# AN EXAMINATION OF THE BOTANICAL REFERENCES IN THE ACCOUNTS RELATING TO DRAKE'S ENCAMPMENT AT NOVA ALBION IN 1579

A Research Report of the Drake Navigators Guild

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# PREFACE

The following study is made as a part of the comprehensive research by the Drake Navigators Guild in establishing the site of Sir Francis Drake's careenage and thirty-six day encampment at Nova Albion on the California coast in 1579.

The Guild has found that previous research in botany, as related to Drake's stay in California, has been of neither sufficient depth or scope to satisfy the serious needs of the historical researcher. The Guild's intent is to examine closely the botanical references in the written accounts contemporary with Drake relating to his stay at Nova Albion, with the purpose of seeing if these details fit the site identification previously established by the Guild as being at the west side of the mouth of Drakes Estero at Drakes Bay.

## ACKNOWLEDGEMENTS

This study is an interrelationship of the disciplines of anthropology, botany and history.

Among California anthropologists, Dr. A. L. Kroeber stands above the rest, yet under his editorial name in the Handbook of the Indians of California are the unmarked works from which Kroeber drew, of many outstanding researchers, such as Barrett, Nelson, Waterman, Gifford, Mason, Sapir, Dixon, Harrington and many others who unhesitatingly offered their materials for this comprehensive, authoritative book. It is this spirit of devotion to subject above self that is acknowledged and carried on in this study by the Drake Navigators Guild. It is an appreciation of the care and integrity of the recorders and scholars of the past and present that lays the groundwork for contributions of the future in the field of historical research.

The Guild has relied heavily upon the dedicated work of Mr. John Thomas Howell, Curator of Botany at the California Academy of Sciences. His comprehensive listing of local Marin County plant conditions has helped immeasureably in securing a rounded picture of the situation encountered at Nova Albion by Drake. If Mr. Howell has not always been given proper credit in the footnotes, it is only because his work is so completely an integral part of this study -- passim. His personal help and encouragement have been of the same high calibre as that extended by the Botany Department of the University of California at Davis where Dr. John Tucker and his staff have unhesitatingly given of their time and use of facility in the spirit of research.

This study has been the result of the close cooperation among our Guild members: Robert Parkinson with research, Daniel Dillon with editing, Anne Wilson with typing, and the others by their encouragement.

# AN EXAMINATION OF THE BOTANICAL REFERENCES IN THE ACCOUNTS RELATING TO DRAKE'S ENCAMPMENT AT NOVA ALBION IN 1579

Notes bearing on the general nature of the land, climate, and inhabitants of Nova Albion, as encountered by Francis Drake in 1579, are contained in several accounts of the voyage. The purpose of this report is to identify, list, and examine these notes to determine if they provide clues that might aid in the botanical identification of Nova Albion.

The World Encompassed by Sir Francis Drake. . . "Carefully collected out of the notes of Master Francis Fletcher Preacher in this imployment, and diuers others his followers in the same. . ." was compiled by Sir Francis Drake's nephew, Sir Francis Drake, Bart., and published in 1628. The text used in this study is from The World Encompassed and Analogous Documents, edited by N. M. Penzer and published by The Argonaut Press, London, in 1926.

"The famous voyage of Sir Francis Drake into the South Sea, and there hence about the whole Globe of the Earth, begun in the yeare of our Lord 1577," appears in the 1589 edition of Richard Hakluyt's The Principall Navigations, Voiages and Discoveries of the English Nation. The text used in this study is from the photolithographic reprint published in 1965 by the Hakluyt Society in two volumes. This account appears in volume two.

Annales, The True and Royall History of the famous Empress Elizabeth was published in 1615 in Latin by the great English historian William Camden. A French translation was made in 1624, and from this an English translation was published in 1625. The English account appears in Henry R. Wagner's Sir Francis Drake's Voyage Around the World.

"The Anonymous Narrative" is the name now generally applied to Harleian MSS No. 280, Folio 23, in the British Museum. This account has a brief account of Drake at Nova Albion, and is also reprinted in Wagner.

"The Second Declaration of John Drake" appears in Wagner and in New Light on Drake, by Zelia Nuttall. This is a statement given before the Inquisition at Lima, Peru, in 1587, by the young cousin of Francis Drake who had been on the voyage of circumnavigation. It contains a brief account of Nova Albion.

Richard Madox, chaplain on the Edward Fenton expedition in 1582, kept a diary and other notes. One page of notes made from conversations with officers who had been on the Drake expedition came to light and was published in The Pacific Historical Review I (Sept., 1932) by Miss E. G. R. Taylor, "Francis Drake and the Pacific".

Previous researchers have considered certain of the clues provided in the above accounts as they may pertain to other subjects, but there has been no previous comprehensive listing and analysis. The extremely tenuous nature of many of the clues could cause them to be overlooked or disregarded. This paper is presented in keeping with the policy of the Drake Navigators Guild that no pertinent clue to the identification of Nova Albion should be disregarded.

That Drake's party was keenly aware of the flora of the new areas encountered is evidenced by the many direct references in the accounts. Nuño da Silva, the Portugese pilot captured and held by Drake, stated that Drake "carries a book in which he writes his log and paints birds, trees, and seals."(1) This log may contain significant botanical information concerning Nova Albion, but its whereabouts is unknown.

