by local residents, for example, that the country on the Idaho bank of the Snake opposite Homestead, Oregon, was inhabited by a band of "renegade" Indians known simply as the Sheep Eaters. Local sources also knew only of Nez Perce north of this location. Their knowledge, of course, stemmed from a period when the movements of both the Nez Perce and Paiute had already been largely limited by white troops and settlers.

For the present, then, the area covered by the survey must be considered as definitely within the sphere of Nez Perce domination, both from the standpoint of accessibility and the provenience of known bands. It is doubtful whether the Nez Perce ever had any permanent year-round settlements in the area (although as will be seen later, there were also several small, at least semi-permanent communities still evidenced by a few house pits), but they most certainly did regularly exploit its economic potential. The proximity of the Northern Paiute bands, the Mt. Sheep Eaters and the Salmon Eaters, nevertheless, makes it equally certain that some cultural influences from the Great Basin may be expected. And for this there is a little archaeological evidence.

#### The Sites

Thirty-nine sites were recorded in the survey. These fell into five general categories according to their physical features and the materials collected from them:

(1) Camp sites--Occurred only in the main canyon, usually on a bar on the first shelf above the river in an open area sloping gently to the river; occasionally they were found on the second shelf, 75 or more feet above the river. They were without exception located on a fill of loose sandy silt which varied in depth from a few inches to several feet. There was always some source of water nearby other than river water, either a spring or creek. This type of site never exhibited very great stratigraphic depth, the greatest depth observed in cut banks not exceeding two feet.

The artifacts which helped to identify these sites were for the most part collected from the surface and consisted of assemblages of implements whose functions are associated chiefly with a hunting economy: projectile points, scrapers, blades, and a variety of choppers and cleavers which would have been most useful in butchering the kill and in preparing hides. Other implements were a pestle, stone hammers, abrading stones, and possible boiling stones. Perhaps the most abundantly found cultural materials were the tailings of chalcedony resulting from the manufacture of points and scrapers. Cracked rocks which may have been old hearths or sudatory sites were also occasionally seen. Freshwater mussel shells were frequently found; never, however, in sufficient concentration to constitute a midden area. On this point, Spinden also noted the lack of concentrated shell middens in Nez Perce territory during the course of his archaeological investigations there (Spinden, 1908, p. 177).



About twenty-three of the sites can be classed in this group. Of these, four are deserving of the more specialized designation, workshop. The surface collections from these yielded only large quantities of the tailings mentioned above and had no other indications usually associated with a full camp site. Two other sites possessed house pits in addition to the regular attributes of the open camp and thus deserve to be discussed in the section dealing with housepits, and another pair had one or more cairn burials in connection with them. Possibly even more sites belong in this category but the burials were not located. Spinden noted that the Nez Perce usually buried their dead within sight of their camp (Spinden, 1908, p. 173).

The sites are as follows:

Camps: 10-ID-1, 2, 3, 4, 5, 8, 10, 15, 16, 17;

35-WL-2, 3, 5, 6, 7, 8, 9, 10, 12, 14, 15, 16, 19.

Camps with burials: 10-ID-16; 35-WL-12.

Camps with housepits: 35-WL-14, 19.

Workshop areas: 10-ID-1; 35-WL-7, 8, 16.

(2) Housepit sites--Nine sites were found whose main features were housepits. These sites were not extensive in area nor in number of pits and all except two or three had only one to five pits still in evidence. One site, 10-ID-14 had fifteen or more pits within a very limited area, but only four or five of these were still distinct, the remainder overlapped one another. This last area is probably the one locale in the whole area most demanding of further investigation for the reason that it offers the possibility of demonstrating stratigraphic superposition of several housepits. Nowhere else is there sure evidence of a stratified deposit. Moreover, the pits at 10-ID-14 are directly on top of and intrusive into a thick layer of reworked volcanic ash which may be a means of fixing a terminus post quid at least for housepits in the area.

Housepit sites were located both on bars in the main canyon and on small flats in the canyons of tributary streams. The form of the pits in all cases was circular and they were fifteen to thirty feet in diameter. There was a rim of earth around the circumference approximately twelve inches high, and since most of the pits were cut into slightly sloping ground, the rim was limited to the downhill side of the pit with the hill itself forming the opposite semi-circle. The centers of the pits were depressed to a depth of from one to three feet below the level of the rim, the present depth of any given pit being directly proportional to the degree of erosion to which it has been subjected.

The elongated oval or sub-rectangular house pits noted by Spinden in his investigation of sites on the Clearwater and Middle Snake were not found in this area. It is quite possible, however, since most large bars have been subjected to long and intensive cultivation and stock grazing, that previously existing pits have been obliterated. This has certainly been

the case at a number of the larger sites reported here as camps. One or two informants have reported that circular housepits (one case of a possible rectangular pit) existed in their parents' time at places where none can now be found. Even so, it is probable that elongated pits were never numerous in this reach of the Snake River since they imply occupation by larger groups. It is doubtful that the absence of the elongated pits has chronological significance although there is not yet enough evidence to make a definitive statement. Spinden felt that the circular pits at Kooskia were old even though he found a trade bead in one; but he made no temporal distinction between the two forms (Spinden, 1908, p. 180).

From the standpoint of artifact collections made at housepit sites, they are definitely marked off from the camp sites. Negatively, very few implements of primary importance in hunting were found in the vicinity of pits. That is, projectile points, scrapers and blades of chalcedony and the tailings associated with their manufacture were exceedingly rare at these sites. The most significant finds were a mano and two or three metate fragments in direct association with housepits. These are especially interesting since they are not typical of the Plateau area but fit more properly into the cultural pattern of the Great Basin. Other artifacts include abrading stones, basalt flake cleavers and scrapers, and cobble hammers.

The housepit sites are 10-ID-13, 14, 19; 35-WL-18, 20, 21. As previously noted the pits at 35-WL-14 and 19 were in association with open camp sites.

(3) Rock shelters--The amorphous structure of the metamorphosed paleozoic rocks in most of the surveyed portion of the canyon were not as productive of caves and rock overhangs as the evenly bedded Tertiary flows of the Lower Snake and Columbia have proven to be. A number of sizeable overhangs were investigated, but they were located in such precipitous localities that they generally lacked floor areas. Two very small shelters were finally located. The overhangs at these sites were six feet and ten feet deep and twenty-five to thirty feet long. The area of occupational debris, however, probably does not exceed fifty to sixty square feet in either. They were both in rock faces fronting on the main river and near small creeks with intermittent flow.

One of these sites, 10-ID-12, had a rim built up in front in a manner analogous to the rims of housepits. The deposit there, while limited in extent, was quite rich in cultural content. A small area troweled out on the outer lip of the rim proved to be a mass of cracked bone, mussel shell, charcoal and cracked rock. An artifact lot including seven points, an abrading stone, an arrow shaft smoother, two scrapers and a piece of worked bone was removed from this matrix. The points are interesting because three of them are obsidian, a material not native to this region, and they constituted a majority of the obsidian artifacts found in the survey. Two of the obsidian points are triangular and are notched laterally, with a single central basal notch, a trait most frequently associated with Paiutes. The interior deposit of the shelter at 10-ID-12 yielded burnt bone, shell, chalcedony flakes, and powdery ash to a depth of twenty-two inches.

The rock shelter sites are 10-ID-12 and 18.

(4) Burial sites--Only two sites were recorded in which burials were the principle feature. Numerous isolated cairn burials were found scattered throughout most of the survey area, but they were not recorded as sites unless they occurred in clusters. Three sites recorded as camps or house-pit sites were found to have burials in conjunction with their other features so that the total of burial sites is five. Undoubtedly there are numerous burial sites which were not recorded because they were obscured by vegetation, damaged by farming or mining, and so on.

The burials appeared on the surface as circular cairns of basalt boulders about three to five feet in diameter. They were nearly level with the surface of the ground and frequently were slightly depressed in the center. They were located in the sandy silt of bars in the main canyon. One cairn was opened at 35-WL-13. It was five feet in diameter and depressed in the center. There were two layers of large basaltic rocks with the skeleton immediately below. The bones were badly disintegrated and only the two tibial shafts remained intact. From their position, a semi-flexed position could be inferred for the interment with the skull probably oriented toward the river. Sterile earth was encountered at twenty-two inches. No artifacts were found, but three badly corroded metal fragments were recovered.

Several looted cairn burials were seen and they followed the pattern described above. Several informants who had opened similar burials previously, asserted that the pattern was the same and that no artifacts had been encountered. This is one of the forms of burial that Spinden reported for the Nez Perce, but the talus slope interment which he also mentions was not found here (Spinden, 1908, p. 174). No informants reported talus slope burials for the survey area.

The burial sites are 10-ID-11, 15, 16; 35-WL-12, 13.

(5) Special features--Several features which were quite limited in nature and which could not be assigned to any of the above categories, were also recorded as sites. These sites will be dealt with individually in this section.

10-ID-7--This site is located in Curry Creek canyon approximately two-and-one-half miles from the confluence of the creek and the Snake River. It consisted of a lensatic concentration of large, ovate basalt scrapers exposed at a depth of between eighteen and twenty-four inches. The find was made on an open shelf in the crotch formed by Curry Creek and a dry creek joining it on its right bank. The edge of the concentration was exposed in a cut bank, and a hastily dug test pit uncovered a cache measuring fifteen inches long by twelve inches wide by four inches in thickness. The long axis of the heap was oriented east-west and on its northern border was a fragment of mandible of an unidentified ruminant. The mandible fragment was upright with the three molar fragments uppermost, and its lower edge was level with the top of the artifacts.

There were thirty-seven of the implements in toto, and five stone fragments which may have been blanks. The majority were ovate in plan, measuring approximately three inches by two inches in length and breadth and five-eighths of an inch in thickness. They were bi-faced, that is,

worked on both faces; most were keeled on either one or both sides. The materials represented were a wide range of igneous rocks, varying from basalt to andesite and diorite. The technique of manufacture was percussion flaking, the flaking scars being large and irregular. Crude though the artifacts seem individually, there is a remarkable uniformity of shape which demonstrates a considerable degree of control of material on the part of the craftsman.

The find is remarkable because the implements are not of a common type and because of the situation of the site. Its situation is unique because of the stratigraphic depth and because the fill is a semi-consolidated soil rather than the loose sandy silt common to a majority of the sites. A second test pit three feet square, dug immediately adjacent to the first to a depth of twenty-nine inches, uncovered only a single point eighteen inches below the surface. Another one of the scrapers, identical to the norm described above, was found at 10-ID-4, a large site near the mouth of Curry Creek and on the Snake. It had been uncovered apparently by an irrigation ditch cut across the site.

10-ID-9--This site comprised a two-basin hearth exposed in a creek cut-bank. The hearth was a one inch layer of charcoal extending horizontally forty-eight inches, and was approximately fifteen inches below the surface. The two shallow basins in the charcoal layer were about four inches deep and eighteen inches across. Situated within one of the basins was a basalt flake knife which is unique in form and workmanship. The deposit was a lightly compacted soil overlain by six inches of aeolean sand.

35-WL-11--This site was similar to 10-ID-9 in that it comprised a hearth exposed at a depth of eighteen inches in a cut-bank. It is unique in that the charcoal layer directly overlay a deposit of reworked volcanic ash similar to the ash deposit reported for 10-ID-14.

35-WL-4--Another site exposed in a cut-bank. Broken bone and cracked rock were found weathering out of a level at a depth of thirty-one inches below the surface. The bones probably belonged to individuals of the Cervus family.

10-ID-6--This was a petroglyph site. Three boulders which had been cleansed of their fungus cover were found in an alluvial fan. Simple line sketches had been pecked into the cleansed surfaces to a shallow depth. There was only one simple figure on each boulder, but photographs showed that they had been previously painted with other, more complex designs.

### The Artifacts

With one exception, the artifacts collected on the survey were of stone. The explanation is that the collections were made for the most part from the surface. The exception, a small piece of worked bone, was recovered from a depth of six inches in a rock shelter. It is apparent then, that while the material culture of the aboriginal occupants probably included many items of bone, wood, fibre, hide, and so on, conditions of

weathering have prevented them from surviving except in well protected locations. Nevertheless the residual group of stone tools reveals a great deal about the economy of the Indians who occupied the area.

In general the artifacts did not differ in type or material from those collected by Mr. James Chapman throughout the Nez Perce area. The quality of workmanship, however, was distinctly poorer which is a probable correlate of the temporary residence pattern evident in the survey area. Indeed many implements seem to have been crudely roughed out for only one or two usings and then discarded.

The stone artifacts can be grouped into two major categories according to the material of which they were made. The first group comprises those implements made from stones with a conchoidal to sub-conchoidal fracture. These are most generally the cryptocrystalline varieties of quartz which are frequently grouped under the term "chalcedony." They include true chalcedony, agate, jasper, prase, plasma, chrysoprase, flint, chert. Other materials which were found and must be included in this category are such minerals as rhyolite and extremely fine-grained basalt, although these form a very small minority. Obsidian was also encountered, but its incidence was so rare as to be negligible, and it certainly represents an imported material into the area. Implements manufactured of these materials include points, scrapers, and blades. They are small in size, few being over two inches in any dimension. The technique of manufacture is predominately percussion chipping with some pressure flaking evident.

The second group of stone artifacts includes those implements which were manufactured from a variety of materials which can be collectively called trap; that is, dark fine grain rocks such as basalt and dolerite. Coarser grained igneous and plutonic rocks such as granite, diorite, porphyry also occurred but less predominantly. With regard to the manufacture of tools in this category, one is tempted at first to label the technique as being crude and lacking in control. This impression results from the extremely large number of provisional, for-one-use-only tools encountered. Actually these represent a refined technical knowledge in themselves. To be able to readily find a rock of proper texture and shape, and then in one blow, to be able to strike off a flake knife or scraper possessing a satisfactory working edge, evidences a degree of control. Nevertheless, practically no tools were found which had been as carefully and well made as those one finds in the more centrally located areas in the Plateau.

The artifacts in this second group include hammerstones, abrading stones, cleavers and choppers, knives, scrapers, pestles, a mano, metates, and an arrow shaft smoother. They range in technique of manufacture from unmodified flakes and cobbles to a pestle fully shaped by pecking process. Generally the technique is percussion chipping and flaking.

As can be seen from the inventories of tools found in each of the two groups, the first is limited to implements almost exclusively associated with hunting. The second group possesses some tools of primary importance in hunting, but it also includes artifacts associated with other activities such as the manufacture of tools and the processing of plant foods. It must be noted here that few, if any, of these artifacts can be included in a single-function category. They were all adaptable to several different uses.

There follows here a short review of the artifacts according to categories based on their form and function. The function is implied by the form, of course, and is frequently in doubt, especially in the case of multiple-use implements.

The first category of artifacts is one which today is most often termed simply "points." Of the points in the collection some are undoubtedly projectile points; others, because of heavy median ridges are presumably drill points; still other could possibly have functioned as scrapers or small cutting implements. Nineteen of the points collected are non-stemmed. They are predominantly triangular in form, but several demonstrate a more or less ovate form which may be called variously rounded triangular, leaf shape, or triangular with convex base. Of the triangular group, straight, convex and concave bases are represented, and there appears to be a slight predominance of an equilateral triangular form over the more elongate triangle. Three of the non-stemmed points are of basaltic material, two are obsidian and the remainder are of chalcedonic materials. The flaking scars produced in manufacture are coarse and uneven, and the forms of the points are highly variable within the limits of the category.

A second sub-group of points, comprises those with a "caudal appendage" which is not distinct from the body. The incipient stem in these cases was produced when the body of the point was indented or "notched" to facilitate mounting on a shaft or haft. Eleven points have been assigned to this type, six with corner notches, four with side notches (two of these also possess a central basal notch), and one with basal notches. In several cases, of course, it is a moot question whether a corner notch is actually located in the corner angle or along the base; the question is purely an academic one. The major body shape is again triangular, although one of the points is obviously a non-stemmed "leaf-shape" with two small notches inserted near the butt. The stem-bases produced by the notches are broad and either straight or convex with the exception of the two points with single, central basal notches. Two are of obsidian (those with side-basal notch combinations) and the rest are chalcedony.

The third sub-group of points include those with definite stems distinct from the body of the point. There are only two of these, both chalcedony. One possessed an obliquely angled shoulder and a broad, square stem; the other has an acute shoulder angle and narrow stem with convex base. The latter is extremely small and is of the type generally referred to as "bird-points."

All of the points are small, being less than one inch in length (the one exception measures nearly two inches). They are heavy in section, however, which correlates with the coarse workmanship. Only about a half dozen of the total number of points demonstrate fine, regular flaking and have thin sections resulting from deliberate, careful workmanship.

The scrapers collected can be divided into micro- and macro-scrapers on the basis of size. The size division follows the material division discussed above. Chalcedony scrapers are all quite small, none being as much as one inch in its greatest dimension. For the most part, they are flakes with a working edge produced by secondary retouch and lack special

shape characteristics. Five were found that were purposively shaped, however. Two of these are more or less circular "thumbnail" scrapers; one is an eccentrically ovate side scraper; and two are U-shaped end scrapers. There are besides, several questionable artifacts which may have been either end scrapers or butt fragments of blades.

Basalt scrapers were mostly simple flakes removed from cobbles and used with a minimum of retouch. They varied greatly in size and shape, although they usually exceeded a two inch diameter. Depending upon the accidental shape which they assumed, they may also have served as cleavers or knives. A group of thirty-seven basalt scrapers which do not fit into this pattern were found in a heap, eighteen to twenty-four inches below the surface at site 10-ID-7 (see section on Special Features). They were nearly all ovate, measuring three inches by two inches by five-eighths of an inch on the average. They were bi-face and either single or double keeled. The flaking was coarse and irregular, but the overall form was relatively uniform. One more of this type was found at a neighboring site.

No complete blades were found in the survey. A large number of fragmentary implements were found, however, which appeared to be the pieces of blades. They included portions of what were presumably the tips, butts, and central sections of knives. These fragments indicated that the blades must originally have been four to five inches in length and about one and a half inches in width. They were worked over all their surface and had an elongated shape, pointed at one end and rounded at the butt, and lacked a shoulder or other irregularity in their shape. Whole specimens conforming to this general description were noted in the collection of James Chapman. As noted above, some of the butt fragments may actually have been intended as end scrapers and were thus complete, not fragmentary, implements.

It must be mentioned here that one complete knife of basalt was found weathering out of a cut-bank at a depth of about twelve inches (see section on Special Features). It was five inches by two and a quarter inches, the greater width (which was formed by a definite shoulder) was nearer the point than the butt. It was worked on one face only, the opposite side being the unretouched, natural surface of a cobble.

Another group of basalt flake and core implements must be classed as choppers and/or cleavers because of their greater size and weight, and because of the presence of a long, straight or curved cutting edge. There were eleven of these collected, and numerous other crude examples were seen but not collected. These were usually made from a heavy flake struck off a river cobble. They were ovate to circular in plan and sometimes possessed a bulb of percussion. The edge formed by the fracture was trimmed of irregularities either all the way around the implement or half way around on the edge opposite the bulb of percussion--which suggests that the heavier section of the bulb was used as a grip. In a few cases, it was apparent the tool had been worked down from a core or complete river pebble. They averaged from three to five inches in diameter, a few being much larger. Numerous flakes were found which had been used for cleavers (inferred from battering and chipping along a cutting edge) but which were unretouched and had eccentric shapes.

By far the largest category of artifacts reported by the survey were hammerstones. Great numbers were seen in the field, but since they consisted mostly of natural cobbles with battering on one or both ends, only a sample was collected to demonstrate preferred shapes. The greatest number consisted of elongated, slightly flattened river cobbles, five to ten inches in length. A very few truncated stones occurred in which the width was greater than the length (dimension in a plan perpendicular to the battered surface). There seemed to have been a definite preference for a special form in which a very large, elongated and flattened cobble was broken in half, the fractured end presumably being used for a grip and the remaining end being the striking surface. Seven of these were collected and many more observed in the field. Occasionally in this form, there were two flakes removed from the end, one on each side, with the result that a sharp edge was produced. This would have been an effective chopper for boning, etc.

Two pestles were found. One was a simple elongated conical shape, about eleven inches long and three in diameter. Its surface had been almost entirely finished with a pecking or abrading process. The second pestle was in preliminary stages of manufacture. It was truncated (about 6 inches long) and had been roughed out into an irregular cylinder by the removal of longitudinal flakes running the length of the tool. One end showed evidence that it had already been used. A pertinent note here is that no mortars were found. This is not unusual since it is very likely that basketry hoppers were known to the Nez Perce and could have been used over any handy flat rock.

One mano was found. It had a single grinding surface which had been worn on the flattened side of a cobble. The sides of the cobble had been lightly trimmed, but the turtle-back grip was formed by the unworked side of the rock. This implement was found in the immediate sub-surface of a housepit.

Two metates were discovered, the one which was small enough to collect being recovered near the housepit from which the mano was recovered. This latter metate (a fragment representing about one-third of the total artifact) was a flat slab of porphyry two inches thick and eight inches across its greatest dimension. The grinding surface was flat, no sort of a basin being evident. A second metate was seen, again in close association with a housepit, which was formed from a boulder. The sides and bottom of the boulder had been trimmed and a shallow elongated depression had been worn in the top. This object was six inches high and twelve inches across its greatest dimension (this was also a fragment which represented about half of the complete item).

The last category of artifacts is represented by a single implement. Two fragments of an arrow shaft smoother were recovered from the dump deposit outside of a small rock shelter. The tool had been made from scoria and measured two inches long by three-quarters of an inch wide. It was badly worn and eroded but it could be discerned that the form had been hemi-cylindrical with a longitudinal groove on the flat face. Several of these were seen in the collections of James Chapman.



One type of artifact was conspicuous by its absence. The grooved cobble and bilaterally and quadrilaterally notched pebble net sinkers so common on the lower Snake River seem to be entirely lacking. A possible explanation is that fishing was not very good in the canyon above the Salmon and Imnaha Rivers, and therefore hunting was the primary attraction in the area.

### Interpretations

The data recovered in the reconnaissance of the Mt. Sheep-Pleasant Valley area certainly do not warrant any sort of definitive statement about the nature of the aboriginal cultures there, especially since the stated aim of the survey was to determine what further archaeological work should be done. Nevertheless, the data do permit certain general observations to be made.

First, the settlement pattern was undoubtedly of a highly temporary and transient nature. The predominant type of settlement, the open camp, lacks not only significant concentrations of artifacts, but also midden deposits. Still, there were possibly a few small semi-permanent settlements as represented by the housepit sites. There were definitely more of these settlements originally, but all trace of many of them has been obliterated by farming and mining. Although there was a quantitative difference in the artifacts found in these two types of sites, there is nothing which suggests that they were not contemporaneous in time. The mode of burial common to both of them was the shallow stone cairn, the body being interred in a flexed or semi-flexed position with a minimum of grave goods.

The artifacts demonstrate that subsistence patterns were heavily reliant on hunting, probably of large game animals. There are also suggestions of the use of plant foods, probably those reported for the Nez Perce--i.e., roots (camas, kous, čawit) and berries. Shellfish seemed to have formed a minor dietary item, and as yet there is no indication how much reliance was placed on fishing.

Inter-areal relations are indicated by the presence of artifacts made from a non-native mineral, obsidian. Eastern Oregon seems the most likely source for this material. Finally, nothing was discovered which in any way sets off the aboriginal culture of this area from that of the Nez Perce and other Sahaptin areas of the southern Plateau.

As regards temporal affiliation, the cultural deposits occurred either on the surface or within six to twelve inches of the surface. They were in a loose sandy silt fill which for the most part lacked the coloration and refuse concentration of true midden deposits. Only the remains discovered at sites 10-ID-7 and 9, and 35-WL-11 suggested real stratigraphic depth. Moreover, they occurred in semi-compacted soil instead of loose silt. Nevertheless, the majority of evidence indicates that the known prehistoric remains from the survey area must be given a relatively recent date. However, an end date for regular aboriginal occupation and utilization of the

area must be set at 1877. During that year the southern Nez Perce bands left their homeland as a consequence of the Nez Perce War, never to return.

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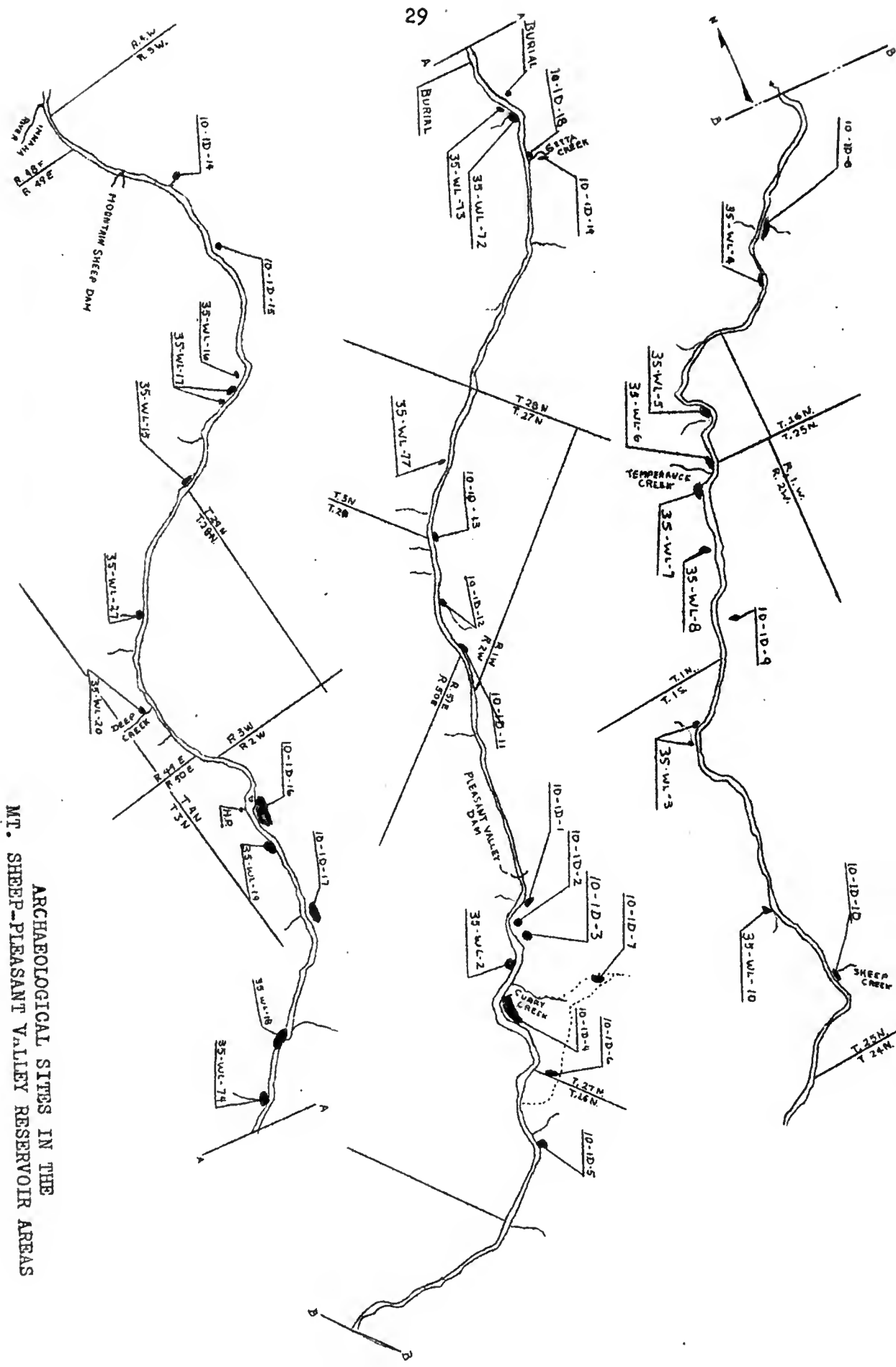
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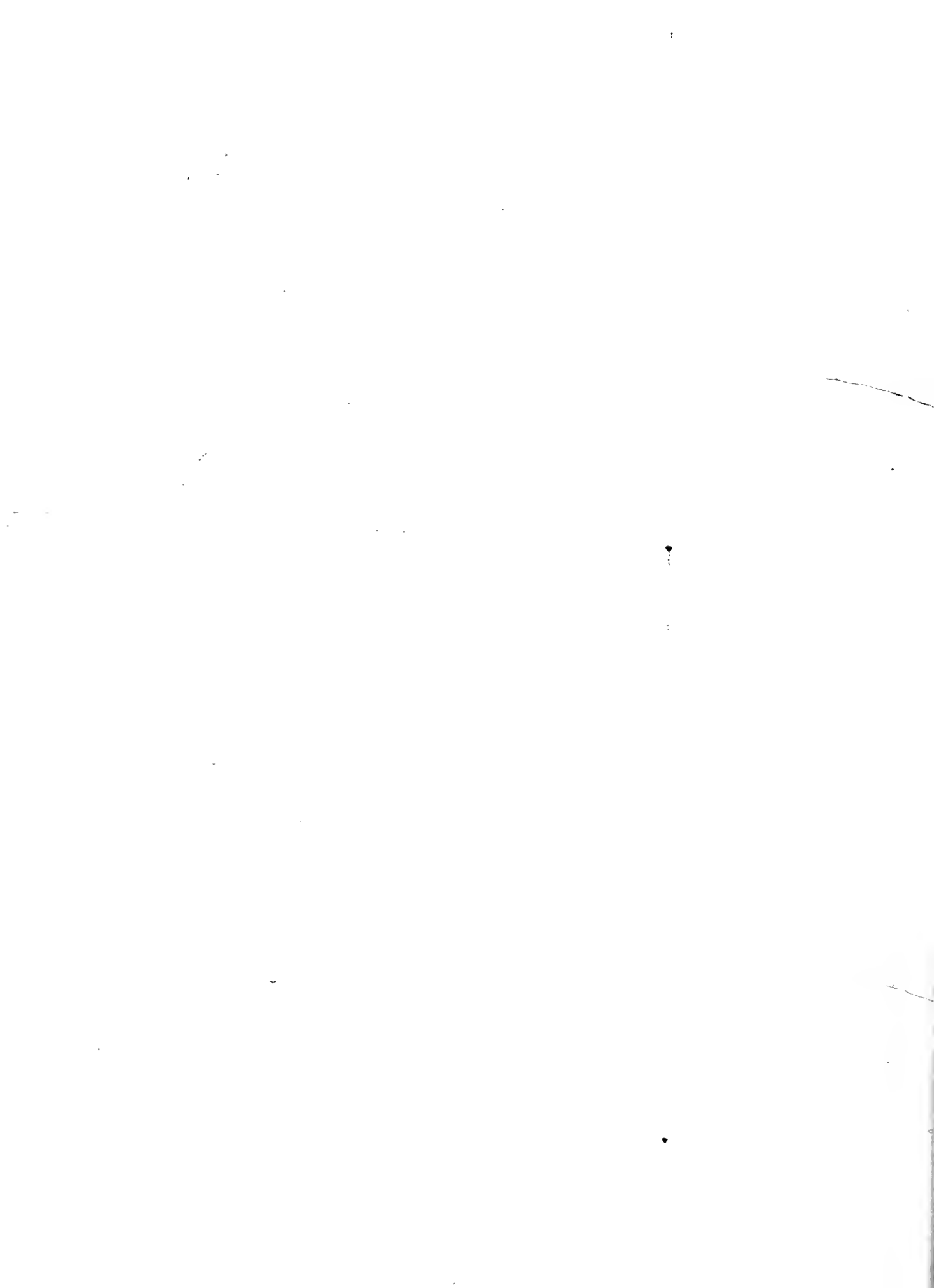
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ARCHAEOLOGICAL SITES IN THE  
 MT. SHEEP-PLEASANT VALLEY RESERVOIR AREAS





## ARCHAEOLOGICAL BACKGROUNDS OF PACIFIC CULTURE

Douglas Osborne

Studies of the prehistory of the Pacific Islands are primarily concerned with inter-island migrations and with the growth and history of man's adaptation to an unusual and far-flung domain. Most of the migrations obviously depended on use of developed water craft. With the exception of Australia-Tasmania all major groupings of the peoples of the Pacific were agriculturists with domesticated animals. All of their important food plants, with the exception of the sweet potato, are of Asian or Southeastern Asian origin. We have to do, archaeologically, with the cultural remains left by a people who did not fear the seas and who knew how to farm and keep animals.

For the present purposes Oceania will include all of the island worlds of the Pacific, excepting only Indonesia, plus Australia and Tasmania. It is impossible to discuss any phase of Oceanic science, intelligibly, in terms of Melanesia, Micronesia-Polynesia, and Australia-Tasmania as separate units. The vast waterways of the Pacific have not been immutable and interareal influences and movements have been numerous.

By the same token Indonesia, although not a primary part of our discussion, cannot be left out of the picture. It is from these islands and peninsulas, that animal and plant life as well as humans and their varied cultures and languages have flowed into the Oceanic world.

The story begins at the ending of the tropical Pliocene and the onset of the glacial age (Pleistocene) in Southeast Asia. It was complicated by movements of the earth's crust which resulted in the formation of mountains which, in turn, led back to climatic and animal and plant change. These changes led or forced the men of the time, who had a crude culture based on stones, small cobbles flaked to a chopping edge or on hand axes, to alter and adapt their cultures in many ways.

As more and more of the earth's waters became locked away in the great continental ice sheets the seas became lower. The ocean level must have been around 200 feet lower than it now is at the maximum of glaciation. The lowered waters made available many routes of movement outward into and through the islands of Indonesia to the farther islands of Melanesia and eventually to Australia. Men could walk dry shod over areas that are now shallow sea and swim or raft himself across the deeper straits. Not only man, but many other mammals from the Malayan area, moved out into what are now island regions. Fossil forms of man, such as Pithecanthropus and his relatives are no doubt shreds of evidence of these early migrants of a half to three-fourths of a million years ago.

Even after this earliest period the movements of peoples and cultures to and within Indonesia continue to be largely unknown to us. During what is called the Mesolithic or "middle stone" cultural period peoples who hunted and fished and ate shellfish chipped small stone tools and probably made bone, wood, and shell weapons and ornaments, spread widely throughout the archipelago. The period during which they came, and during which their way of life was dominant throughout Indonesia, Melanesia and Australia-Tasmania is not known. It must have ended at the very latest in western Indonesia around 2500-3000 B.C. when a more efficient cultural system, and no doubt migrating peoples, began to spread east. The Mesolithic has lasted on farther to the east, away from the competition of the later Neolithic peoples and while a part of it died with the dying Tasmanians in the mid 19th century, it still lives in reservations and in isolated parts of Australia.

Neolithic (New Stone) changes revolved around the addition of pottery, agriculture, domesticated animals, techniques of abrading, grinding and polishing stone, axe or adze blades that were often rectangular in cross section (quadrangular), adequate boats or canoes, and the use of massive stone in building and sculpture to the old Mesolithic base. The Neolithic is still the way of life, or was until it was altered by European-American penetration, of the peoples of Melanesia and Micronesia-Polynesia. Indonesia is, from our point of view of the island worlds and Australia, a series of stepping stones from Southeast Asia.