New herbs, especially medical herbs, were eagerly sought by Elizabethan explorers. The Drake accounts mention herbs frequently, but mostly in general terms. The Famous Voyage describes the islands south of the western entrance to the Straits of Magellan as "having there fresh and very good water, with herbs of singular virtue." It describes the flora along the Straits as ". . . the trees seem to stoop with the burden of the weather, and yet are green continually, and many good and sweet herbs do very fruitfully grow and increase under them." This mode of general statement of condition rather than specific details implies: (1) that there may have been some other concurrent form of record providing specific information; and (2) that familiar, favorable statements of condition reflect those extremely familiar to the chronicler, viz. English or other European countryside; these latter conditions containing so many things of a generally familiar nature that it was not felt necessary to single out particulars unless atypical. This second

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1. Translated from Henry R. Wagner, Sir Francis Drake's Voyage Around the World, p. 348.

implication is illustrated by the following descriptives of countryside; one at the Cape of Joy, [2] and the other at Nova Albion:[3]

Cape of Joy (from The Famous Voyage):

> . . . a very faire and pleasant country with an exceeding fruitfull soile, where were a great store of large and mightie Deere, but we came not to the sight of any people: but trauelling further into the country we perceived the footing of people in the clay ground, . . . .

Nova Albion (from The World Encompassed):

> After that our necessary businesses were well dispatched, our Generall, with his gentlemen and many of his company, made a iourny vp into the land, to see the manner of their dwelling, and to be better acquainted with the nature and commodities of the country. Their houses were all such as we haue formerly described, and being many of them in one place, made seuerall villages here and there. The inland we found to be farre different from the shoare, a goodly country, and fruitfull soyle, stored with many blessings fit for the use of man: infinite was the company of very large and fat Deere which there we sawe by thousands, as we supposed, in a heard; besides a multitude of a strange kinde of Conies:. . . .

The description of the Conies was elaborated on, but no other commodities were described beyond the above-mentioned eye catchers. Certainly many other commodities, not specifically mentioned, were seen, including flora. The lack of mention in no way indicated lack of interest or recognition of importance to the observer; it is how the account itself was assembled. Various flora of Nova Albion, such as Petáh and "an herbe much like our lectuce" are described in some detail in other sections of The World Encompassed.

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2. Located just north of the present Rio Grande on the east coast of South America at Long. 50°W., Lat. 30°S. (Approx.)
3. Located at Drakes Bay, California. Long. 123°W., Lat. 38°N.

## PHYSICAL SCOPE OF THE STUDY

The botanical references considered in this paper are in relation to the countryside encompassed by a 15 mile radius from the site of Drake's encampment and hereinafter referred to as the Point Reyes area. (4) The assumption is made that most of the plants indigenous to the area were present in Drake's time. John Howell indicates this in his Marin Flora (5) where on page 1 he states, ". . . the coastal bluffs and ridges of Point Reyes Peninsula are much as they were when Sir Francis Drake landed in 1579; and the broad open hills at the northern end of the county must still appear as they did to the Russians, when, more than a hundred years ago, those colonists looked southward across Bodega Bay from the Sonoma hills of Russian America to the Marin Hills of Alta California." On page 28, he states that even with the inroads of "weeds and civilization" over the last hundred years, much of the early flora has remained.

With Drake's being here less than 400 years ago, and there being virtually nothing to alter the flora for the first 300 of these, there was little chance for any significant change to occur before the Marin County flora was scientifically recorded and catalogued -- such work was begun in 1824 (245 years after Drake) by Johann Friedrich Eschscholtz, a naturalist with the first and second Kotzebue expeditions. Not only was the flora little changed, but neither were the habits of the Indians in their uses of the plants, for their civilization was quite static until influenced by the Europeans.

## CONTEMPORARY WORD USAGE

Except where otherwise indicated, the Oxford Universal Dictionary on Historical Principles is used for interpretation of word usage in the Drake accounts and will be referred to as the Oxford Dictionary. Sources of translations are footnoted.

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4. This distance is taken as the maximum limit of a day's journey on foot through the terrain surrounding Drakes Bay. Drake's inland journey was probably no more than half that distance.
5. John Thomas Howell, Marin Flora.

## BOTANICAL NAMES

A general taxonomy is used for brevity in the body of this work. An alphabetized, complete, and current taxonomy of all botanical names mentioned appears in Appendix B. The sources for nomenclature are: John Howell's Marin Flora [6] and Phillip Munz' California Flora. [7]

## CATAGORIZED LISTING OF ITEMS

The following catagorized listing is the basis for the individual analyses comprising the remainder of the study: [8]

Housing: (p. 6)
rushes; clefts (clifts) of wood; houses; villages

Food: (p. 7)
cheepe; meate Conie & Indian ; a roote they call Petáh; bread; meale; wassaile boales

Clothing, ordinary: (p. 17)
bulrushes; kembing

Clothing, ceremonial: (p. 18)
down (from "an herbe much like our lectuce"); cals (calles, cawle, cawles) of networke (knitworke); knitte; knit; crowne (crownes) of knitworke; string

Weapons, hunting and defense: (p. 20)
arrowes; bowes

Transportation: (p. 22)
canow; rowing

General Ceremonial: (p. 26)
blacke wood; Scepter (scepter, septer); royall mace; great (greate); faire, firm post (Poste, poste); monument; seeds; basket(s) (little baskets; round basket); rushes; deep boale; bags (bagges); Tabacco; Tabáh (Tobàh, Tobâh)

General landscape: (p. 37)
pricking bushes; trees without leaves; stocks of wood; fruitful soyle; riches and treasure(s); ground without greennes

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6. Ibid.
7. Philip A. Munz, A California Flora.
8. A full alphabetical listing of items, their source(s), frequency of occurrence of each item in the source, and page numbers where mentioned in this study, appears in Appendix A.

## ANALYSIS OF INDIVIDUAL ITEMS

### Housing

Rushes are mentioned in both The Famous Voyage and The World Encompassed as being used for bedding in the houses of the inhabitants of Nova Albion. The World Encompassed states: ". . . their beds are the hard ground, onely with rushes strewed vpon it,. . . .." The use of the word rush denoted "a plant of the order Juncaciae having straight naked stems or stalks and growing on marshy ground and on the borders of rivers or ponds," according to the Oxford Dictionary. At Drakes Bay are tules, with the most common being Scirpus paludosus. (9) A layer of these dry tules provides an insulating cushion against the ground.