Australia-Tasmania, if we may judge from the Mesolithic cultural level of the inhabitants, was settled relatively early, probably during the maximum of the last glaciation, and then became sufficiently difficult of access from both north and northwest so that there was no further penetration until the Neolithic and later boatmen who touched its shores. These were either New Guinea Melanesians or Malay traders. They brought many new items and concepts with them and these were diffused, altered by the Australian aboriginal culture and its needs to the south. This process was still in action when the English settled the island continent. Tasmania may well have been linked by a land bridge to the larger land mass during the ebbing of ocean waters in glacial times. If it was not it was apparently easily available by rafting. Tasmanian archaeological culture history is not well understood but the links that do exist point toward the Australian rather than the Melanesian areas. Strong comparisons between worn chipped scrapers or adze blades (Burren slugs and Tula adzes) of Tasmania and Australia form a sound base for stating archaeological relationships.

In Australia there are no early or Mid Pleistocene cultures. The finds of so-called Paleolithic implements in Australia are very possibly late evidences of the general archaic Australian stone chipping industry. Certainly they post-date, by many tens of thousands of years, similar material from Indonesia. Finds of skeletal remains have been made under circumstances pointing toward great antiquity. The Cohuna and Talgai skulls, while different from the modern Australians do not vary so greatly from the Australian norms that they should be considered as anything but ancient members of that stock. Australian prehistory falls readily into inland and coastal sections. The inland are fairly well known but depend upon surface collections so their chronologic relationships cannot be well understood. A few coastal sites, on the other hand, are deep middens (Devons Downs). These have yielded longer period sequences and offer the best hopes of arriving at time sequences for both coast and, through comparative studies, for the interior.



The general types of many of the stone tools found indicate a definite relationship with wide spread Indonesian (Java, Celebes, Malay Peninsula to Indo-China) and Melanesian cultures on the Mesolithic level. Specifically the Hoabinhien I of Indonesia and its pebble choppers, cores and hammerstones are similar to those tools of Southeast Australia. In Eastern Australia the tools point toward later Hoabinhien phases. The later Neolithic Bacsonian biface choppers and edge-ground adzes are also obviously related. These typologic connections are primarily between the older cultures of South Australia and the old Mesolithic of Indonesia. This is explained by the fact that later Neolithic influences which penetrated from Indonesia and Melanesia had their greatest effect in the north and did not reach the south until late, if at all.

Most intriguing of the old Australian stone industries is the microlithic (small stone). Small, even tiny, chipped blades and other pieces are found in great abundance, primarily on inland sites in the Southeast, West and Central parts of the continent. These small tools are a world wide aspect of the Mesolithic and are certainly specifically related to certain complexes in Indonesia and perhaps in Ceylon. In the stratified site of Devons Downs, which has numerous superimposed layers containing six differing assemblages of stone tools, there are found in later contexts, leaf-shaped large and small (pirri) and serrated projectile points which equate with similar weapon points from Mesolithic sites of Java and the Celebes. The ground axes do not occur in older strata. They have come in later, probably from New Guinea, as an aspect of diffused Neolithic techniques. The quadrangular adze of the Neolithic (rectangular cross section) never reached Australia.

It may be safely stated that the problems of Australian prehistory are not isolated but are an integral part of those of Southern Oceania-Indonesia. The roots are deep in Southeastern Asia. The best possibilities of tracing Australian prehistory seem to be in tracing associations of local archaeology with recent physiographic and geologic manifestations, in finding material that is datable by radiocarbon analyses and in working out relationships with Melanesia and Indonesia on the Mesolithic level.

Melanesia, the land of the Oceanic Negroids, was obviously settled before Australia-Tasmania: first by a slow spread of Mesolithic cultures and of a generalized Australoid type of population and, later by Neolithic cultures and, presumably, predominately Negroid populations. Mixtures of the two racial groups were extensive. The results are discernable in the Papuan types.

Archaeological work which involves more than simple description and speculation has been wanting in Melanesia until relatively recently. Island masses are large, sites are often difficult of access. Remains that are attributable to the early movements into and through the area (Tasmanoid-Negrito and Australoid) are lacking. This is probably due to the fact that most of such Mesolithic (and Paleolithic, if such there were) settlements would have been near the water. The water level was then up to 200 feet lower than it is now. Hence the rising post glacial waters would have drowned the major share of earlier remains. This would be also true of other areas of Oceania. Certainly these flooded sites conceal a long and interesting history. Melanesian physical types, and linguistics, are as complex as those of any part of the world. In this connection it is worthy of note that the greater exposed land masses of the region during the Pleistocene no doubt resulted in a greater

dryness, possibly in extensive aridity. It may be supposed that large parts of interior Australia and perhaps the southern aspects of most of the large islands were arid. Areas along rivers would thus have been preferable living places and river valleys may now contain sites of great interest buried in alluvial deposits. The fossilized Australoid Aitape man was found in such a situation in New Guinea.

An intriguing aspect of Oceanic Neolithic culture is the trait of Megalithic constructions. These large stone forms include platforms, walled areas, heroic human and animal figures, etc. They can be certainly traced to South-east Asia in local origin but our picture of culture growth and spread in the Melanesian Neolithic lacks focus and does not enable us to follow the development and change of the Megalithic there. The concentrated distribution of Melanesian megaliths is in eastern New Guinea and adjacent islands. This leads to a conclusion that migrants, or diffusion of large stone building traits must have come by sea from Indonesia, either directly, or secondarily from Micronesia in the North. The second possibility is the less probable. It is probable that the large stone mortars, pestles and large adze blades of highland New Guinea which are of unknown cultural affiliation belong to this aspect of Melanesian Neolithic. If so it may be suggested that they represent a different economic orientation than the present taro, yam and sweet potato growers of the region. Perhaps grains (rice?) or seed-foods were important there at one time. A seed or grain dependant culture would be more fitting in a dryer area and era.

Controlled excavations in Melanesia have indicated an older Mesolithic occupation. So far the sites excavated have been caves or shell heaps along the ocean. Their connections with certain older Australian manifestations and ultimately with Southeastern Asia have been noted. Recent examination of Neolithic sites has begun to place the cultures of Fiji and New Caledonia in perspective.

In Fiji certain sites have yielded both time depth and radiocarbon samples for dating. Three levels of cultural change appear: an Early with pig bones, chicken (late Early) and potsherds showing relief decoration; a Middle level in which dog bones were first found and in which plain pottery prevailed (this is possibly a local transitional culture); finally the Late, upper levels which were characterized by heavy shell concentration previously lacking, and by incised pottery. There were too few shell or stone artifacts (adzes) to give evidence of cultural change from older to more recent times. Radiocarbon dates place the early period around the time of Christ and for perhaps a few centuries thereafter; the Mid-period lasts through the 7th to 10th centuries A.D., and the Late period on until the 14th. Pottery relates to the West, into Indonesia. Certain Borneo and Sumatra potsherds are similar to the relief material from Fiji, the incised pottery finds close parallels in Philippine Iron Age wares. New Caledonian excavations have not been reported but radiocarbon dates are available. Dates run from an average of about three thousand years ago to within the last few hundred years. Therefore Neolithic, agricultural, pottery makers had penetrated into the eastern Melanesian island groups perhaps as early as a thousand years before Christ. From there and from central Melanesia their influences spread meagerly south to Australia, rather more east to southern and western Polynesia and north to an uncertain extent into the Carolines of Micronesia.

Micronesia and Polynesia are best treated, here, as a unit. They are related culturally and linguistically on the modern level; these similarities reach back, presumably, into the period of settlement. Because of the cultural, racial and linguistic differences it is generally accepted that the major migratory movements of the ancestral Polynesians were from Indonesia, into western Micronesia, then, by an island to island exploration and settlement movement the whole vast area of Polynesia became settled and variously exploited. Anthropologists hesitate to state that all plants and food animals were brought by the long route through Micronesia, the Gilberts, and into the central, nuclear, areas of Polynesia (Society Islands). It is possible that some of the animals, plants and agricultural practices of Polynesia are the result of diffusion from Melanesia, possibly from Fiji to Tonga to the Society Islands. Polynesian navigators radiated outward from the Society group and this secondary group of migrations resulted in the settlement of all of the available and usable islands.

It is not possible to consider historical chronology in Polynesia without considering the information derived from the genealogies. Special persons committed long lists of important chiefs and chieftanesses, their issue and adventures, to memory. If we presume that these lists are reasonably correct, and assign something between 25 and 30 years to a generation, we can work out a chronological framework for the later period of Polynesian movements. Hawaiian genealogies go back 44 generations, placing the probable first settlement of those islands, by that method, in the 9th or 10th centuries A.D. Several names from the 11th and 12th and another in the 14th probably mark two more important contacts between Tahiti, the Hawaiian homeland, and the Hawaiian group proper.

The Hawaiian Islands, well out and north of the more obvious island-chain trails, appear to have been one of the last major island groups to have been settled. The earliest radiocarbon date is 1004 A.D. Obviously early remains found on Necker and Nihoa Islands, in the central part of the group, differ greatly from the later, classic, Hawaiian culture. Stone images on the Necker maraes (ceremonial paved court with alters, etc.), and the simple maraes, with terraced platforms and dike prism monoliths are unlike the diverse later ceremonial centers on the larger islands (Heiaus). No doubt the earlier maraes were made on the larger islands but they have probably been removed for reuse as building material in later times. Some of the artifacts, adze types, stone bowls or mortars, etc., are unlike finds from historic or late Hawaiian culture. Agriculture does not appear to have been strongly developed on these inhospitable islands and their occupation may mark an earlier period before the migrants to Hawaii from Tahiti had been able to exploit the agricultural possibilities of the large islands such as Oahu and Hawaii. The Nihoa-Necker culture as a whole is related to that of old Eastern Polynesia (Hawaii, New Zealand, Marquesas, Easter). There is reason to believe, then, that it represents the traces of the settlement of the earliest voyagers, from Tahiti, in the 9th and 10th centuries and that this early culture was conquered and altered during the period of and after the great voyages from the Society Islands during the period from 1100 to 1300.

Easter Island was also settled late, in the 13th or 14th centuries. Architectural facts and the use of carved figures point to the Tuamotos or Mangareva as the more likely places of origin. In the older periods in Central

Polynesia the assembly courts and long narrow terraced platforms (ahu) were separate. It is likely that the ahu originated as a series of seats with stone backrests along one end of a court. Such things are found in Micronesia. In later periods these were combined into the marae, a large paved area with a high, often almost pyramid-like series or terraces of elongated terraced mound at one end. Upright standing stones, monoliths, or slabs in series were variously employed as constructional or architectural items. This fusion of different features into the marae must have occurred, probably in Central Polynesia (presumably the Society Islands), after the migration to Easter Island because the terraced ahu alone is used there. In this and in other aspects of culture Easter Island has its greatest affinity with Manga-reva although linguistically the Easter Islanders were closer to the people of the Tuamotos.

Similarly, the giant stone heads of Easter Island find their closest stylistic relatives in Eastern, marginal, Polynesia from New Zealand to the Marquesas. As with the small stone carvings of Necker those of Easter Island were carved by a people who were accustomed to placing carvings on their ahus but who found themselves in areas without large trees and who then continued in stone. The technical and mechanical details of carving and handling the Easter Island statues were within the capabilities of the high-Neolithic Polynesians. Carving the pieces, as a matter of fact, would have presented no difficulty, other than sustained hard work with the stone tools still to be found in the quarry. Transporting the huge pieces of soft, friable stone required the greatest measure of care and control. Skids, ramps, ropes and many men were the mechanical aids.

The so-called Easter Island "script" is apparently an almost calligraphic sequence of decorative motifs and perhaps of mnemonic aids, an item which would be of great use to the Polynesian priests, some of whom were called upon to remember chants and geneologies of enormous length. The "script" which it obviously is not, is a series of conventionalized figures and other motifs arranged in a linear sequence and usually carved on flat slabs of wood. The work was done well into the 18th century, one piece is carved on a fragment of a European type oar. Stylistically the individual characters are well within the range of a number of pictographs and petroglyphs which may be found throughout Polynesia and in other parts of Oceania and they have been shown to employ a number of the same motifs that were used in the Indus Valley "script". If there is a relationship over some 13,000 miles of space and 3000 to 4000 years of time it is no doubt one of art styles or forms rather than of an actual character for character symbolic identity.

Easter Island was cooler, windier and drier than the other islands of Eastern Polynesia. Its people therefore lacked some of the tropical products such as large forest trees for canoes. Hence large woodworking adzes of the many types are not found here. Chipped obsidian tools and weapon points are, on the other hand, numerous and varied.

If Easter Island stands out as a peculiar manifestation of Polynesian culture then that of the Maori of New Zealand must counterbalance it in another direction. It is obvious that Polynesian culture contained within it the seeds of diversity. It could mold itself to differing environments and mold these to its uses with equal ease. New Zealand is a big and temperate country, rich in

ocean and land resources. The people who went there failed to get the fowl or pig or the tropical fruits, including the coconut, across the distances from the Society Islands whence they started, or they did not live after arrival. They found a wild flax to replace the paper mulberry which had yielded bark cloth clothing, root crops were no problem and a diverse fauna yielded a wealth of meat resources. The great forests contained logs for canoes and buildings that must have been beyond a Polynesian's wildest dreams. Fine stones for tools and ornaments, basalts and jades, left nothing to be desired. So the New Zealanders developed a vast assortment of adze blades, including the late tanged-adze, chisels and other cutting edges, pounders, foot rests for digging sticks, stone carvings and other items that are far beyond the usual stone work inventory of the Polynesians. The fine stone and excellent tools and plentiful, easily worked wood led to an amazing development of wood working.

Again the full fledged marae with ahu as in Central Polynesia does not appear in New Zealand. Buildings were of wood; although they were often of great size and elaborately made, the Maori genius for planning appears to have expressed itself in the terracing, ditching and walling of easily fortified hill points. The Maori were great warriors.

Large populations, permanent habitation, and the use of shellfish resulted in the development of fairly extensive middens containing shell which have yielded archaeological sequences. Excavations of the earlier sites have indicated that the first colonizers, at least, saw and hunted the giant forms of the flightless bird which they, lacking domesticated fowl, called the moa. Smaller forms were apparently hunted to near extinction in the 16th or 17th centuries.

As with other Polynesian outliers, New Zealand was apparently discovered and settled more than once. Investigation indicates that two major settlements were made: during the 9th or 10th and in the 14th centuries. The people who settled first were either driven from the best areas or largely inter-married with the later "Fleet Maori" migrants; the latter have developed what we generally know as Maori culture. Most important of the items that the later seafarers brought with them was the sweet potato. This is a South American food plant and must have been brought from the Peruvian coast to the Tuamotos or Marquesas sometime before or early in the 13th century on what was probably the longest high seas voyage that man had made up to that time -- a good 8000 miles round trip.

Although the earliest Micronesian travelers to the east and southeast must have colonized Samoa and even Tonga first it is generally accepted that the greater developments in Polynesian culture were in the central or Society Island region. It is here that the most complex architectural and tool types, except in New Zealand, are found. The first Polynesians must have settled in the Society Islands by the first or second centuries of our era. This would leave them only seven or eight centuries to explore and populate central and east-central Polynesia before they built up a population pressure which sent them out on the first voyages north to Hawaii and south to New Zealand. In the Society Islands are the high, volcanic islands which offer far more in the way of resources of stone and wood, flora and fauna to a people. Upon this richness was built the vital culture which spanned the Pacific.

Stone structure became the most thoroughly developed. Here the ahu and assembly court were fused to become the full fledged marae. Older marae in the interior of Tahiti and later ones like that of Mahaiatea (1767-69) with its stepped pyramidal ahu offer a full sequence from early, simplified, to later, complex forms. Although the architectural development of these ceremonial centers is fairly well understood, from an archaeological point of view, at least, there have been a persistent minority of romanticists who have interpreted these native constructions in terms of either Egypt or South America. In general smaller cut stones, often with rounded facings, were prevalent in the Society Islands and adjacent eastern islands while larger, more megalithic constructions were characteristic of Western-Central Polynesian Samoa and Tonga. This is no invariable rule, however; both types of construction were found in both east and west and the spread of small stone construction appears to have been from Central Polynesia, the Society Islands to East and West, before the 1300's. The presence of large vaults, uprights, monolithic facings, etc., especially in the west points back to an old megalithic relationship.

Petroglyphs in Central and Eastern Polynesia are varied. Curvilinear and life forms are used. This type of artistic expression appears to have reached its apogee in the largely independent developments of Easter Island - which are related to those of the central area. Small stone tools, adzes, chisels and gouges were of igneous stone, generally quadrangular and rounded in cross-section. The shouldered or tanged adze in varied subtypes and sizes was widely used by later Polynesians. It, with the megalithic monuments, provides a firm cultural link with Indonesia whence both traits were diffused to the East. The Easter Island and older Western Polynesian adzes were never of this special type.

Small stone tools, adzes, chisels, gouges, grater blades, etc. were not as numerous in the Samoa-Tonga area as in the Societies. As far as Samoa is concerned stone platforms, walls, seats, roads and cairns are not uncommon. Megalithic structures are disappointing, although present. As with the remainder of Micronesia-Polynesia there is no reason to use the term "megalithic" as indicative of a separate older culture but, rather, it should be used as connoting a tradition of handling and building with large stone masses, a culture trait present in all of the island worlds of Oceania, as we have seen or shall see. The remains of the house of the God, Le Fee, on Samoa, have been described as the remnants of a spectacular structure. Actually they are a series of small monoliths two to four feet high around a stone platform.