Clefts, or clifts, of wood were said to be used to build the above-ground portion of the Indian houses. Both words bear the same Elizabethan English usage: pieces of split wood. The clefts were not simply sticks or boughs, but pieces of wood split lengthwise by the Indians. According to The World Encompassed, their bases formed the circumference of the house and were ". . . clefts of wood set vp, and ioyned close together at the top, like our spires on the steeple of a Church:. . . ." which would indicate a number of pieces of about the same length. Some wood easily split by wedges was used. This was probably Coast Redwood (Sequoia sempervirens) driftwood, as it not only would have been readily available from the immediate beach, but redwood was commonly used by the north coastal California Indian tribes; it splits readily, grows straight, and is easily worked because of its softness. Douglas Fir (Pseudosuga taxifolia) or Alder (either Alnus rubra or A. rhombifolia) may also have been used, for they round out the bulk of driftwood. Some exotic woods from all over the north Pacific find their way by winds and ocean currents to the Drakes Bay beaches, but this would form only a small part of the driftwood mass.

The inland village houses were made of "clifts of wood." The World Encompassed states: "Their houses were all such as we haue formerly described, and being many of them in one place, made seuerall villages here and there." It is not clear how far "into the land" Drake had gone "to see the manner of their dwelling," but he probably

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9. See p. 25 for a general listing of the local species.

followed a route similar to that of Cermeño, [10] sixteen years later; in all probability there were well established Indian trails which would not only lead to habitation by a good route, but would keep one from getting lost. If Drake crossed the Inverness Ridge and descended into the Olema Valley -- and the evidence indicates that he did [11] -- the wood for the houses would have been Douglas Fir, California Bay (Umbellularia californica), or Red Alder, for these are the only straight-grained, easily-split, local woods. [12]

## Food

Cheepe is mentioned in the Maddox Diary, [13] and Heizer used this word as one of the lingual clues indicating that Drake's encampment was in Coast Miwok Indian territory. Heizer cites the Coast Miwok word for acorn bread as tcipa (with the tc sounding like ch as in chin); phonetically extremely similar to the Maddox-reported word. [14]

Acorns of various kinds were used extensively by the Indians throughout California for making bread. The acorn of the Tanbark Oak (Lithocarpus densiflora) was particularly esteemed [15] where obtainable and

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10. Raymond Aker, The Cermeño Expedition at Drakes Bay, 1595, pp. 40-43.
11. The World Encompassed states: "The inland we found to be farre different from the shoare, a goodly country, and fruitfull soyle...."
12. The fir forest of the area contains much naturally downed wood in the form of big limbs. These can be easily handled without having to cut down a whole tree and cut it to size -- a difficult task for an Indian. The World Encompassed states that the houses inland were the same as on the shore; "Their houses were all such as wee haue formerly described,..."
13. See E.G.R. Taylor, Francis Drake and the Pacific", Pacific Historical Review, I (Sept. 1932), pp. 360-369. Maddox recorded some of the words and a song the ship officers who had been with Drake had learned from the Indians of Nova Albion.
14. Robert F. Heizer, Francis Drake and the California Indians, 1579, p. 274.
15. Alfred L. Kroeber, Handbook of the Indians of California, p. 293.

is found in quantity on the eastern side of the Inverness Ridge. The White Oak (Quercus lobata) was another preferred tree. Its acorns are large and taste only mildly of tannin when compared with most other local species. It has been found to range as far west as Nicasio, which would be within the 15-mile compass of this study. The Maul Oak (Quercus chrysolepis) is found on the Inverness Ridge. Kroeber indicates that there were some difficulties in processing it, [16] so it may not have been a preferred item. The most common oak is the Coast Live Oak (Quercus agrifolia), whose acorns are quite oily, particularly astringent with tannin, and are generally smaller than the other local species. Kroeber reports that some Indians prized this particular fruit, whereas others did not give it a high rating. [17] Beardsley, in considering the general confines of the Point Reyes Peninsula area, observes, "Oak groves, however, are notably lacking or distant from most settlement areas in the triangle between Pt. Reyes and the Inverness Ridge ; the resulting scarcity of acorns, which were the staple food of the natives of the interior, helps make economic patterns of Indians living near the coast different from those of the interior." [18] This would indicate that the Indians contacted by Drake and Cermeño probably used any acorns available. Cermeño indicated that the Indians used a quantity of acorns, he even took a supply of the Indians' acorns with him on his voyage down the California coast from Drakes Bay to Mexico.

Besides acorns, the Indians used many other fruits, roots, seeds, and bulbs for breadmaking; in fact, nearly anything vegetable which was or could be rendered non-poisonous was used -- often with a tasty addition of insect such as grasshopper. The abundance of Indian mortars in the Point Reyes area indicates a dependence upon ground vegetable matter. The common practice of the Indians was to grind the plant foodstuffs into a meal which was then leached with water to remove any astringent, or toxic ingredients. This treatment was used on the California Buckeye (Aesculus californica), which grows abundantly where fresh water seeps out of the Inverness Ridge and was undoubtedly used here, as was common

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16. Kroeber, op. cit., p. 649.
17. Ibid.
18. Richard K. Beardsley, "Temporal and Areal Relationships in Central California Archaeology, Part One", Reports of the University of California Archaeological Survey No. 24, p. 13.

throughout the range of the plant in California. It is found growing near almost every known Indian site immediately east of the Inverness Ridge.

The World Encompassed mentions that Petáh was used to make bread. It speaks of "a roote which they call Petáh, whereof they make a kind of meale, and either bake it into bread, or eat it raw:. . . ." Petáh was the given Indian name rendered phonemically in the account [19] to denote a root which was eaten in three forms: raw, as meal, and made into bread. There have been attempts to link this Coast Miwok Indian word with the Elizabethan word "potato" [20] which, according to the Oxford Dictionary, was derived from the Spanish "batata" and originally applied to the sweet potato. The World Encompassed mentions "potato" when it tells how Drake was offered "Coquos, Fish, Potatos, and certaine fruites" upon his arrival at the Molucca Islands. Any attempt to interpret the given Indian words in the accounts as English or Spanish words (when there had been no previous contact of these natives with the Europeans) belie the statement of the chronicler and would not be consistant with the account. Hakluyt, as editor of The Famous Voyage, did change words from the original accounts, but as Petáh was not mentioned in The Famous Voyage, it was not altered by him as was Tobàh. [21] If "potato" was meant, then that word would have been used, as in the case of lettuce in the World Encompassed reference: "an herbe much like our lectuce." Wagner opined that Petáh was something other than potato. The word "potato" was in common Elizabethan usage. The consistant superior spelling shown in The World Encompassed would not allow Petáh for

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19. See pp. 32 & 34 for further information on attention to intonation and phonemes (in relation to Tobàh). The attempts to render the Indian speech were made by a first-hand observer.

20. See Heizer, op. cit., pp. 269-270. See Kroeber, op. cit., p. 277. Kroeber used a non-contemporary account, "Early English Voyages to the Pacific Coast of America (From their own, and contemporary English accounts.) Sir Francis Drake III", Out West, Vol. XVIII (Jan. 1903), for his source material on Drake in California. This account had been edited with considerable change from the original interpretation: Petáh became Patah, Conie became rabbet, and horns became Hords.

21. See p. 32.

potato even if the root in question was being referred to by the general term "potato". One can compare the spelling in The World Encompassed with that of Maddox, whose spelling was quite crude even though spelling was most inconsistant in Elizabethan England. (22)

Petáh has been interpreted by Kroeber as possibly referring to the bulb of the Brodiaea, which in this area would be Brodiaea laxa, B. pedunclaris, B. elegans, or B. terrestris, when he states that the term "refers to the Brodiaea and other lily bulbs consumed in quantities by all Californians." (23) According to Heizer, the Brodiaea was a wild onion called putcu in the Coast Miwok Indian dialect. (24) He further opines that Soaproot (25) would also "fill the description", with Soaproot being called haka by the Indians. Neither word approximates Petáh, though there is always the possibility of other locally applied Indian words. Heizer considers that acorns (ümba) may have been meant, but points out that Fletcher, whom he considers the author of the account, was not likely to describe acorns as roots. Root was a commonly used Elizabethan word; the Elizabethan making a clear distinction between root and bulb. Since root was actually used in The World Encompassed, a strict interpretation of the text would rule out the previously mentioned bulbous plants. The Guild is of the opinion that Petáh was a root.

The actual roots used in the manner described would likely be roots plentiful in the area, as evidenced by their appearing in sufficient quantity to: (1) catch the eye of the observer, and (2) to be prepared and eaten in various ways. This root was used both ceremonially and as a common

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22. A comparison appears in Appendix G.
23. Kroeber, op. cit., p. 277.
24. Heizer, op. cit., p. 268. Barrett, in his Ethno Geography of the Pomo Indians, confirms the word as putcu, and as referring to the "wild onion", but lists wala as referring to "bulbs, corns, tubers except Allium unifolium and maybe other wild onions." The Moquelumnuan Indians evidently made a distinction between onions and other lilaceous plants. The brodiaea is not an onion and is easily distinguished from the onion by its lack of onion odor and taste. Unless it is positively known that putcu refers to the brodiaea in Coast Miwok dialect, then wala is the probable word used. It is not similar to Petáh.
25. The local species is Chlorogallum pomeridianum.

food. It was stated in The World Encompassed that the root form (not ground) was used ceremonially at Drake's camp, but not whether the various preparations were witnessed at a nearby village or at an inland village.

Large quantities of edible roots are easily harvested in damp or marshy places. Several roots commonly gathered in such places by California Indians were the Tule Potato (Sagittaria latifolia) and the and the Cat-tail (Typhus latifolia). (26) Since the Tule Potato is not known to be indigenous to the Point Reyes area, the Cat-tail must be carefully considered. It is commonly distributed and is definitely reported by The World Encompassed as present at Nova Albion. (27). Indians used its root in various ways: The rhizomes were: (1) eaten raw, (2) roasted, (3) made into meal, (28) and as it could be made into a meal, in all probability was baked into bread. It is known that bread was made of the pollen. (29) However, the Cat-tail was well known in Elizabethan England and one would wonder that if Petáh was the root of Cat-tail, why did Drake's party not recognize it as such? It may be that then, as today, many persons would recognize the leaves and fruiting bodies, but few would recognize the rootstock alone. The Guild considers the probability to be that members of Drake's party not only recognized the Cat-tail and would easily have recognized the rhyzomes, but that they probably also collected and used them as familiar food.

There is a possibility that the Tule-Potato was a native of the Olema Swamp, which lies at the eastern base of the Inverness Ridge. It is not found in this swamp today, but is found in another eleven miles to the north-east. The Camass Lily (Camassia Quamash var. linearis) was native to the Point Reyes Peninsula, but is now either extinct or very nearly so. The Tule Potato could have disappeared as did the Camass Lily; they were both favorite Indian foods. Balls reports that the Tule-Potato was also a favorite food of the Chinese in California. (30) There were Chinese working on the North Pacific Coast Railway which ran

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26. Edward K. Balls, Early Uses of California Plants, pp. 31-32.
27. See "bulrush," p. 17.
28. Balls, loc. cit.
29. Ibid.
30. Ibid.

within one-half mile of the swamp. Chinese have lived near the swamp area from the latter 1800's until the late 1940's. It is not known whether they actually did gather Tule-Potatoes from the swamp. It does not seem likely that there could have been a complete extinction of these plants from this large marsh area, for the collection methods were necessarily primitive due to the hidden location of the roots in the mud. Balls reports that "Indian women, wading in the water and pushing small canoes before them, loosened the tubers with their toes so that they floated to the surface and were gathered into the floating baskets." (31) The Tule-Potato would have been a completely strange plant to Drake's party had they seen it.