Tonga, a western and central Polynesian island, is further set apart by the intercourse which Tongans had with Fiji, the easternmost Melanesian group, to the cultural stimulation of both Polynesians and Melanesians. Social and material changes resulted. Archaeologically, we are not interested in the latter. It is not possible to state just which items in the stone construction are Melanesian megalithic, via Fiji, and which are Micronesian-Polynesian. Mounds, platforms, walls, quarrying and cutting of blocks of stone, handling of large masses of stone, dry masonry, earthworks, water transport of quarried blocks, L-shaped corner pieces, and terracing are all aspects of Tongan construction activity. The langi burial mounds often, at least in later periods, had a burial vault within them. Geneological, historical, and archaeological investigations indicate that these terraced, often stone faced, mounds cannot well be older than the 11th century and that they were probably built between the 12th and 16th centuries.

Most interesting archaeologically is the great Tongan Trilithon, Haamongaamaui, and the fact that pottery was once made in Tonga and then, not proving to be a necessary adjunct of the culture, became a lost art. The pottery fragments which are found on the older sites are all of a utilitarian ware. This ware was obviously closely related to Fijian pottery. Melanesian methods of cookery and storage, which necessitated pottery obviously did not find ready adoption among these Polynesians. The trilithon is a simple three piece gateway: two uprights and a cross piece. It is 17 feet high and 19 feet wide. The visible portion of the monument must weigh approximately 100 tons. The trilithon is said to have been built by the 11th Tui Tonga (king of Tonga). There are traditional, and reasonable, data concerning the methods employed and the reasons for its erection. Tongan stone work appears to have had a quick efflorescence in the 13th to 16th centuries; its monumental use may well be due to the development of the political state. This political development of Tonga was felt in Samoa and perhaps led to some of the stone building there.

Rough stone work, the major aspect of Micronesia-Polynesia archaeology, was relieved in most parts of Polynesia, though rarely, by cut stone work. In general the Oceanic masons did not break joints as would a modern bricklayer although L-shaped stones were used to tie corners together. Cut slabs, often weighing many tons were used for facings.

Forts, involving altered hilltops, gaps cut in ridges and sometimes palisades are found from Palau to New Zealand. They might be as amenable to study as the stone platform and court arrangements known as maraes. This complex has been shown to have developed in the Society Islands or near them and, furthermore, to have developed to its 18th century form well after the migrants had left for Hawaii, Easter Island and New Zealand. The marae or ceremonial structures in those islands illustrate archaic forms of the ceremonial centers or have had local developments upon an archaic base. Highly conventionalized stone carvings, apparently developed upon and continuous with a tradition of wood carvings featured a heavy squat body, flexed legs with short thighs, heavy calfs and forearms over the abdomen. Sex attributes were not stressed. The wide mouth, protuberant tongue, big head and beetling brows, and large eye combined with the above bodily attributes, sufficiently describe the base upon which much of the Polynesian artistic variation was made. These variations are discernable from Hawaii to New Zealand in stone, wood and as petroglyphs. This art style is presumed to have originated early in west Polynesia or to have been a part of the older Micronesia-Polynesia culture. Aspects of the same body and, to a lesser extent, facial treatment occurs in Micronesia, Melanesia and even on into Indonesia.

Burial practices of Micronesia-Polynesia are numerous and varied. Commoners were often buried or exposed on the strand while nobles were buried in vaults, mummified or confined. Amateur excavations in platforms and enclosures and archaeological examinations of tombs indicate that inhumation was an accepted practice in earlier periods in Melanesia and probably also in southern Polynesia. As is so often the case, developing culture meant social stratification. Persons of greater importance received special treatment in death, as otherwise. Secondary burial or removal of flesh and retention of the bones as holy relics developed in some places. In general, in Southern marginal Polynesia commoners were buried but the chief's bones were kept. In Western Polynesia and adjacent Eastern Micronesia extended earth burial was the mode.

Possibly mummification in Southern Polynesia was the result of diffusion from Melanesia.

Most of the islands of Micronesia are atolls, as are the equatorial islands of Polynesia. These low islands offered little to the Neolithic migrant in the way of arable land, forests, or stone from which to make his tools. *Tridacna* shell became a substitute for stone for tools, adzes, pestles, etc. As a consequence it is only on the largest or most favored atolls, and on the few volcanic islands in the Carolines and Marianas that there can be hope for the discovery of archaeological evidence of not only recent cultural change but of traces of the earliest populations, the migrants from Indonesia or Malaysia or their immediate descendants.

Large stone constructions are not rare in Micronesia. On Ponape and nearby, in the Eastern Carolines are large enclosures, platforms, walls, docks or causeways made of cribbed walls of natural basalt columns. Legend assigns them as chiefly buildings. Burials have been found in them, stone and shell tools and a single potsherd. On the Marianas, monolithic pillars (latte) of varying size, arranged in double rows and each with a hemispherical capital on top provided support for houses, clubhouses or boathouses. Some of the pillars are very large; they are the only major aspect of a megalithic trend on these islands. Excavations on the Marianas have indicated that extended, usually supine, burials, middens of only a few feet in depth (either in interior or near the Ocean) and an enormous number of potsherds are the usual rule. The sherds vary around a red, fairly coarse, utilitarian ware. A radiocarbon date from material associated with late type sherds and latte groupings was 845 A.D.; a large oyster shell from indurated sand beds on Saipan yielded a date of 1527 B.C. This shell was associated with a well made, red-slipped, undecorated pottery thought to be related to Philippine wares. As there were sherds to a depth of between five and six feet from the surface, over four feet below the dated shell, there is no doubt that Neolithic settlers were in Saipan at least as early as 2000 B.C.

The Palau Islands, on to the west, and Yap, between the Marianas and Palau also supported pottery making peoples. The pottery of Yap was apparently modeled by laminating layers of clay, a rare Melanesian technique, while that of both the Marianas and Palau was coiled as in most of Melanesian pottery. That of Indonesia is largely modeled. It is probably that late Micronesian pottery represents diffusion from Melanesia. Stone platforms and the stone cartwheel money of Yap are the typical megalithic traits of that island. Palau is an archipelago like the Marianas though smaller. Its larger island is volcanic but it lacks stone for good cutting tools which must therefore be made of *Tridacna* shell. House and clubhouse stone platforms, paved paths or roads, docks, large and smaller stone carvings and large monolithic columns arranged in parallel rows, probably building supports are the most obvious aspects of megalithic activity there. Pottery from the later period is similar to that of Guam: a coarse red ware. It is often smudged on the interior; very large pots were made. Pottery lamps with a wick tube, oil reservoir and rim decorations were not uncommon. Deep in the terraced sites the coarse ware is replaced by a thin sandy dark ware. This may be related to the early Marianas redware. Outstanding in Palau archaeology are the terraced hills and the money made of the sawed segments of stone rings. The former are presumably both fortifications and of agricultural utility.



To the Southwest of the Palaus a string of small islands: Sonsorol, Puloana, Merir and Tobi stretch down toward Halmahera and Malaysia. On Merir is what appears to be a deep and ancient midden, with the small houses of the few remaining old inhabitants still clustered upon it. To the west of the Palaus is the great Philippine group, something over 500 miles away -- and we are back in Indonesia again -- some 5000 or more years after the first hardy Neolithic voyagers nosed the prows of their sailing canoes into unsailed waters -- the first of many such treks to the East.

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## THE POTLATCH AND SOCIAL EQUILIBRIUM\*

Rosemary A. Allen

That collection of culture elements bound together in what is termed the potlatch of the Northwest Coast has been described frequently in the literature, and represented as filling a variously defined place in the culture. Barnett termed it "a congregation of people, ceremoniously and often individually invited to witness a demonstration of family prerogative." (Barnett, 1938:349) Murdock calls it "the dynamic factor in the most vital of all native institutions--the system of rank and status." (Murdock, 1934:3) To Benedict, the potlatch was an obsessive preoccupation with the game of rivalry and an excuse for self-glorification. Boas once likened it to life insurance (Boas, 1898:54-55). Garfield emphasizes public validation of titles (Garfield, 1939:196). Codere's reanalysis of the Kwakiutl potlatch shows it increasing in importance as a substitute for warfare. And McClellan has most recently discussed the "way in which Tlingit ceremonialism [including the potlatch] serves to strengthen and reaffirm basic social groupings, even at the expense of conflicting loyalties" (McClellan, 1954:96).

Although, as Codere properly points out, there were unique features about the potlatch in the different tribes, which we shall discuss later, there have been recognized sufficient similarities to permit us to conclude that the differences were in emphasis, and a fundamental similarity existed which validly permits generalization of this complex of elements into a single category, described under the rubric 'potlatch'.

It should also be possible to make some general statements about this type or category of social activity which might then be extended to cultures outside of the area. A feature most striking has been the association of the potlatch with the system of rank and family prerogative, but this is to be expected in a society which emphasizes this aspect of its organization. Defining the potlatch in these terms, such an institution might be compared directly only with institutions in societies similarly organized. But there are certain aspects of potlatching on the Northwest Coast that suggest more than this. Although the stated purpose in many potlatches, in certain cases the giving and validation of a name or title (representing the prerogatives and rank which are the expression of the status system) does not appear to be the primary consideration. Such are the rival, vengeance, face-saving and compensatory potlatches which are not associated with the cycle of changing names and rank positions. The relation of these to the major rank-oriented potlatches must be explained.

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I would like to offer, therefore, a broader and more general definition of the functions of the potlatch and say that the potlatch serves as the mechanism for the maintenance of social equilibrium in general and, because of the specific emphasis of the society upon the system of rank, the potlatch was normally associated therewith. In general, the potlatch served to give public recognition of the position of the individual and to keep the record straight, as it were, regarding the statuses of the members of the society.

I would like, after discussing what I mean by social equilibrium, to detail the types of potlatches occurring among the tribes of this culture area, and then relate the institution of potlatching to the concept of social equilibrium in illustration of this thesis.

### Social Equilibrium

Equilibrium means harmony and dynamic balance, not changeless stability; we are not here presenting the static picture of a society wherein all individuals are given a status which is ranked and therefore the individual in such a society might change his status and position merely through giving away more property and by than means alone. The people who take part in social life, in everyday living, and who take part in potlatches are by the very fact that they are carrying on a normal human (i.e., social) existence, changing in their relations to those around them. In the collection of rules and definitions and norms of a society--in its culture--we can see the implicit function present to avoid friction, to make smooth the workings of those interactions which make up social living.

The social status of the individual is the sum total of the various statuses attributed to him (in Linton's (Linton, 1936:113) restricted definition of status) plus the attitude and evaluation of his fellows toward the way he plays those roles in relation to the generally accepted picture of the proper social behavior. The characteristics which result in the attribution of any status to the individual may change occasionally or regularly in his social life. Unless the society has established mechanisms for insuring that these changes be smooth, the harmonious workings of interwoven status relations will be affected. Such expected changes in the status of the individual are frequently subsumed under what the anthropologist calls 'crisis situations' --changes induced by birth, death, marriage, reaching adulthood, etc. These are changes many of which happen to all individuals because of the culturally interpreted biological history of the individual. They customarily involve a change in his relations with others; the nature of the change, and the identification and definition of it, are selected by the particular culture.

In a general way, we might say that the rules and norms and definitions that make up any particular culture are primarily concerned with defining the area, nature, and direction of changes in the status of the members of the society, and are concerned with organizing those changes in the most socially efficient way for the needs of society in general and that culture in particular.

The events which produce changes in status are potential trouble spots, because they are possible occasions of strangeness and uncertainty in the response of other members of the society. Where there is insecurity, there is usually tension. Where there is the possibility of uncertainty in status ascription, the culture 'establishes' as it were, mechanisms to lessen this uncertainty and to redirect and eliminate the resultant tensions. The rites de passage attendant upon crisis situations in the life-cycle are mechanisms of this nature.

The potlatch is a formal social occurrence which operates in certain of these situations--the first naming of a child, subsequent namings as he grows older, reaches adult status, and takes on new responsibilities. (As already mentioned, the name represents rank and position, hence is a very important symbol.) Accompanying the other activities of potlatches are physical mutilations--tattooing and cutting of apertures for insertion of labrets and ear ornaments--all of which indicate visibly something about the status of the individual. Important potlatches are those concerned with the validation of inheritance of titles--and hence of ranked positions.

There are, however, other occasions when it becomes necessary to reaffirm the status position of the individual--situations which are not regular and predictable and universal in the same fashion that are birth, maturation and death. Yet they are recurrent events in the life of the society which, although they may not affect each individual, will affect various ones at various times--these are the things that are threats to the status position of the individual which come from outside of himself--an injury done him, a crime committed against his person or property or whatever is significant to his self- and status-conception, or the emergence of a rival claimant for his rank position in the graded society such as that of the Northwest Coast. There is a whole class of potlatch events, as it were, which are concerned with these things that are not part of the social life-cycle through which each member goes as he passes through time as a participating member of his society. These, as I mentioned before, are the rival, vengeance, face-saving and compensatory potlatches.

#### Types of Potlatches

I would like now to classify the various types of potlatches, according to their primary intentional and stated purposes, on the basis of published accounts of specific cases and the overt reasons for potlatching given.

- A. The potlatches which are associated with the general social life-cycle are all closely related since they revolve around the validation and assumption of titles which, in this culture, stand for certain privileges and positions in the rank order. Apparently there are four major purposes associated with this type, but sometimes the separations may be seriously questioned:
  1. Validation of inheritance of a house and its chieftainship. (Examples are given by Murdock and Swanton for the Haida, Garfield for the Tsimshian.)

2. Housebuilding--the establishment of oneself as a chief. (Examples given by Murdock and Swanton for the Haida, Garfield for the Tsimshian, Swanton for the Tlingit, and Boas for the Kwakiutl.) How valid a distinction should be made between these two is questionable.
3. Erection of mortuary column for an important relative. (Examples by Murdock and Swanton for the Haida, Boas for the Tsimshian and Swanton for the Tlingit.) Swanton would say the only potlatch possible for the Tlingit was one honoring the Dead (Swanton, 1908:434). Actually, this appears to be a variety of the first type, as it is a part of the whole series of potlatches for the validation of inheritance of titles (Garfield, 1939:192), and a temporary or partial payment on the housebuilding potlatch (Murdock, 1934:12-13).
4. Assumption of name by successor, or giving of name to him. (Examples for the Haida from Murdock [by implication in house-building potlatch], for the Tsimshian in Garfield and Boas, and for the Kwakiutl in Boas.) The assumption of a new name is generally considered a primary purpose of most potlatches.

Occurring at many potlatches, but never the primary purpose except in small intimate family affairs, are the physical mutilations which give visible recognition to status position. (Examples for the Haida in Murdock and Swanton, for the Tsimshian in Garfield and Boas, and for the Kwakiutl in Boas.) Initiation into secret societies or the giving of supernatural power and spirit dances to the young relative or relatives might also be the purpose of a potlatch in some tribes. Apparent in the discussion of this feature in various accounts is the tribal difference in the importance of the secret societies and spirit dances, which will be discussed later.

B. The potlatches which were mentioned above as falling outside of the group wherein the assumption of titles was the preoccupation, may also be classed together as a second major type. There are perhaps five varieties of this group discernible in the literature.

1. The vengeance potlatch, to wipe out a slight given a high class person. (Examples from Murdock for the Haida, Garfield for the Tsimshian, Boas for the Kwakiutl.)
2. The rival potlatch so characteristic of the elaboration of this institution among the Kwakiutl, reported voluminously by Boas. This is included by Murdock with the vengeance potlatch for the Haida, which may reflect a slightly different emphasis in these two tribes.
3. Face-saving potlatch, to wipe out shame and prevent further reference to an embarrassing situation; this resembles the vengeance potlatch in its 'wiping out' effect, but is not directed against any specific individual. (Examples from Murdock for the Haida and Garfield for the Tsimshian.)
4. Reestablishment of social position of a former captive or slave. This is really a face-saving potlatch on a grand scale, but according to

Boas, with reference to the Kwakiutl, it was not possible to wipe out the shame completely. (Examples from the Tsimshian in Garfield.) Haida informants say the same thing.

5. Compensation for an injuring or composition of a crime. (Examples from Garfield for the Tsimshian.) This may partake of the nature of vengeance, but not necessarily. Again, the development of the rival potlatch among the Haida and Kwakiutl might influence the special direction a potlatch would take, but the accounts of actions in cases of crime are not well reported for most of these tribes.
- C. There is another important purpose for potlatching, in addition to these two major types. Mentioned by nearly all the writers is the giving or purchase or, in general, transmission of a copper from one individual to another at a potlatch. Among the Kwakiutl, with their elaboration of rival potlatching and relatively greater emphasis upon destruction of property, this frequently took the form of the giving of coppers to rivals, or destroying them as a challenge. According to Murdock, among the Haidas coppers were never purchased but always given, usually to rivals. Garfield (Garfield, 1939:193) says that coppers were purchased at Tsimshian potlatches and, indeed, that only at potlatches could such a transaction take place; the purchase of a copper would then be a primary purpose for a potlatch. Swanton also records coppers changing hands at potlatches among the Tlingit.

There is one mention also of still another purpose for a potlatch; Garfield (loc. cit.) states that when an individual wished to lead a war party, he would give a potlatch, attendance at which committed the recipients to membership in the war party.

The above three types all display very well that the potlatch of the Northwest Coast operated formally and purposefully in spheres removed from the direct preoccupation with titles and their assumption and validation.