The Squaw Root (Perideridia Gairdneri) is a common native plant of the Point Reyes area. Its common names are generally indicative of its use, such as Squaw Potato, Yampa, Ipo, Breadroot, and Indian Potato. Barrett and Gifford report that the Interior Miwok Indians boiled and ate this root like a potato. (32) According to the Range Plant Handbook, (33) Piper "recognized Yampa as the best food plant of the North western Indians." (34) It states, "Capt. John C. Fremont (35) ate the Yampa as a vegetable with wild duck, and declared it to be the finest of all Indian roots." It further says that this plant and the Tule-Potato were introduced to the explorers Lewis and Clark by their woman guide, Sacajewea. The Range Plant Handbook draws from Haskin (36) to state, "The roots were cleaned by placing them in running water where squaws trod them to remove the dark outer skin and make them smooth and clean. They were then boiled or prepared as the Indians cooked other vegetables. The roots were also eaten raw, ground into flour and made into bread, or used with other roots and to make a meal of gruel." One can compare this last sentence with the statement from The World Encompassed: ". . . a roote which they call Petáh, whereof they make a

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31. Ibid.
32. S. A. Barrett and E. W. Gifford, Miwok Material Culture, p. 157.
33. U.S. Dept. of Agriculture, Range Plant Handbook, Section W. 48.
34. C. V. Piper, "Flora of the State of Washington", U. S. National Museum, Contrib. U.S. Natl. Herbarium 11, p. 637.
35. Famous California explorer and soldier.
36. L. L. Haskin, "A Frontier Food, Ipo, or Yampa, sustained the Pioneers", Nature Magazine 14, pp. 171-172.

kind of meale, and either bake it into bread, or eate it raw;...." The Range Plant Handbook states: "Yampa roots are fleshy and tuberous, growing up to three inches long and three-fourths of an inch thick, and resemble tiny sweetpotatoes. They grow at the base of the stem singly, in pairs or in groups of three or more." It states: "From the standpoint of Indian lore, yampa is an extremely interesting plant. The tubers have a sweet, nutty, creamlike flavor and were formerly eaten extensively by the Indians, but are now little used." Further along it mentions that the seeds were used to season other foods, as they had an aromatic caraway flavor. Another common name for this plant is Wildcaraway. Until recently the Squaw Root had been classified with the Caraway genus as Carum Gairdneri. (37)

Barrett lists the Coast Miwok Indian word for Indian Potato as wala. It is not exactly clear what Barrett meant by this term (38) for Indian Potato is a common name for both Squaw Root and Brodiaea, but it was generally inclusive and would refer equally to either.

Barrett lists the word potota as meaning "white" in the western Moquelumnuan Indian dialect (the language of the Coast Miwok). (39) There is a similarity between Petáh and potota. Possibly potota was used to refer to the color of the root. Petáh may have been a local abbreviated form of potota. The Squaw Root has a very white root, as does the Brodiaea, and was possibly called Petáh for this reason. It would have been a very understandable error on the part of the English to misinterpret the meaning of the word.

Sixteen years after Drake's visit, Cermeño (40) stated in his Declaration that the Indians of Drakes Bay "produced a seed the shape of

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37. As listed in A Manual of the Flowering Plants of California, by W. L. Jepson on p. 708.
38. See footnote 24.
39. S. A. Barrett, Ethno Geography of the Pomo Indians, p. 76, word No. 193.
40. Sebastian Rodriguez Cermeño was a Portugese explorer commanding a Manila galleon, the San Agustin, which foundered in Drakes Bay in 1595. See Raymond Aker, The Cermeño Expedition at Drakes Bay 1595.

an anise seed, only a little thinner and having the taste of sesame, of which they make the bread they eat." (41) This description fits the seeds of the Squaw Root much more than any other local member of the celery family, which is undoubtedly the plant family concerned. The Squaw Root has seeds the size and shape of an anise seed which do not taste of anise, but mildly of caraway, or sesame. The only other plant which might be considered is the very closely related species, Perideridia Kellogii, whose seeds are similar but somewhat larger. The above ground appearance of the two plants is nearly identical but the underground stem of P. Kellogii forms a fascicle of coarse and hard fiberous roots. The two plants are found growing side-by-side in the area. (42) The easily collectable seed gathered by the Indians was probably a mixture of these two, for the actual size was not stated; yet if it radically differed in size from the seed of the anise, it probably would have been noted, for the seed was carefully examined by the Spanish who were searching for edibles and did find an old-country affinity with this seed. The seed was observed to have been slightly thinner, but not differing in any other notable respect except taste. It was not stated directly that Cermeño took any of these seeds back with him to camp. Juan del Rio, Cermeño's ensign, provides the only clue that the Spaniards may have obtained this seed when he states that the Indians "took the Spaniards to their settlement nearby where they gave them some of the food they had, acorns, a fruit the shape of a hazelnut, and other things to eat." (43) Cermeño's account indicates that there was sufficient quantity of the seeds on hand for making bread, though it is not clear whether the bread was made entirely of these seeds, or if the seeds were only used for flavor. In either event, the seeds were used as an ingredient. The presence of these plants during Cermeño's visit, combined with their present occurance, make it reasonable to assume the plants were present also during Drake's visit. Cermeño arrived in the Fall when the seeds were mature; Drake was there in June and July when the plants were in early bloom, so it is unlikely that Drake's party saw the seed -- only the root. It is probable that the Indians in the villages near Drake's

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41. Wagner translation, Spanish Voyages to the Northwest Coast of America in the Sixteenth Century.
42. See illustration of Perideridia Gairdneri.
43. Translation of Juan del Rio's "Declaration" from Wagner's Spanish Voyages to the Northwest Coast of America in the Sixteenth Century.

SQUAW POTATO
Perideridia Gairdneri (H.& A.) Mathias

Collected from directly above Drake's Cove, located at the western side of the entrance to Drakes Estero, Drakes Bay, Marin County, California.

Elevation: 100 feet, outer-coastal grassy hillside

October 1, 1966

Collector: Robert W. Allen
Drake Navigators Guild

Point Reyes, California

camp used the roots and seeds for food, for both species have been collected on the hills above Drake's Cove.

The Caraway (Carum Carui) of 16th Century England was a species closely related to the Squaw Root. Loudon, who refers to Eng. Bot. 1503,[44] states that caraway roots were eaten as parsnips, often being preferred to the latter. The United States Dispensatory says that not only is the caraway a native of Europe and Asia, but "the root, when improved by culture resembles the parsnip, and is used as food in Northern Europe."[45] Bailey reports that the caraway is mostly raised for its seed, which is an ever-popular flavoring for bread, cakes, cheese, and liquors. He says it is also grown for its edible young shoots and leaves, but makes no mention of the roots being eaten.[46]

Various plants have fusiform roots. Members of Drake's party may have noticed some similarity between the Squaw Root and the root of the caraway, but the cultivated European caraway had much larger roots. Unless the whole plant, and especially the seed, was seen and tasted, there would be no particular reason for the English to more than most casually link the two plants -- which there is no record of their doing. Whatever situation, the root seen aroused enough interest in Drake's party to elicit the report of its various uses as a jack-of-all-foods, a position generally ascribed among the California Indians to the acorn. As Beardsley has indicated, acorns were somewhat scarce, so the root was probably an acorn substitute at that time of the year (during Drake's visit) when the new acorn crop was still green upon the trees and the old crop was nearly exhausted.

In the light of present knowledge, the Guild would consider the Squaw Root as the most likely plant for Petáh, and tentatively identifies it as such.

Meate is mentioned twice, once in relation to food given by Drake's

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44. J. C. Loudon, An Encyclopedia of Gardening, p. 676.
45. Horatio C. Wood and Charles H. LaWall, The Dispensatory of the United States of America, Centennial (22nd) ed., p. 300.
46. L. C. Bailey, The Standard Cyclopedia of Horticulture, Vol. II C-E, p. 661.

party to the Indians, and again in relation to the food of the Conies. (47) Elizabethan use of the word meate was as a general reference to food.

The World Encompassed mentions how the Indians often forgot to bring food along when visiting the English. Drake provided for these "with such victualls as we had prouided for our selues, as Muscles, Seales, and such like." This food was all meat. Earlier it states that the Indians brought "Petáh, . . . broyled fishes, like a pilchard; the seed and downe aforenamed, with such like." As two of the listed commodities were of a botanical nature, the "such like" could have included more vegetable items.

At least one English observer watched the Conie gathering its food as it left its burrow. The Conie was seen above ground "gathering his meate." His pouches (bagges) were being stuffed with the immediate above-ground plant material, such as grass, or clover, as he did "trauaile from his burrough."

Wassaile boales (48) were brought to Drake's camp by Indian women. These were the watertight baskets woven by the Indians and probably contained some liquid for wassail. A wassail bowl is "a large bowl or cup in which w. was made, and from which healths were drunk; also the liquor contained in the bowl", according to the Oxford Dictionary. The Indian baskets, with their rounded sides, somewhat resembled in form the bowls used in England for holding wassail, but as it had been previously mentioned in The World Encompassed that "Their baskets were made in fashion like a deepe boale, and though the matter were rushes, or such other kind of stuffe, yet was it so cunningly handled, that the most part of them would hold water;. . ." there would be no need to repeat the liquid-holding capabilities unless some other liquid than water was contained -- some spiritous liquor; this would make it wassail. This liquor was probably ceremoniously offered to the Drake party. The term wassail would indicate that someone was seen drinking it with probable effect.

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47. Identified as the Botta Pocket Gopher. See Robert W. Allen and Robert W. Parkinson, Identification of the Nova Albion Conie.
48. See "baskets" under "General Ceremonial", pp. 29, 30.

California Indians used intoxicants. One of these was a brew of fermented Manzanita berries,[49] and there is an abundance of Manzanita in the Point Reyes area.[50] Several species of this family are early bloomers, so there was a good possibility that some of the fruits were ripe at the time of Drake's visit, also the fruit is easily stored dry for use when needed, so immediate availability was no problem.

Meale was mentioned in The World Encompassed as a preparation of the root Petáh. Stone mortars and pestles were generally used by the California Indians to grind nearly any solid food into meal. This meal could be then dried and stored for later use. To the Elizabethan, meale was generally a fine powder rather than a coarse grind. The mortars of the Coast Miwok Indians were quite capable of grinding foodstuffs into a fine powder. Very moist items would be difficult to grind fine unless dried first, but semi-moist items such as acorns and roots tend to dry as you grind them. The World Encompassed statement: ". . . a roote which they call Petáh whereof they make a kind of meale, and either bake it into bread, or eate it raw;. . .." indicates that the Petáh was ground before it was eaten.

## Clothing, Ordinary

Bulrushes: As used in England, the term "bulrush", although technically referring to the Sedge (Scirpus lacustris), has been popularly applied from before Drake's day to the present to the Reed-Mace(Typha latifolia), which is the same Cat-tail (Typha latifolia) found in abundance in the Point Reyes area.