The potlatch in general seems to be distinguishable from the feast although McClellan points out that they are "always important adjuncts of the potlatch . . . and are frequently so integrated with them that to press a dividing line is sheer pedantry" (McClellan, 1954:77). Swanton says "The potlatch, or giving-away of property, is to be carefully distinguished from the feast, of which it might be said to be a 'ritualized' form" (Swanton, 1909:155). Oberg differentiates the feasts from the potlatches by pointing out that the latter are "performed by the members of one phratry to the members of another; they are connected with clans, with the totemic emblems and crests, with the spirits of the ancestors, and with matters of rank" (Oberg, 1934:98).

The emphasis of the potlatch also seems to differ from tribe to tribe, and we should briefly point this out for the various tribes.<sup>1</sup> Swanton says

<sup>1</sup>Although traces of a potlatch-type institution with distribution of gifts to the guests are found as far as among the Point Barrow Eskimo, the Alaskan Athapascans, the Plateau tribes, the Wishram and Coeur d'Alene, to mention the widest extent (DeLaguna & Birket-Smith, 1938:475), I have concentrated on those tribes that form the generally accepted unit of Northwest Coast tribes of Canada and Alaska.

that "superficially the Tlingit potlatch resembled that of the Haida, but with the former only one motive underlay the custom, regard for and respect for the dead, and there was but one kind of potlatch in consequence" (Swanton, 1909:434). Oberg says that

the two reasons most commonly given for potlatches [among the Chilkat Tlingit primarily] not connected with social events [i.e., the completion of house building, burial, and the preparation of the young for adult life] were the honoring of the dead and the honoring of children. A wealthy house could decide on a potlatch. If it was of very high rank, it would tend to honor its ancestors, but if it was of low rank and wished to raise its status, it would honor its children. (Oberg, 1934:120)

McClellan points out rightfully that several functions might be fulfilled by a single potlatch<sup>2</sup> (McClellan, 1954:78).

"Among the Haida," says Swanton, "the social idea quite overbalanced the religious" (Swanton, 1908:434) and "these [feasts] and the potlatches were to the Haida roads to greatness more than war. The latter, when not waged to avenge injuries, was simply a means of increasing their power to give the former" (Swanton, 1909:155). All the various forms of Haida potlatch, Murdock concludes, "conform to a single basic pattern, namely, the ceremonial distribution of property to invited members of the opposite moiety, and all have some reference to rank, which they either confer, validate, or uphold" (Murdock, 1934:3). Dances of the secret society accompanied the potlatch of the Haida, and occurred with this tribe only then (Swanton, 1909:195-196).

Boas states that

an essential feature of the Tsimshian potlatch and that of the tribes farther to the south, is the opportunity it gives for the public announcements of events that are important for the social standing of the individual. The public announcement gives the legal claim to the social advance made at the time; and the higher the honor claimed, the wider must be the circle of witnesses of the degree of publicity. (Boas, 1916:537)

These honors relate to events important in the development of the social position of the child, house-building and the assumption of titles, reestablishment of social position, etc. Supernatural power dances were also a feature, though distinguished from the potlatch (Garfield, 1939:19).

The special features of the Kwakiutl potlatch are well known--its identification with the interest-bearing investment of property, rivalry and its relation to, and replacement of, warfare.

<sup>2</sup>One reason Oberg's statement might seem to contradict that of Swanton could be because Oberg's fieldwork was done in 1932, twenty-eight years after that of Swanton, and was conducted [primarily] at Kluckwan, whereas Swanton worked at Sitka and Wrangell, so Oberg's statement could reflect local or recent emphasis.



The Nootka potlatch concerned itself overtly with the transmission of heritable property or privileges. "The commonest reasons for potlatching," according to Drucker, were

life crises (birth, puberty, marriage, death), minor critical states (wife's pregnancy, child's first tooth, first game, when some accident befell the child), or sometimes for no very obvious reason at all, except just to be giving one. There was no competitive potlatching of the Kwakiutl variety. . . . The whole spirit of Nootkan potlatching was very different from that described as typical of their Southern Kwakiutl kin and neighbors. (Drucker, 1952:377)

The gifts were essentially expressions of esteem, given to a group of guests (in native theory, kinsmen invited because of their relationship ties with the giver), who were called upon to witness the host's hereditary claims to certain honors. (Ibid.:386)

McIlwraith cogently compares and contrasts the Bella Coola potlatch with the institution in the rest of the culture area:

(1) The basic concepts of the potlatch in Bella Coola are the same as those of the rite practiced elsewhere on the coast. (2) A potlatch has not the same importance at Bella Coola as it has on other parts of the coast, especially among the Kwakiutl. All informants stated repeatedly that they did not carry their potlatches to the same lengths as did the 'foolish' Kwakiutl. . . . (3) The potlatch, though fundamentally the same as it is elsewhere on the coast, has certain rites characteristic of the locality. The central Bella Coola feature, the return of a dead ancestor, is not equally important elsewhere. (McIlwraith, 1948:242-243)

The tribes of the Northwest Coast culture area, in their linguistic affiliation, legends of origin, and comparative culture, display differences and are not by any means carbon copies one of the other. Thus we should expect the potlatch also to be expressed differently among the several tribes, and perhaps even in the separate villages of the same tribe--variations on a theme. But the basic concept and purpose seems to be everywhere the necessity of public distribution of property to validate every transaction of importance and to give public recognition to the social status of a man.

#### The Potlatch and Social Equilibrium

But in addition to these specific and stated purposes for particular potlatches, there are three functions or motives for potlatching which are always explicitly or implicitly present--the ideas of (1) payment for services, (2) association with a system of rank ordering, and (3) public recognition of action and service, and acknowledgement of responsibilities. It is the third of these motives that deserves attention here. In a non-literate society which was characterized by very wide contact between individuals, through travel, trade and wide exogamy, but also by a close association with the kinship groups --one's own and those related by blood or marriage--it was important that status

identification be public. Frequently the assumption of important titles, or rivalries between holders of important titles, called for potlatching not only involving members of different local communities, but extra-tribal guest groups as well. Regardless of "the dramatic and psychological functions of publicity in the potlatch as 'a congregation of witnesses'" (Codere, 1950:88) public acknowledgement of the reaffirmation of status position of the persons involved was quite necessary to insure continued appropriate social interaction in conformity with the norms of the culture.

It is perhaps easy to see the balance-giving nature of the recognition of the inheritance of a title and its validation. A public ceremony of some sort would be necessary in a non-literate society and the totem pole, which not only illustrates one or more stories belonging to the lineage but also serves for many years as a reminder of the specific events connected with its raising, makes an effective record for a people without the written word. Public recognition of such status symbols as physical mutilations or the assumption of a new name are merely aspects of this, and the face-saving potlatch is also clearly related.

But there are three other aspects of this institution which remain to be related to the concept of social equilibrium and its maintenance-- these are the apparently disruptive vengeance and rival potlatches, the utilization of the potlatch in the resolution of trouble cases, and the functions of the potlatch in a changing culture and under the stresses of an acculturative situation.

Murdock says that the vengeance potlatch among the Haidas was more an occasion "to wipe out a slight and uphold prestige of the donor" and although employed sometimes to ruin an opponent, it customarily took place between equals and ended in a draw. He even records one case wherein a person asked his opponent not to destroy two coppers because he himself had only one to destroy in return. One was withdrawn without objection "and the ceremony went on" (Murdock, 1934:14). Again, this use of the coppers seems to belong to the symbolic side of potlatching, as does the concept of the face-saving type which 'wipes out' shame. However, the vengeance potlatch approaches the rival potlatch and among the Haida still, it was not always between equals:

in Skidgate, where the vengeance potlatch seems to be a much more serious matter than at Masset [which is further north and hence farther from the Kwakiutl influence], a poor man is said to make no attempt to meet the challenge of his opponents, less the latter thereupon give a gada<sup>n</sup>] quite beyond his ability to return. (Murdock, 1934:14)

But the great development of the rival potlatch was among the Kwakiutl, whose particular elaboration of potlatching has become the outstanding feature of popular knowledge about that tribe and the whole culture area. Competitive potlatching, in fact, seems to be a variation appearing alongside of the life-cycle and status potlatching among the Kwakiutl, Tsimshian and Haida villages. It is nowhere on the coast the major variety and therefore does not appear to be the basic or fundamental type.

The potlatch also functions in the settlement of trouble cases; in its rules and procedures are embodied the law as it exists in this culture. Significantly enough, the trouble cases reported by Garfield for the Tsimshian --which form the bulk of the cases presented for this area--deal with homicides and with the mode of inheritance and the potlatch is always associated with their settlement. Homicide is, of course, a definite threat to the society and especially to the kin group in a kin-oriented society, and to avoid the likelihood of expensive blood feuds, some formal mechanism for the settlement of such cases is necessary. Once a potlatch has been given, requiring the assent and presence of the injured group as guests, a homicide case is closed and the injured kin group need not, and may not, exact further or more lethal compensation, although before the potlatch settles the case, they may kill a person of equal rank from the offending group. The problems of inheritance are again an important aspect of social life; they are conceived by the Northwest Coast people as vital to their society and thus important enough to require formal mechanisms which keep this phase of life under control and thus avoid unnecessary conflicts in this area. Where there would be doubt as to which of two men was more closely related to a deceased title-holder, one claimant would potlatch (with the assent and aid of his kin group, of course) and validate his claim to the title and the other would be then powerless to challenge. The unsuccessful claimant could lessen his shame by potlatching for some other title belonging to the lineage, and distributing property of equal value to that distributed by the successful claimant. This would not result in a series of rival potlatches, since these men of necessity belong to the same kin group, but it would settle the problem of ascription of status to these two men by validating their separate titles.

But if we are to consider the potlatch as a means for the maintenance of social equilibrium we must also look at the operations of the institution when the culture is undergoing the pressures and strains of social change and acculturation. Northwest Coast culture history presents the picture of a very dynamic society--one with a relatively long history of culture change while there was retained an identification with the tribal culture. The disorganization of the culture actually came at a fairly late stage in its documented culture history.

During the first period of European contact, the period of the maritime fur trade, the natives maintained their old way of life because the demands made upon them were for the products of their native economy--the fruits of their hunting or trading with inland hunters. Some of these early changes may be readily documented in the field of material culture--the adoption of metal tools and the subsequent impetus given to woodcarving, the introduction of the new medium of argilite and new forms--pipes and souvenirs, and the demands for models of totem poles, canoes and community houses ordered by tourists, collectors and ethnologists.

Codere's recent account of Kwakiutl culture from 1792 to 1930 attempts to present a more integrated account of socio-economic changes in this one tribe which might be presented as follows: firstly, an increased surplus wealth--one might say a fantastic increase in variety and amount of surplus wealth--which was a direct result of the demand for furs and the desire to create new needs for trade goods; secondly, the increased leisure which resulted from

this easier satisfaction of basic wants due to the high price of furs and the increased efficiency of means for obtaining them with guns as well as the adoption of ready-made substitutes for native products; thirdly, the decreasing population, which resulted from serious introduced diseases and which resulted in a greater supply of titles and finally a condition in which there might even be more titles available than there were individuals competing for them.

Such profound changes in the social environment of an aboriginal people have frequently led almost directly to detribalization or cultural disorganization in fairly spectacular fashion. Yet on the Northwest Coast there was first of all a very definite cultural efflorescence--an increased amount of intertribal travel, contact and trade, increased artistic vigor and creativity, and an increase and elaboration of potlatching.

Even to the present day, there are certain indications that the concept of potlatching has not died out entirely even among the relatively highly acculturated Tlingits and Haidas of Alaska. When the U. S. Forest Service restored a number of poles in the 1930's, a certain ridicule pole was restored; the interested parties (i.e., the clan being ridiculed on the pole) objected vigorously, saying no one had the right to erect a new pole concerning that incident portrayed, for payment had been made and the insult 'wiped out' in proper fashion. In another village, flag poles replaced the totem poles and the town council decreed that only one pole should be erected to avoid rivalry. When the pole was raised, the neighboring village (of a different linguistic group) was invited to assist and a 'picnic' was held. Later on, people from the same village felt very aggrieved when a resident erected a private flag pole--my informant claimed that the villagers were not so concerned about the contravening of the city ordinance as with the fact that the man was so stingy he didn't even have a small party when he raised the flagpole.

If the thesis here presented is applicable, that the potlatch is a mechanism for the maintenance of social equilibrium, it is easy to see how it played its part in the retention of a fairly well integrated tribal culture for so long a period of time. The surplus wealth and cultural energy of the people were diverted from warfare and prevented from becoming squandered completely on extra-tribal and extra-native affairs by the utilization of the system of potlatching. The channels of mobility were kept open in terms of the native culture itself by the increased wealth--the increased ability to compete--and by the decreased population--the increased assurance of success in the competition. The place of overt warfare was filled by the same elaboration of 'fighting with property' when warfare became unfeasible in the new political climate of the white-dominated society. The tensions of everyday life, surely not decreased by the contact situation, were lessened and diverted into culturally acceptable channels by the same potlatching system. Thus a restoration of social equilibrium could be effected in the several varieties of situations which could upset the harmony of group life through the mechanism of the potlatch.

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## SHOSHONI WARE FROM IDAHO\*

Donald R. Tuohy

While engaged in an archaeological survey following a proposed route of the Pacific Northwest natural gas pipeline through the state of Idaho, the author collected a small sample of potsherds from the surface of a campsite on the Snake River near Glenn's Ferry, Idaho (located by Karl I. Smith). These sherds were taken to the Idaho State Historical Museum at Boise where they were analyzed along with four complete or nearly complete pottery vessels and several potsherds also from Idaho in the museum collections. All of the vessels and a majority of the sherds were identified as flat-bottomed Shoshoni ware.

Archaeologists have long been aware of the occurrence of Shoshoni ware in southern Idaho. It was described first in 1930 by Schellbach, who recovered a pottery vessel shaped like an inverted truncated cone having a rim of greater diameter than the base, and provided with a basal flange, from a cave overlooking the Snake River in Owyhee County (Schellbach, 1930:123). Later, de Laguna briefly described similar vessels from the Snake River near Boise in Ada County (de Laguna, 1947:247).

Subsequently, knowledge of the range of the ware has been increased. A vessel fragment having a flat bottom and a basal flange has been recovered in the Great Basin near Wendover, Utah, and Shoshoni ware sherds range even farther south to Iron County, Utah (Rudy, 1953:96, Fig. 23). Similar vessel forms are reported from points as far east as the central and upper Yellowstone drainage in Wyoming and Montana (Wedel, 1954:408), and the form extends at least as far north in the Plateau as Riggins, Idaho, on the lower Salmon River (Alan Bryan, personal communication).

This range, as Wedel points out, is not beyond the boundaries of an area believed to have been inhabited at one time by Shoshonean peoples (Wedel, 1954:406). Whether or not all flat-bottomed Shoshoni ware cooking pots thus far recovered may be attributed to the historic or proto-historic non-agricultural Shoshone bands is a matter of conjecture in the near absence of controlled archaeological investigations within the state of Idaho, as well as the paucity of ethnographic data. Therefore, no conclusions concerning the possible origins and early developments of flat-bottomed Shoshoni ware are possible. However, a further discussion of these and other problems will be presented following the description of the Idaho Shoshoni ware, the primary purpose of this paper.

\*I would like to express my thanks to Miss Mathews of the Idaho State Historical Museum in Boise, Idaho, for the use of museum specimens.

### Vessel Descriptions

The first vessel (Figs. 1 and 2) has no museum number. I shall refer to it as Vessel No. 1. It has been reconstructed from approximately 28 sherds originally found by Mrs. R. P. Erwin of Boise ". . . in the vicinity of a cave" on the Snake River (Idaho State Historical Museum Notes). The sherds were taken to the Museum of the American Indian in New York by Mr. Schellbach, and several years later, the restored vessel was returned to the Idaho State Historical Museum (hereafter designated by ISHM) in Boise, where it is on display today.

The earthenware container is the largest vessel from Idaho in the ISHM collections, both in height, varying between 21.5 and 22.7 cm., and in exterior rim diameter, 31 cm.

In form, the vessel is definitely asymmetrical, possibly a result of restoration and, when standing on its flat circular base, 14 cm. in diameter and 10-12 mm. thick, it has a tendency to tilt to one side in the same manner as the Marquess vessel of the same type from Wyoming, which Wedel describes (1954:405 and Fig. 118a). From the crumbling base upward, the walls are at first incurvate for some 2 cm. and thence excurvate to a point one or two cm. below the uneven rounding lip, where the walls again become incurvate. The walls vary in thickness from 5 mm. at the rim to approximately 10 mm. near the base.

The exterior color of the container ranges through several shades of dull gray-brown, while the interior is covered with a carbonaceous coating rendering it a dull black, heightened only by numerous light-reflecting grains of mica.

From certain details of construction, evident upon close examination, it is believed the original vessel was made by coiling and then thinned by scraping. The paste is fine to medium and moderately granular and the temper appears to be highly micaceous and derived from granite. There is little doubt that the container was fired in an uncontrolled reducing atmosphere.

The vessel lacks slip, paint, decoration, and handles or lugs, and, in general, it is crudely finished with slight striations visible both on the exterior and the interior, but particularly on the interior of the container.

In addition to these features, it appears likely that the original vessel was either cracked and then mended, by drilling two small holes on either side of the crack and lacing it together, or else the holes were drilled near the rim in order to facilitate transport. The two holes, 7 and 9 mm. outside diameter tapering to 3.5 and 4 mm. respectively, were drilled from the outside, and they are 4.2 cm. apart, each in adjacent sherds. These holes are clearly shown in Fig. 2.

I am not prepared to take sides as to the function of these holes, but evidence strengthening both interpretations comes from a paper by Palmer (Heizer, 1954:6-7). Speaking of Pah Ute cooking pots (which had conical bottoms) Palmer noted that "Two holes were drilled in the top in which strings were inserted by which the vessel could be secured to a pack and carried in



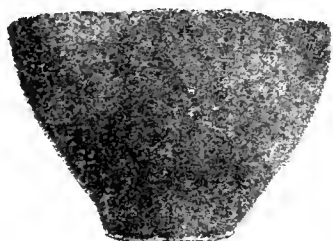


FIG. 1 EARTHENWARE VESSEL  
NO. 1 RESTORED BY  
THE MUSEUM OF THE  
AMERICAN INDIAN

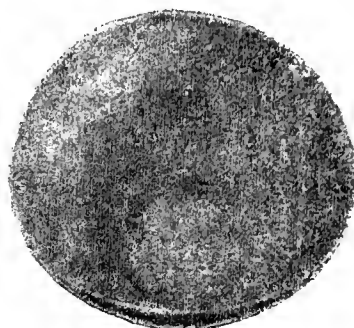
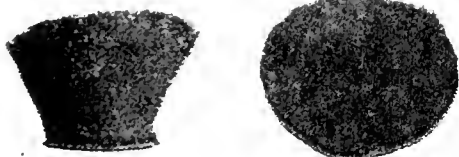


FIG. 2 SAME, OBLIQUE VIEW



FIGS. 3 AND 4, MUS. NO. 1469  
BROKEN EARTHENWARE  
VESSEL



FIGS. 5 AND 6, MUS. NO. 1469



FIGS. 7 AND 8, MUS. NO. 631-1  
RESTORED EARTHENWARE  
VESSEL



FIGS. 9 AND 10, NO MUS. NO.  
STONE BOWL



moving camp". Then, a little farther along in his description, he mentions two broken cooking pots which must have been mended for reuse. ". . . The first time a hole in each side of the cracks was drilled and strings inserted to draw the cracks together (and) at the second breaking they were discarded."

Perhaps the best explanation of the function of these holes is that they were drilled both for mending and for facilitating transport of the vessel, with the former occurring more frequently.

The second earthenware container (ISHM No. 1469, Figs. 3 and 4) was found in the rim rock in northeastern Owyhee County, about one-half mile from the Snake River. It was donated to the Idaho State Historical Museum by the finder, Mr. George Thomas of Glenn's Ferry, Idaho.

Unfortunately, all of the rim of this specimen is missing, but the base and a great deal of the wall is intact. In form this partially complete vessel closely resembles No. 1, except that the flange is more pronounced (see Fig. 3).

If complete, the container, in all probability, would be slightly smaller than specimen No. 1. The diameter of the broken wall is 20.7 cm., while the base diameter is 11.8 cm. The wall thickness averages 6 mm. increasing 2 to 3 mm. near the base.

The flat circular base is notably thicker and heavier than the bases of all the other vessels in the collection, averaging 20 mm. When viewed from above or below, the base also shows five large cracks radiating from its center to the edge of the flange, like spokes on a wheel. Apparently these cracks were caused by unequal shrinking stresses set up in the thick clay disk forming the base when the vessel was fired.

The surface color shows that the pot was fired in an uncontrolled reducing atmosphere. The color ranges from a dull gray-brown to a light buff-gray on the exterior, to a dull black carbon stained interior. The core is dark brown, and the core texture is made coarse by the aplastic, a crushed granitic rock or a sub-angular sand derived from granite.

It is believed the vessel was constructed by coiling although the incomplete walls do not demonstrate this clearly. The walls are roughly finished with diagonal thinning (?) striations and vertical smoothing indentations are apparent. Slip, decoration and handles or lugs are lacking.

Thus, there is a great deal of similarity between this fragmentary vessel and No. 1. The one notable difference is in the amount and size of the mica fragments in the paste of container No. 1469. Where the mica flecks are quite evident and fairly large in container No. 1, one virtually needs a hand lense to view the minute flecks of mica in the paste of vessel 1469.

The third clay container in the collection to be described, ISHM No. 1469-A, was also donated to the museum by Mr. George Thomas of Glenn's Ferry, Idaho. It apparently came from the same location as vessel No. 1469, that is, ". . . the rim rock along the Snake River in northeastern Owyhee County". (ISHM Notes).

This container is broken too, but in such a manner that its form and size are not obscured. It differs in form from Nos. 1 and 1469 in that the basal flange and the gracefully curving walls, so conspicuous on the other vessels, are missing. Instead of having doubly recurved walls, the walls of this container are excurvate from the flat circular base to the lip of the rim.

It is somewhat smaller than the other vessels, measuring 19.5 cm. in height, 20.2 cm. in rim diameter, and 10.4 cm. across the base (see Fig. 5 and 6).

It is very roughly finished with prominent vertical striations adding texture to the gray-brown to buff-colored exterior. In addition, lichens still cling to a part of the wall which was evidently exposed while the remainder of the vessel was buried.

Like all of the other earthenware containers, it is believed that No. 1469-A was made by coiling and then fired in a reducing atmosphere. The paste is fine to medium and the temper appears to be a low mica content sand probably derived from granite. The core texture is rather coarse and the core color is buff.

There are no handles or lugs, but there is a small hole 1 cm. in diameter tapering to 6 mm. drilled 3.5 cm. below the rim in the vessel wall.

In summary, specimen No. 1469-A more closely resembles vessel No. 1469 in all respects (i.e., temper, color, surface finish, core color, core texture, etc.) except vessel form.

The fourth and last complete vessel in the collection (ISHM No. 631-1, and Figs. 7 and 8 in this paper) had been broken and then repaired. It was found in a cave on Mary Carter Joy's ranch on the south fork of the Boise River (ISHM Notes).

In form it closely resembles Nos. 1 and 1469 and no further description is deemed necessary. It is somewhat smaller however, standing 18.8 cm. in height, and measuring 21.4 cm. in rim diameter and 11 cm. across the base. Rim thickness varies between 4 and 5 mm. and the walls become thicker toward the base.

Both the exterior and interior surfaces of the walls are heavily striated. Striae on the exterior are predominantly vertical, while those on the interior tend to spiral upward in a counter-clockwise direction.

The exterior of the container is a dull gray-brown to buff color except where a carbonaceous coating adheres to the walls near the rim (see Fig. 7). The interior color is dark brown to dull black, made lustrous by many particles of mica.

Like the others, this vessel was constructed by coiling, and then fired in an uncontrolled reducing atmosphere. The temper is again a crushed highly mica-ceous granite or sand derived therefrom. In this regard, the temper closely resembles that of No. 1, which is also highly micaceous.

Thus the overall similarities among the four vessels are easily discernible, yet slight differences in vessel form and in the mica content of the paste and temper may lead eventually to a differentiation of types of Shoshoni ware. Certainly such distinctions should be based on detailed sherd studies and thin section analysis and they should not be the results of subjective descriptions such as the foregoing.

### Sherd Descriptions

The following sherd descriptions are based on a total of 154 sherds, 13 from the collection at the Idaho State Historical Museum, and the remainder from a site examined by the author near Glenn's Ferry, Idaho.

To avoid needless repetition, a standard description form was followed. In some cases descriptive categories were omitted from this form when either the author's lack of knowledge of ceramics, or the sherds themselves would not permit description (i.e., carbon streak, firing clouds).

The first group to be described are sherds from a three foot square area on a sandy bank of the Snake River near the mouth of Little Canyon Creek, which is close to Glenn's Ferry, Idaho. A total of 114 sherds were recovered from this small area and they consist of 101 wall sherds, 5 base sherds and 7 rim sherds.

Collectors:	D. Tuohy, A. Bryan and K. Smith
Construction:	Coiling
Firing Atmosphere:	Uncontrolled, probably reducing, as sherd color ranges from gray-brown to black.
Core Colors:	Interior 5 mm. of a typical 1 cm. thick sherd is black, grading into dark brown in the outer 5 mm.
Temper:	A coarse sand, which does not show through.
Texture Core:	Fine to medium
Fracture:	Crumbling
Surface Finish:	Rather rough, some sherds are striated on the exterior, and many have a carbonaceous coating clinging to the interior.
Luster:	Dull
Surface Color:	Light gray-brown to smoky gray-brown
Forms:	With the exception of seven sherds, it is believed all of the sherds are from a flat-bottomed, flanged base vessel.

Vessel Size: No data; time limitations did not permit reconstruction of the vessel.

Base: Sherds indicate a flat base, circular and flanged.

Rim: Rims are 7 mm. thick

Handles/Lugs: None

Decoration: None

Slip: None

Paint: None

Remarks: The seven wall sherds are believed to be part of another and possibly smaller vessel, perhaps a bowl. These sherds are similar in every respect to the sherds just described, except that they are thinner, only 4-5 mm. thick, and they have much smoother interiors.

The next group of sherds are also from the Little Canyon Creek site, but they were widely scattered and probably represent the parts of at least three vessels. This group consists of 27 sherds, only one of them a rim sherd, the remainder body sherds.

Collectorz: Same as previous group

Construction: Coiling

Firing Atmosphere: Uncontrolled reducing, for vessel color ranges from dark gray to black.

Core Color: Ranges from dark gray to black; many sherds are dark brown.

Temper: Sub-angular fragments of minerals, probably derived from a granite.

Texture Core: Relatively coarse, the lighter colored mineral fragments show through the paste.

Fracture: Crumbling

Surface Finish: With the exception of five sherds, all are rather rough on the exterior. Mica and light colored minerals show through on both exteriors and interiors.

Luster: Mostly dull, ranging to waxy on a few sherds.

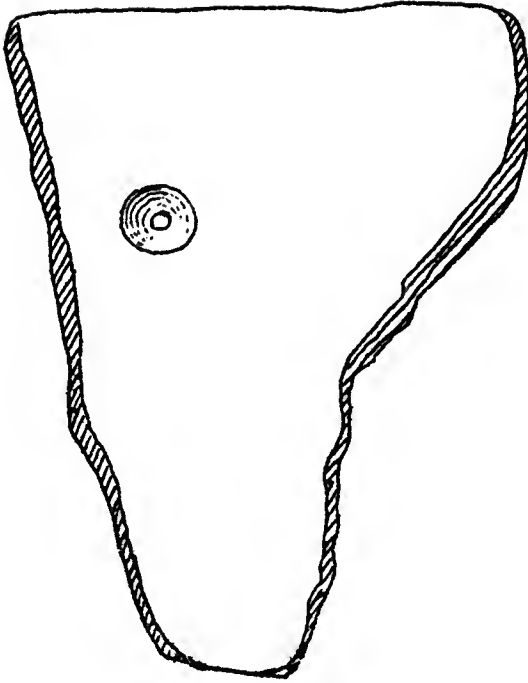
Surface Color: Light brown to brown-gray to black.

Forms:	No indications
Vessel Size:	No data
Thickness of Vessel Walls:	Sherds range from 4 mm. to 1 cm., with most averaging 5-7 mm.
Handles/Lugs:	None
Decoration:	None
Slip:	None
Paint:	None

The next group of Shoshoni ware sherds are in the museum collections (ISHM No. 697-4). This group consists of three sherds, two rim sherds and one wall sherd. The two rim sherds are illustrated on the following page. For convenience I have called them sherds A and B. These sherds were donated to the museum by Mrs. R. P. Erwin of Boise. No data accompanied them.

The curvature of these rim sherds indicates that they were once part of a vessel having a diameter estimated at 20 cm. Sherd A is 5 mm. thick at the rim and it tapers to 9 mm. Sherd B is of comparable thickness. The third sherd, a wall sherd, is not illustrated, but it, too, is 9 mm. thick.

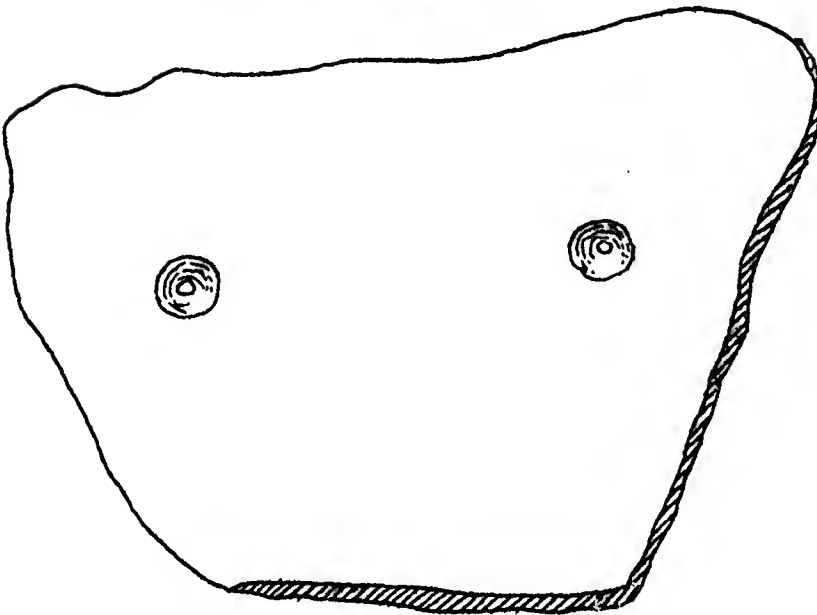
Construction:	Sherds A and B are probably from the same vessel, which was made by coiling and thinned by scraping.
Firing Atmosphere:	Uncontrolled, reducing.
Core Color:	Inside 4 mm. of sherds is black, the outside 5 mm. is the same gray-brown as the exterior surface.
Temper:	Coarse sub-angular sand, probably derived from granite.
Texture Core:	Sherds A and B medium to coarse; the wall sherd, definitely coarse.
Surface Finish:	Rough with striation.
Luster:	Sherds A and B have a great deal of mica in them, the other sherd has very little.
Surface Color:	Gray-brown, interiors are carbonized.
Remarks:	The wall sherd is probably not a part of the vessel that sherds A and B came from. The wall sherd has a slightly different temper and paste. The sub-angular grains of the temper are larger, and the mica particles are smaller and less numerous.



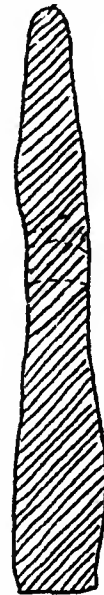
Sherd A, tracing



Sherd A, rim form



Sherd B, note worn area  
in the rim



Sherd B. profile

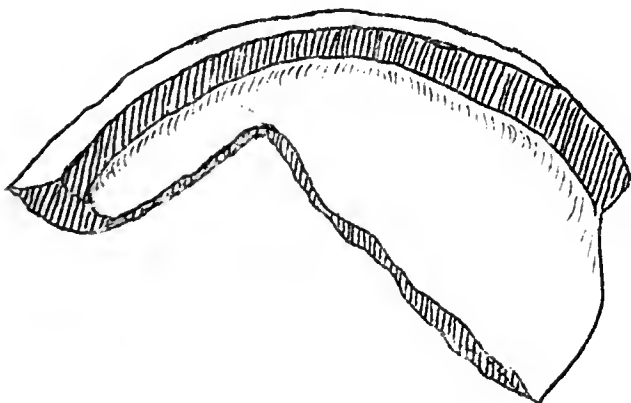


Another group of sherds in the ISHM collections consists of a base sherd, a rim sherd and two wall sherds. These sherds have no museum number, and their location and donor are unidentified. They are described below because they were clearly once a part of a basal-flanged vessel typical of the other Shoshoni ware specimens from Idaho.

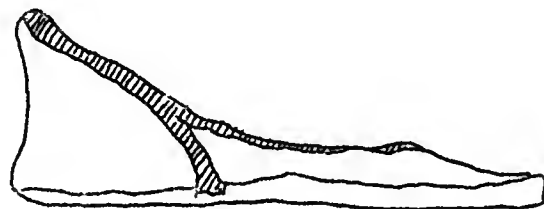
The curvature of the flanged base sherd indicates that the original vessel had a base diameter of ca. 9.5 cm. (see below, sherd C). This sherd is 5 mm. thick. The rim and wall sherds vary from 6 mm. to 1 cm. in thickness, but the rim sherd is only 2 mm. near the lip (see Page 66, sherd D).

In all other respects these sherds fall within the range of variation for Shoshoni ware noted elsewhere in this paper. If there is a slight difference between these specimens and those previously described in more detail, it is in the temper. Some of the crushed fragments or granitic rock comprising the temper are up to 3 mm. in diameter, and mica is absent except for a few minute particles in the paste.

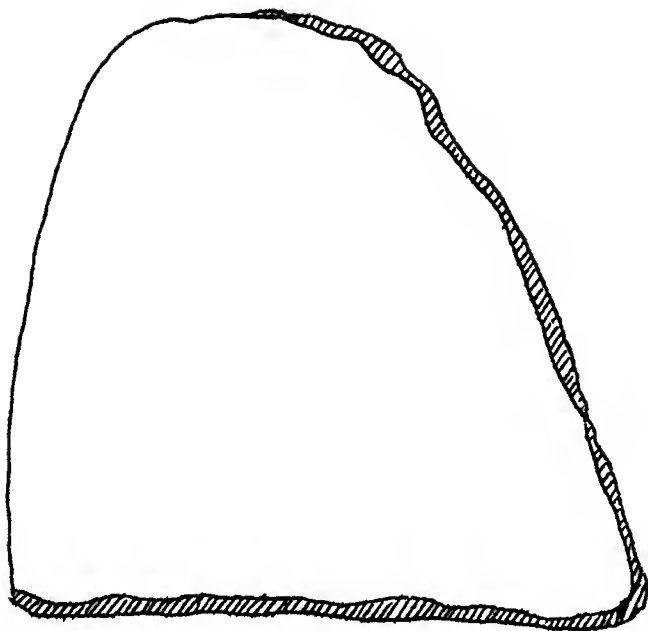
Three rim sherds comprise still another group of Shoshoni ware sherds in the museum collections. These sherds (ISHM No. 1084) were donated to the museum by Mrs. Charles Turner, who picked them up near King Hill, Idaho. These specimens have no peculiarities and they closely resemble the rim sherds illustrated on Page 64. They are not perforated however.