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49. This is reported by Mrs. Marian D. Wilson who in her youth lived in close association with the Indians of the Mc Cloud River in northern California. She reports that the Indians used shallow baskets, fermenting the Manzanita berries by simply adding water and letting the concoction stand in the sun for three or four days until the brew was judged ready. The liquor was then imbibed by means of a skunk-tail sop, producing the desired alcoholic effect. Certainly the alcoholic content was not great, but the primitive Californian evidently had a far lower tolerance for alcohol than his white brother.
50. Local species include Arctostaphylos Uva-ursi, A. montana, A.Cushingiana, and A. virgata. There is heavy growth along the Inverness Ridge.

The World Encompassed states that "the women take a kinde of bulrushes, and kembing it after the manner of hemp, make themselues thereof a loose garment, which being knitte about their middles, hanges downe about their hippes, and so affordes to them a couering of that which nature teaches should be hidden;. . . ." Cat-tail leaves are long, narrow, flat, long-fibred leaves brittle when first cut, but which with drying become pliable and tough, with soft material between the coarse, long fibres. The word knitte (knit) indicates they were woven or plaited, after having been finely split (kembing). Beneath this plaited section hung a fringe covering the hips. This type of garment was commonly used by the California Indians. (51)

## Clothing, Ceremonial

Cawle: This word was spelled cals in The Famous Voyage and is similar to the Elizabethan calle (52) which corresponds to the Elizabethan word caul. All four words were pronounced identically in the singular: kɔ̄l, (53) or kôl. (54) The Oxford Dictionary assigns cawl to mean basket; calle, a caterpillar's web; and caul, a net, net hair covering, netted cap, or spider's web. The consistancy of the pronounciation in context provides the key to the meaning. The World Encompassed states that "they bestowed upon our generall, and diuerse of our company, diurse things, as feathers cawles of networke. . . ." Later it speaks of the king as having upon his head "a cawle of knitworke, wrought upon somewhat like the crownes, but differing much both in fashion and perfectness of works. . . ." The king's guard was described as "some hauing cawles likewise stucke with feathers, or couered ouer with a certaine downe. . . ." Some type of headgear made in the form of a net, or of net-like material, is indicated. The Oxford Dictionary states that networke not only referred to an open-work fabric of twine, but also to a piece of fine mesh-work to confine the hair; knit-worke in its basic sense referred to knotted work. It is not clear whether the chronicler used both networke and knitworke, or whether this is due to later editing, but the terms compliment one another to create a very

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51. Kroeber, op. cit., p. 804.
52. This word appears as calles in the 1600 edition of The Famous Voyage.
53. Oxford Dictionary.
54. Webster's Unabridged Dictionary.

accurate description of the California Indian net-caps commonly used in Coast Miwok and Pomo ceremonies, according to both Heizer and Kroeber. These net caps were small, string nets shaped like a small, string hammock. Kroeber reports that they were of either knotted or looped construction and were used to contain plant or bird down close to the top of the wearer's head, or to provide a base for supporting larger feathers.[55] The plant down in this case was probably from Rafinesquia californica,[56] an indigenous Point Reyes plant very similar to the common wild lettuces (Lactuca serriola and L. virosa) of England. The World Encompassed reports that the down "groweth up in the country upon an herbe much like our lectuce."

The string to form the net caps was probably made of fibers from the stem of the Nettle (Urtica californica, or U. holosericia), or from the leaves of either the Ground Iris (Iris microsiphonia) or the Douglas Iris (I.Douglasiana). The string materials most commonly used by most California Indians, Dogbane (Apocynum cannabinum) and Milkweed (Asclepius spp.),[57] are not known to be indiginous to the Point Reyes area.

Crowne: The World Encompassed states that the "king. . . set the crowne upon his [Drake's] head. . . ."[58] This was probably one of the two crownes, one large and one small, described earlier in the account of hanging on the scepter borne before the king. The two sizes may refer to length or breadth. There was probably a ceremonial reason for having two crowns, perhaps they represented two worlds. The World Encompassed described them as ". . . made of knitworke, wrought vpon most curiously with feathers of diuers colours, very artificially placed, and of a formall fashion." They were probably Redshafted Flicker quill headbands common to Indians of Central California. This type of crown was a string fillet worked tightly enough so as to both hold its shape and

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55. Kroeber, op. cit., passim.
56. See Robert W. Allen, Identification of "an herbe much like our lectuce...." Drake Navigators Guild, 1971.
57. Kroeber, op. cit., p. 827.
58. It would not have been the actual headpiece worn by the king, for that was described as "a cawle of knitworke", and not a crowne. The king's headpiece was a modified version of the crownes, and probably made of the same materials.

support feathers in a firm, ordered manner. String materials previously mentioned for net caps would probably be the same here.

## Hunting Weapons

Bowes, arrowes: These are mentioned five times in the accounts. The World Encompassed, in describing the natives of Nova Albion says that their bows and arrows were their "only weapons, and almost all their wealth." Cermeño, in his Declaration, declared that "Their arms are bows and arrows."

There is no positive information thus far obtained by the Guild as to the specific woods used to fashion bows and arrows by the Coast Miwok Indians of the immediate Point Reyes area. (59)

Various woods occurring locally and reported to be used (60) by the California Indians for bowstock include Nuttall Dogwood (Cornus nuttalii),(61) California Nutmeg (Torreya californica), Mountain Mahogany (Cercocarpus betuloides), Manzanita (Arctostaphylos spp.),(62) Willow (Salix spp.),(63) Elderberry (Sambucus spp.), (64) California Bay (Umbelluaria californica), and California Hazel (Corylus cornuta var. californica).