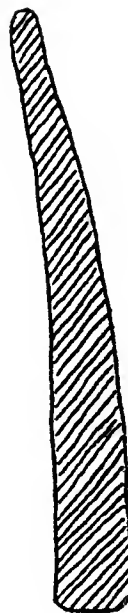
Sherd C, plan view, slightly smaller than actual size



Sherd C, profile



Sherd D, rim sherd, plan view



Sherd D, profile

The final group of potsherds in the ISHM collections is composed of three sherds, two wall sherds and one rim sherd. They were found on the donor's ranks on the Snake River near Indian Point, Idaho, by Mr. E. L. Stevens. They do not have a museum number. I labeled the rim sherd Sherd E.

The sherds are probably parts of one vessel. The rim sherd indicates that the original vessel was quite different in form, when compared to the other specimens in the collection. The original vessel had a neck and shoulder, and it probably was not flat-bottomed.

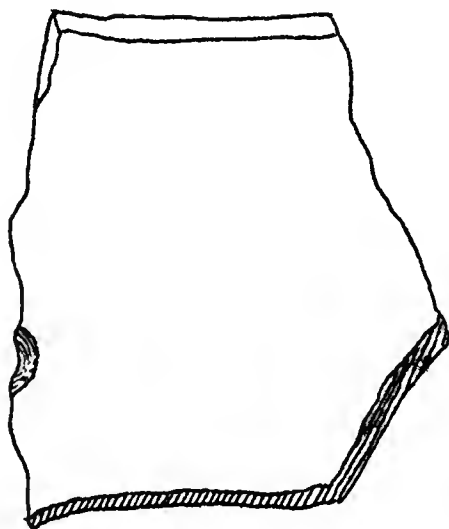
- |                    |   |
|--------------------|---|
| Construction:      | The vessel was very obviously constructed by coiling.   |
| Firing Atmosphere: | Surface color indicates that the original vessel was fired in a reducing atmosphere.                        |
| Core Color:        | Dark gray to black  |
| Temper:            | A very fine sand containing quartz  |
| Texture Core:      | Fine  |
| Surface Finish:    | Very smooth, no striation present.  |
| Luster:            | Dull  |
| Surface Color:     | A dull gray-brown that reflects more light than the other sherds, possibly because the surface is smoother. |

Vessel Size: No data

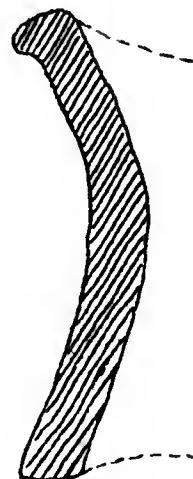
Base: No sherds

Rim: The rim differs from all the other specimens in that it has a pronounced lip which is flat and smooth (see below).

Remarks: In general this vessel was not as crudely finished as the others in the collection.



Sherd E, plan view



Sherd E, rim form

### Speculations and Conclusions

The foregoing descriptions demonstrate that the predominant vessel form from the state of Idaho is the flat-bottomed, basal-flanged, undecorated, cooking pot. Only ten sherds indicate the possibility of other forms within the state. These are the seven thin walled sherds picked up by the author at the Little Canyon Creek site and three sherds from Indian Point. The latter may represent trade ware because of marked differences in vessel form, rim form, core texture, surface finish and temper.

The predominance of the flat-bottomed vessel form and the absence of decoration set the Idaho specimens apart from some of the Shoshoni ceramics of western Utah and eastern and southeastern Nevada. Shoshoni ware sherds from western Utah include jars with pointed bases (i.e., conical) as well as "flower pot" forms. This collection also includes sherds with fingernail impressions vertically placed in horizontal bands just below the rims, and some which have overall indentation (Rudy, 1953:94 and Fig. 58a). In all other respects, the ware is similar to the Idaho specimens.

The conical bottomed sherds and the fingernail impressed sherds from western Utah, while not occurring in Idaho, do have counterparts in the Southern Paiute Plain Utility Ware from eastern and southeastern Nevada. There flat-bottomed vessel forms are absent, and conical-based vessels which are decorated with fingernail impressions represent 26 per cent of the ware. The balance of the sherds indicate undecorated bowls and jars having semi-pointed bases, more or less conical in form (Baldwin, 1950:54).

It is not clear whether the flat-bottomed sherds from western Utah are decorated with fingernail indentations. It seems probable that Rudy lumped conical-based decorated and undecorated sherds very similar to the Southern Paiute ware under the general category of Shoshoni ware. This is tenable since the sherds came from an area known to have been occupied by the Paiute, Gosiute and the Ute, all Shoshonean speaking tribes (Rudy, 1953:98).

The apparent areal distinction between the flat-bottomed Shoshoni vessels from Idaho and the conical-bottomed vessels from western Utah is lost in a classificatory scheme which lumps flat and conical-bottomed vessels together. Therefore, it may be desirable to break this utility ware down into types, if the apparent areal variations in vessel forms, temper and decorative techniques are substantiated by subsequent investigations.

Unfortunately, data accompanying the archaeological specimens of flat-bottomed vessels and sherds from Idaho gives no clues to tribal or cultural affiliations. Descriptions by early travelers and ethnographers are generally incomplete, but there is ample evidence that pottery was made by the Shoshonean groups of Idaho, as well as by groups from adjacent areas.

Rudy states that the ethnographic records of Steward (1941:242) and Stewart (1941:435; 1942:341) leave little doubt that the Shoshone of northern Utah and Nevada and southern Idaho made pottery (Rudy, 1953:97).

Wedel's researches into the same question indicate that Lewis and Clark saw clay pottery among the Northern Shoshone of the Lemhi River (Thwaites, 1904-05:vol. 3:19), and that the Kutenai (Schaeffer, 1952), Blackfoot (Ewers, 1945) and the Gros Ventres (Flannery, 1953:65) also manufactured flat-bottomed pottery (Wedel, 1954:406).

To these references I can add only one account by a first hand observer, John Minto. Minto encountered a "nest-like" house while following the old Oregon Trail near Salmon Falls, Idaho. He entered and noted that:

"A large unevenly molded earthenware pot stood near some live coals of burning sagebrush . . . The pot itself took most of my attention, as it seemed to have been made of common brick clay, but had no crack or flaw. It was beyond doubt of Indian manufacture." (Minto, 1844)

Thus, there is evidence that the proto-historic Shoshonean peoples made flat-bottomed pottery, yet the problem of the cultural affiliations and the chronological implications of Shoshoni ware remains unanswered. However, certain suggestions concerning possible origins and relationships of Shoshoni Ware have been offered.

De Laguna suggests that the vessel Schellbach described in 1930, and another flat-bottomed, fine sand tempered vessel built up by a patch coiling method (Washington State Museum No. 2-564) ". . . may represent an isolated extension of Southwestern pottery".

Wedel points out the close similarity in form between flat-bottomed basal-flanged earthenware vessels and certain steatite vessels from the upper Yellowstone drainage, and states that these similarities ". . . may reflect the same form concepts carried over into, if not transferred from, another medium" (Wedel, 1953:408). This statement would also apply to several stone bowls from Idaho in the ISHM collections and the earthenware vessels described in this paper (see Figs. 9 and 10).

H. Douglas Osborne (1955, personal communication) is of the opinion that Shoshoni pottery does not take its shape from stone bowls, but that ". . . the forms it follows can be found throughout the north into the Jomon (Japan), then through the Arctic and down into the old Southeast in what is known as the Baumer Focus". He further states that Shoshoni pottery ". . . stems from the ancient Boreal and Woodland cultural thrust which probably worked on over the Straits and down into the Southeast and the northern Plains sometime in the late Archaic period".

Mulloy, on the other hand, points out that sherds of flat-bottomed pottery he recovered ". . . along a probable trail through Pryor Gap in western Big Horn County, Montana" and from the upper one foot level in and about Pictograph Cave near Billings are associated with contact materials and they do not appear to be related to any of the known Eastern or Southwestern ceramic types (Mulloy, 1952: 136 and passim).

On this point, Wedel states (Wedel, 1942) that eastern wares, such as the Paint Creek pottery from central Kansas, a mid-sixteenth century Wichita Manifestation, and the much earlier Baumer and Crab Orchard wares of Illinois, are similar, but that he sees ". . . no good reason for postulating a direct connection" between Yellowstone Basin Shoshoni ware and these earlier eastern wares. Likewise, he does not rule out the possibility of a western or ultimate southwestern source for the ceramics of the Montana-Wyoming region, and he even suggests what he terms "a less likely" northerly source (Wedel, 1953:406).

Still another view on the origins of Shoshoni ware is held by Rudy (1953: 75 and passim) who points out the stratigraphic relationships between Shoshoni and Promontory pottery and Pueblid ware from northern Utah. Pueblid ware is clearly of Southwestern origin, and it tentatively dates from 500 to 1200 A. D. Promontory ware occurs both stratigraphically above Pueblid wares and with Pueblid wares. Shoshoni ware, on the other hand, has always been found in the topmost levels where other pottery types occur. Rudy has collected sherds which appear to be transitional between Promontory and Shoshoni wares, and he suggests that the Promontory culture may be "proto-modern" Shoshone. Rudy offers no suggestions as to the origins of Shoshoni ware other than that it is probably related to the earlier Promontory ware. Jennings believes that Promontory pottery may derive from the northern Plains (Wormington, 1955:116). Thus, the ultimate source of Shoshoni Ware, implied by combining Rudy's and Jennings' findings, would be the northern Plains.

In conclusion, on the problems connected with the origin and relationships of Shoshoni pottery, which are the most vital for an interpretation of the cultural history of Shoshonean groups, I hold the following opinion: I do not think that Shoshoni pottery originated in the Southwest. For example, the ties of the pottery of a Shoshonean group as far south as the Southern Paiute are with a general Woodland type, rather than with the Pueblo and Hohokam pottery (Baldwin, 1950:54). Certainly Shoshoni ware cannot be tied to the Pueblid occupation of northern Utah; nor do the flanged, flat-bottomed vessel forms have counterparts in the Southwest. In short, I think Northern Shoshone groups picked up the idea of pottery-making on the Plains and that they practiced the art long enough for tribal or band variants in vessel forms to develop, which may, or may not, have been influenced by pre-existing stone bowl forms.

With reference to the specimens of Shoshoni pottery from Idaho which led to this paper, my views are as follows:

1. Since Northern Shoshonean non-agricultural bands are known to have occupied the Snake River and its tributaries in Idaho, and they are known to have used earthenware utility vessels, then they probably made the vessels described in this paper.
2. The known vessels and sherds from Idaho are predominantly flat-bottomed, basal-flanged and undecorated, and they differ in the amount of mica in the temper and paste. It may be possible and advisable to separate some of the Idaho specimens from Shoshoni ware known elsewhere, possibly into a "Northern Shoshoni Utility Ware" type, in order that area, and possibly time, distinctions can be made.
3. There is a genuine need for systematic archaeological excavations to be carried out in the state of Idaho. Until this is done, much of the cultural history of Northern Shoshonean groups will remain in the realm of conjecture.

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## SERI ETHNOZOOLOGY: A PRELIMINARY REPORT<sup>1</sup>

Borys Malkin

In this paper I shall attempt to summarize briefly some of the possibilities inherent in ethnozoological studies. Ethnozologies, published so far, have either stressed only the economic or medicinal uses of animals or have just included them as part and parcel of mythology and religion. The emphasis here, on the other hand, is primarily on the aboriginal knowledge of natural history and naturalistic concepts about animals. A comparison with the actual situation in nature will be frequently made in order to test the acuteness of the native observation.

This account is part of a wider comparative study in ethnozoology of several aboriginal groups. Additional field work has recently been completed among two other tribes, the Cora in Nayarit, Mexico, and the Sumu in northern Nicaragua.

Ethnozoological studies of such scope require much more extensive background in natural history than anthropologists or even zoologists today are likely to have. One has to deal with very diverse groups of animals and I have found my own knowledge of the subject repeatedly inadequate on many occasions. It is hoped that a study of this sort will attract individuals who will cover more satisfactorily the entire range of the animal kingdom.

### Economic Uses

Almost all major classes of animals, with the exception of the insects, are used for food. Only a very limited number of species serve other purposes such as trade with the Mexicans. Among these are various species of large fishes, sea-turtles and a number of shells. None are used for the basic non-dietary products such as utensils, clothing, and other items of the material culture, for these are purchased ready-made in the local Mexican "tiendas" (small general store).

As a major source of income for their livelihood the Seris depend mainly upon a few commercially significant species of large fish and sea-turtles. Yet they do exploit a wide range of the animal environment as a source of additional food. Of the total number of species of animals<sup>2</sup> upon which information has been available, 45% were reported as economically exploited. The table below gives the breakdown of the major groups.

<u>Class</u>	<u>Species Reported</u>	<u>Species Exploited</u>	<u>Percentages</u>
Mammals	21	9	46
Birds	24	6	25
Reptiles and Amphibians	25	11	44
Fish	44	23	52
Molluscs	36	21	58
Crustaceans	10	2	20
Total:	160	72	45

These figures show clearly the dependence of the Seris on marine life for a major source of their diet. Today, pinta, baya, culon and sardinera are their primary source of income with meat and sea-turtles ranking second in importance. Several species of clams, limpets and gastropods supplement this diet.

All other animals represent only incidental additions to the menu. During the last war, sharks and mantas were hunted extensively for their liver, then a source of vitamin D. But since the war, the demand for shark liver has declined and because of this, a considerable income for the Seris has been lost. Shark and manta fishing have been abandoned for these fish were taken only for the commercially profitable liver and not for their flesh.

### Fishing and Hunting

Seri fishing techniques are simple. In the past they used double-pronged spears and for the larger fish, harpoons. Today the spears are employed chiefly in fishing while the harpoons are reserved exclusively for sea-turtles. Hook and line fishing was introduced after 1930, as Kroeber (1931) saw none during his visit to Kino in 1930, and it is now the standard method of fishing. An abortive and unsuccessful attempt was made several years ago with net fishing. Another change has occurred within the past fifty years. The old balsas have been replaced by flat-bottomed plank boats outfitted with five-horsepower motors or sails. These motors, incidentally, are leased from the Mexican fish traders because none of the Seris are rich enough to own one.

Bait is obtained by dynamiting schools of small fish in coastal waters or by collecting them at low tide in the tidal pools and from under rocks. Fishing usually begins at dawn and lasts until noon when, as a rule, all of the "pangas", as the boats are called, return to Desemboque. In stormy weather no fishing expeditions are made and when this occurs, starvation becomes a real menace. Harpooning of sea-turtles takes place far out in the Gulf. It is done only at night in exceptionally calm weather by the light of torches or Coleman lanterns.

Hunting as it is done today has changed from the time of McGee's visit in 1894-95. The bow and arrow has disappeared completely except for a crude and diminutive form used as a toy by small boys. Iron spears once used in shark and manta hunting are now carried primarily as a weapon against the numerous and much feared rattlesnakes. They are said to be used occasionally in the peccary hunt. Old .22s or 30/30 rifles are owned by several of the men, some of whom specialize in hunting.

Game pursuit is usually done on foot, mostly in the winter and very little in the summer. The intense heat of the desert in the summer makes hunting unattractive. The most frequent trophies are the Sonoran bighorn, peccary, cottontail and jack-rabbits. Sometimes, semi-wild burros, running loose on the adjacent extensive Mexican "rancherías", are poached for meat. The peccary is the only animal hunted with the aid of dogs. Large rodents are dispatched by sling-shot, stick, stone, or shot with a .22 caliber rifle. Birds, such as sea-gulls, ducks and pelicans, are clubbed, stoned or shot with a small caliber rifle.

While fishing and hunting are primarily men's occupations, the gathering of the terrestrial and marine animals is almost exclusively women's work. Rattlesnakes and other reptiles are often killed and brought to the encampments by the women from their morning trek into the desert after firewood and fruit. Small fish and marine invertebrates in the tidal pools are collected by women, aided by children of both sexes.

Preparation of meat is quite simple. It is either boiled in hot water with salt added as the only seasoning or else roasted whole, if small enough, over an open fire with or without a grill. The use of spices such as tomato sauce, chili, peppers, and the like, depend upon the tastes of the individuals and also upon the availability of money.

In individual competence as hunters or fishermen the men show a great deal of variability. Some excel in fishing while others do so in hunting. Hand in hand with this, goes the degree of knowledge of the local natural history and, as expected, the best fishermen lead in the knowledge of fishes while the best hunters possess the most extensive knowledge of terrestrial animals and insects. It has also been observed that boys were far ahead of adults in their knowledge of inconspicuous or otherwise commercially unimportant creatures such as insects, obscure marine invertebrates and small fishes. Interest in the commercially or otherwise economically important forms of animals unquestionably becomes overwhelming in adult life while much of the natural history lore learned in youth is forgotten.

#### Food Preferences and Taboos

A number of animals were reported as being a part of their diet in the past but which were not used at the present time. Several species of shells collected from kitchen middens along the coast were thus identified. In some instances it has been denied that a certain animal was used for food; yet, later when such a beast was brought to the camp, it would be added to the menu. Undoubtedly, some of the species were held in low esteem as food and the Seris preferred not to admit eating them.

Large fishes, especially pinta and baya, sea-turtles, and the very large chuckawalla lizard, which is brought back from rare expeditions to San Esteban Island, are the preferred cuisine. Cochi fish, also called puercos, are disdained. Large catches of these were frequently brought in from the sea, only to be unceremoniously dumped on the beach and left to the dogs and the vultures. But when other fish were scarce, the puercos were eaten. Pelicans, once an

important source of meat for the Seris, and sea-gulls are occasionally killed and likewise abandoned, except when famine threatens. The above examples most likely apply to other varieties of animals as well.

No specific food taboos were discovered in the course of field work except the unexplained reluctance to eat certain species. McGee (1898) reports a taboo on eating sea-lions but my informants asserted that these mammals were hunted in the past for both their flesh and hide. All of my informants denied that the Seris eat cougars, and this abhorrence has been confirmed by the Mexicans. Yet the Mexicans themselves do hunt and eat these big cats. McGee (1898:196, 202) again casually mentions cougars and jaguars as being hunted by the Indians but gives no evidence for this. It should be mentioned that only a few Seris know what sort of an animal the jaguar is, and these know it only from hearsay as "huge animal inhabiting the mountains far in the interior". There are occasionally some migrant jaguars in Seri territory.

### Pets

The Seris have only a limited variety of pets. Dogs are very numerous, each family keeping many of them. Although they maintain that the dogs are acquired in order to keep the coyotes away from the camps, there is nothing in their camps that a coyote would want to steal. There are a few cats and several species of wild desert doves which are often caged. Wild animals in captivity are, as a rule, those which accidentally come into the hands of the Indians. On one occasion a badger was kept tied to a house post for a couple of weeks and fed on fish heads, snakes, lizards and water until one night when it made its escape.

Of the insects, only the singing male Cicadas are captured by the roving Seri boys. These are tied to a long thread and having their fore-wings partly clipped, they are released into the air like kites. Local Mexicans also provide a similar kind of toy for their children.

### Classification of Animals

Seri taxonomic notions of the animal world are vague and indistinct. No conscious classification exists and perhaps none should be expected of non-literate people. But there is a random association of animals based on the external similarities of form, habits and habitat. A clear distinction is made between plants and animals. Quite obscure animals, for example, the Echinoderms, Holothurians, Coelenterates or barnacles, are classed as animals and not as plants. It seems that voluntary movement is used here to distinguish the two categories. Thus, informants insisted that sea-anemones and jelly-fish are animals and not plants. One difficulty arises in the case of sessile barnacles. It is hard to account why those growing on the sea-turtles are classified as animals and are called "turtle fleas".

In the assemblage of major animals, the mammals form one group and birds and fish others. Since general similarity of form and not real structural affinities are the primary reason for these associations, the bats "are not birds, but are probably mammals because they have fur". Thus, sharks and

mantas are classed together and separate from the fishes while whales and dolphins represent another group; the latter two being considered as neither mammals nor fishes but as a category of their own. Yet, in many instances, especially in dealing with the smaller categories, natural affinities are placed together as is well shown in the case of many insects. For example, tiger beetles of the genera Tetracha and Cicindela are called by the same name, k'x'o·ps. Some of the Buprestid and Tenebrionid beetles also share a common name. In general, for the insects, similarity of shape, color, pilosity associated with the similarities of the habitat, behavior and particularly similarities of movement suggested natural affinities. This is very clear from the association of the two different kinds of tiger beetles in which the determining factors are the type of flight and running behavior plus the type of habitat in which both happen to live.

### Sex Differentiation

All animals are said to have both the female and the male sexes, although it is not always possible to tell them apart. In almost half of the total number of species for which information has been obtained, the informants were unable to tell whether the sexes were different or alike in appearance. This proved to be particularly true in the case of insects. Of the remainder, in more than sixty cases, specific individual traits were given for the distinguishing of the two sexes. In most of these, the males are said to be larger than the females, which is actually the case. Another generalized trait of this sort was the supposedly darker coloration of the males. An analysis of these responses and a comparison with the actual sexual differences revealed that this was most likely a cultural pattern in operation and not a result of direct observation. This is certainly the reason why several pairs of different insects belonging not only to different genera but also to different orders were classified as being a male and female of the same kind. Thus two different Scarabeid beetles of the genera Ligyris and Cyclocephala were considered the same, with Ligyris being the larger and darker of the two, it was identified as the male. Informants also guessed that the male of the American Cockroach was darker and larger, not knowing that the female is quite different in appearance in being wingless. Confronted with several specimens of the grasshopper, Anconia integra, the informants suggested that the largest of them was a male. In another instance, the darkling beetle, Endrodes vendricosus, was described as being the female of Arenivaga, a round roach, the smaller size of the beetle suggesting femaleness. But these examples do not exhaust the multitude of ways in which the Seris distinguish between the sexes.

For the land mammals, one of the standard characteristics distinguishing them was said to be the presence of "dos huevos", literally "two eggs", in the male. For the kangaroo rat it is the protruding penis which denotes the male, while for the bighorn it is the presence of larger horns. In the mule deer it is only the male that has horns and then only seasonally. An interesting attempt to generalize sexual differences in several species of lizards was made. Informants first searched for "ridges" on the ventral side of the femora, which supposedly denote the males. This, however, is a trait typical of separate genera of lizards and not of the sexes. But if here they have failed to uncover actual sexual differences, they have succeeded in the case of the gridiron-

tailed lizard, Callisaurus draconides inusitans, in which the males have blue abdomens, this fact being quickly pointed out by the informants. This association of more colorful pattern with the male was applied to several of the molluscs and to many of the fishes. In the fishes, another and standardized sexual distinction has been given; the males being longer and narrower and less bulky than the females. More specific characteristics have been given in sexing sharks and mantas. Here the males are said to have "two penises" near the vent. Indeed, they do have two claspers which are absent in the females. Interestingly, no sexual differences were given concerning birds. The informants simply could not tell the female from the male bird. This is not surprising at all for in most birds sexes cannot be distinguished without dissection.

### Knowledge of Habitats

Habitat distinctions are sharply impressed upon the Seris. They are well aware of the fact that various marine animals and terrestrial animals have strong preferences in this respect. They know that some of the marine animals prefer deep waters while others prefer shallow water and that some will be found on sandy bottoms and others on rocky bottoms. They also know of similar preferences among the terrestrial animals; some being partial to the proximity of fresh water, others to sandy beaches, some to the mountains and others to the desert. This knowledge is frequently exact and often extends to quite small and inconspicuous creatures. Presented with Hydrophilus insularis, a large water beetle, the informants unhesitatingly gave its name as ʔax·hañekáa, the prefix ʔax meaning water. They indicated also that it lives in fresh water. Yet this beetle is extremely rare in the locality, only one specimen having been seen and captured in the course of my field work. A giant tarantula-hunting wasp, Pepsis, was also said to live near water and its name has been given as ʔax kax. These tarantula killers indeed do often congregate near water. The tiger beetles were invariably associated with the "playas" and marine beaches, even when the informants were not told where they were captured and when they came from localities distant from Desemboque.

Likewise, the nesting grounds of egrets in the mangrove mud flats of the Estero Sargento, an estuary south of Desemboque, were correctly associated with the mud where these birds find an excellent feeding ground. In giving the distribution of the coastal animals, the informants often indicated their presence or absence at Porto Kino or Desemboque, stressing that the sandy sea bottom at Porto Kino and the rock sea bottom at Desemboque accounted for this fact. This is especially true of many fishes which prefer one or the other of these two habitats.

### Seasonal Differences

The seasonal turnover in Sonora from winter to summer is very great; the summers being extremely hot and the winters quite chilly. This was particularly stressed by the informants in relation to reptiles and insects which are not much in evidence during the cold season. Most mammals, on the other hand, were indicated as equally numerous in both seasons. The fishes, accordingly, migrate a great deal. Most important commercial species were said to travel north in the spring and to return south in the late fall. Similar migrations were

ascribed to whales. Some of the birds are supposed to be migratory, but the direction of their migration is a mystery to the Seris. The swallows "pass in great numbers" but that is all that was known about them. The ducks winter on Isla Patos and then depart for the north in the spring without ever laying any eggs. Hence, their eggs were totally unknown to the informants. Egrets are said to remain in Estero Sargente for the winter.

Sometimes seasonal differences in the appearance of an animal were noted; for example, the loss of horns by the male mule deer during the winter. Seasonal differences are more sharply impressed upon the Seris than on either the Cora or the Sumu. This is not surprising because seasonal changes in Sonora are more contrasting than in either Nayarit or Nicaragua.

### Age

The Seris find this feature of animal life the most difficult to ascertain. Hardly any responses were given that could be correlated with the actual length of life. Most replies were standardized according to the individual notions of the informant, such as "4 or 5 years", "about 6 months", and so on. In general, the larger the animal the greater the longevity attributed to it. In many cases it has been suggested that "perhaps the animal dies with the beginning of the cold season". This was frequently said especially in regard to reptiles. There is very little understanding of reptile hibernation through the winter.

### Transformation and Immature Stages

No generalized idea of the transformation or metamorphosis of one kind of animal into another has been discovered, with the exception of two instances among the insects. Maggots are correctly associated with flies, but this is not surprising in an encampment where untold millions of them infest offal and other remains. It is also possible that this idea came to the Seris by way of the more sophisticated Mexicans. A hawk moth larva, found in great numbers on the jimson weed, was said to turn into a butterfly within 10 to 20 days if it rained, but if the rains failed, it would continue in its larval stage. These two unconnected cases represent the total knowledge of insect metamorphosis discovered in the course of my field work.

In other animals, the immature individuals are always described as being similar to the adults except for their smaller size. In addition to this, the young of several of the birds were supposed to have differently colored plumage.

### Nocturnal and Diurnal Variation

As expected, there is very little knowledge of the activity of fishes, but there is a great deal of accurate knowledge of these phenomena for the mammals, many birds and reptiles. By way of illustration, rattlesnakes and most other snakes are reported as coming out at night and resting in the ground during the day, whereas the opposite is noted for the lizards. They are most active in the brilliant sunshine and go into hiding at night. For many mammals, decreased activity was noted during the day. Peccary, coyote, deer and cottontail were some of the mammals listed.

### Food Habits

The food habits of all but a very few of the insects are totally unknown to the Indians but they do have accurate and detailed knowledge of the food habits of fish. This is probably due to the great economic importance of fish to the Seris. They also have very full data for the mammals, including bats, which are said to be insectivorous. The responses varied concerning lizards and often did not parallel the situation in nature. In some instances, the acuteness of the observation was remarkable. Thus, the Northern Crested lizard, Dipsosaurus dorsalis sonorensis, which occurs on the sands of Rancho San Francisco, inland from Desemboque, has been mentioned as climbing trees after fruit. Even more unusual, the leopard lizard, Crotaphytus wislizeni, was said to feed on other species of lizards. And indeed, it is one of the very few species of lizard in the region which habitually devours others of its own kind.

### Mating Seasons, Eggs and Nesting

In most of these aspects of natural history the native information is quite deficient. In the case of birds, it is assumed that mating occurs in early spring, that the eggs are laid a month later, that in another month the young hatch out and about the third month they fly from the nest. This sequence seems to represent a conventionalized idea rather than a reflection of direct observation. Another difficult question for them to answer, with respect to the reptiles, was whether the young are born alive or whether they hatch from an egg. Only a few of the species are correctly described, among them the rattlesnakes. Sharks and mantas are said to give birth to live young.

Guesses as to the number of eggs varied from fairly accurate estimates for some of the birds to rough approximations ("many") for some of the reptiles and most of the fishes. The knowledge of bird nesting habits was fair. The informants had no difficulty in pointing out the particular localities where one or another species of bird nests nor in the identification of the nest by its shape and construction. This was especially true of the cormorants, egrets, sea-gulls and pelicans. All these are either marine or shore birds as will be noted.

### Animals: Venomous and Otherwise Feared

In contrast to the Mexicans, the Seris fear relatively few animals and they are almost always those which can inflict a vicious or toxic bite or sting. The Mexicans, on the other hand, are afraid of a great many animals. European folklore plays a part in this as does unfamiliarity with the desert and the consequent fear of it.

The Seris fear most the rattlesnake, both the Western Diamondback and the Sidewinder. These snakes, they say, bite with their fangs but the venom is located in the rear of the body, about two inches in front of the anus. A plant called "huaco" (?) is used as a remedy both in the form of a drink and as a dressing for the wound. The Mexicans claim this remedy is effective. The coral snake is also considered to be venomous although the Seris believe that its bite is fatal only to Mexicans and not to themselves (!). Most of the



other snakes are also viewed as venomous but are claimed to be of mild disposition and do not bite people.

Among the lizards, curiously, the one feared most is not the highly poisonous Gila Monster, but the harmless little gekko, Coelonyx variegatus sonorensis, which lives in fallen and dried-up saguaros. The informants could not even be induced to touch specimens killed in alcohol. It is believed that this creature could kill humans either by contact or by allowing them to inhale its vapors which cause a fatal lung illness. This little lizard is reminiscent of the European salamander in some ways. The Mexicans call it locally "salamancesa", and attribute to it the same unpleasant traits which the Seris do. Since this little lizard does resemble the European salamander and the beliefs about it are quite similar to those in European folklore, it is possible that here is a case of a transfer of this folklore upon an animal of a different kind. These beliefs eventually perhaps diffused to the Seris.

A small desert night lizard, Xantusia vigilis, is also very much feared and is frequently confused with the gekko. It lives in an identical habitat. A toad, Bufo alvarius, is said to bite with its tongue and is supposed to be able to inject venom with it. Its blood and "milk" are also very toxic.

Several of the arthropods are believed to be dangerous. The Seris claim that the blood sucking cone-nosed beetle, Triatoma rubida, stings with its mouth parts and also causes an illness called syexhiš' i ?e•kemep, which can be fatal to children. This bug actually is a vector of the Chagas disease and its repeated bites may cause a sensitization to them. But in this case it is impossible to tell which is the situation without a clinical analysis. Scorpions, which sting with their tails, are considered to be very dangerous. The Black Widow spider, which is very numerous in the locality, is also viewed as very toxic and is said to be sometimes fatal, although a few days' illness is all that its bite usually causes. The tarantula spider also bites but its venom is never fatal. The Sun spiders, Soliphugida, are venomous but their venom supposedly kills horses but not people. All of these spiders and their relatives, according to the informants, sting with the rear end of their body in wasp-like fashion. No medicant is applied on the bite, nature being allowed to take its own course in the recovery.

Concerning other animals, the sting rays are much feared because of the venom in their thorns and their ability to inflict a nasty wound. The bats, according to some informants, can cause disintegration of the body by spitting on it and they also have venom in their tongues, although this belief was not shared by one of the more sophisticated informants.

Only a few animals are considered to be dangerous to eat owing to their toxicity. The toad is one and a little fish, Sphaeroides annulatus, is another. Of this fish it is said that "one hundred years ago, a man ate one; he died", hence the avoidance. However, rattlesnakes are eaten with relish; only the head and the part of the body where venom is believed to be located being discarded.

The above discussion suggested some of the differences in the attitudes toward animals between the Mexicans and the Seris. While the former fear many,

the latter are largely unconcerned with by far the greater majority of them. If there is any magical importance attached to any of the species, it has not been discovered in the course of this field work and this fact has been corroborated by other recent observers.<sup>3</sup>

### Summary

Extensive field work of this sort has many ramifications. One of the main items investigated has been the acuteness of the native observation of animals. In the case of the Seris, this knowledge progressively increases both in volume and in accuracy with the increasing economic importance of the group. The mammals and large fish are the best known followed in order by birds, reptiles, smaller fish, insects and marine invertebrates. It is also obvious that local ecology, habits and anatomy of the various species of animals set definite limitations upon observation. Lack of understanding of the hibernation of reptiles through the winter is a case in point. Another example is in the Seris' inability to distinguish between the sexes of birds. Purely cultural factors are also potent as can be seen in the standardized responses to the questions about the age of animals and the development of birds. Seri knowledge of animals is remarkably free from mythology, although a number of animals are known to have had mythological significance in the past.

There is little fear of animals except of those which are actually dangerous.

An interesting fact emerges from the comparison of the particular aspects of the knowledge of natural history. Namely, that this knowledge is not always symmetrical in that some facets of natural history are far better known by the Seris than others. An excellent illustration is provided here in the complicated ways of sexing animals, in their extensive knowledge of the food habits of some of the animals and their ecological environment, and by their very limited ability to guess correctly the age of animals.

Not all of these differences can be accounted for in natural terms and it is suggested that the answer to this asymmetry lies, perhaps, in the cultural factors unaccounted for in this study. In spite of their dependence upon a relatively few economically important species of animals, the Seris do make use of much of their animal environment in their diet, as would be expected of a marginal people who still live today in a fishing and gathering economy.

### FOOTNOTES

1. This field work was made possible by research grants from the Department of Anthropology, University of Washington. Most of the work was done in Desemboque, Sonora, during the summer of 1953 with some additional work there in May 1955.

For much help in carrying out this field work I am indebted to my friend, Leo Sandoval, a school teacher in Desemboque.

2. In addition to these 160 species of animals, data has been obtained on more than 100 species of insects and their terrestrial allies, none of which are eaten.
3. Edward Spicer and William Smith, Jr., in verbal communication.

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