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59. Kroeber states in The Patwin and Their Neighbors that among the Patwins, the Coast Miwoks' immediate eastern neighbors, the bows were normally imported from the north. Probably some were traded with the Coast Miwoks, but as good bow-wood grew in Coast Miwok territory, these would have been few. Such trades would indicate the use of Western Yew (Taxus brevifolia), Juniper (Juniperus californica, or J. occidentalis), and Incense Cedar (Libocedrus dicurrens), woods not occurring in Coast Miwok territory but known to have been used by California Indians for bowstock.
60. According to Kroeber, Loeb, Pope, Latta, and Barrett. See bibliography.
61. See p. 21.
62. See footnote 50.
63. See p. 21.
64. See footnote 60 (above) and footnote 67.

In the Guild's opinion, other trees in Coast Miwok territory are suited for bow stock, though their use is not evident in the references studied to date. These trees are: Douglas Fir; Big Leaf Maple (Acer macrophyllum), and Sargent Cypress (Cupressus Sargentii). The other local woods appearing to lack such qualities as straightness, flexibility, resiliancy, and resistance to set.

Locally occurring, or easily available, arrow stock known to have been used [65] by the California Indians includes California Hazel, Mountain Mahogany, Dogwood (Cornus spp.), Wild Current (Ribes spp.),[66] Spiny Currant (Ribes spp.), California Wild Rose (Rosa Californica), Elderberry (Sambucus, spp.), Red Willow (Salix laevigata), and Willow (S. spp.). Mountain Mahogany does not grow in the immediate Point Reyes area, but some ten miles to the east. Both the Blue Elderberry (Sambucus caerulea) and the Red Elderberry (Sambucus callicarpa) are the local plants.[67] Spiny Currant is a common name used by Loeb. Ribes malvaceum has bristly hairs and it grows in the Point Reyes area. However, Loeb's reference may be to the Gooseberry, and, if so, then either Ribes Menziesii or Ribes Menziesii var. Leptosmum is the likely plant source. California Wild Rose is common to the Point Reyes Peninsula. Dogwood occurs as Creek Dogwood (Cornus californica) and Nuttall Dogwood. Creek Dogwood is common, but Nuttall Dogwood is very scarce with but one known specimen occurring in the Point Reyes area. Creek Dogwood grows as a bush with many narrow wands; whereas Nuttall Dogwood grows as a tree. Local willow species are Coulter Willow (Salix coulteri), Red Willow, Arroyo Willow (S. lasiolepis) and Yellow Willow (S. lasiandra). Sudworth remarks on the especially fine quality of the annual shoots of Yellow Willow as basket

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65. As recorded by Loeb, Kroeber, Pope, Barrett, and Latta. See Bibliography.
66. This common name used by Pope could refer to several of the wild currants. Ribes sanguineum var. glutinosum is the most likely encountered species in the local area.
67. Kroeber simply mentioned "elder", but both Sudworth and Rountree use this term as generally referring to elderberry rather than Box Elder (Acer negundo var. californica). When discussing bow stock, Latta speaks of elderberry and later of elder-wood when comparing elderberry with bay wood.

rod potential. (68) Such long, even stock would be desirable for arrows.

The arrows were often footed with some second, often harder, wood. The purpose was so the foreshaft would become disengaged from the mainshaft upon striking the quarry, thereby saving the mainshaft which took much effort to manufacture. Footing stock of local species recorded as used (69) by the California Indians are California Hazel, Wild Currant, Buckeye, Live Oak, Chamise (Adenostoma fasciculatum) and Wild Lilac. (70) There are a number of other local woods which the Guild believes would have been suitable, such as Big Leaf Maple, Mountain Mahogany, California Wax Myrtle (Myrica californica), Madroño (Arbutus Menziesii), Manzanita, and the oaks.

## Transportation

Canow, rowing: The World Encompassed states: "The next day, after our comming to anchor in the aforesaid harbour, the people of the countrey shewed themselues, sending off a man with great expedition to vs in a canow. Who being yet but a little from the shoare, and a great way from our ship, spake to vs continually as he came rowing on."

The word canow is a spelling variant of the Elizabethan word canoa, which, according to the Oxford Dictionary, referred to "A boat in use among uncivilized nations, hollowed out of a tree-trunk, or otherwise rudely constructed, and usually propelled by paddles." By this definition the canow could have been constructed of any material formed in various shapes.

Only sixteen years after Drake's visit, Cermeno reported that at Drakes Bay an Indian "came out in a small boat made of grass which was

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68. George B. Sudworth, Forest Trees of the Pacific Slope. U. S. Dept. of Agriculture, p. 220.
69. See footnote No. 65.
70. Ceanothus thrysiflorus is the plant commonly referred to in California as Wild Lilac, according to Howell; Loeb may have used Wild Lilac in a more general sense, however.

like the bullrushes of the lake of Mexico." (71) Cultural change was very slow among the Central California Indians, (72) and so it is assumed there was no appreciable change in boat construction in the time between Drake's visit and Cermeño's; therefore, the canow seen by Drake was constructed of tules, and this is consistent with the general run of Central California Indian boat construction, which, according to Kroeber, was of tules or rushes. (73) Commenting on these craft, he states: "On large lakes and bays well shaped vessels, with pointed and elevated prow and raised sides, were often navigated with paddles." (74) Loeb reports that "On Clear Lake, boat-shaped rafts of bundled tules were used, accommodating three or more persons. These balsas, to use the customary Spanish word, were trimly modeled in the best examples, with rising, sharp prow, a stern and gunwale to prevent the waves from washing over the top. They were in every way boats except that it was the specific gravity of their contents and not their displacement that floated them" (75)

Kroeber declares, "Either custom changed after Drake's day or his "canoe" is a loose term for the tule balsa, which was often boat shaped, with raised sides, especially when intended for navigation." (76) An early drawing by Langsdorff (77) shows an Indian tule boat being rowed upon the waters of San Francisco Bay. The canoe shape and double-bladed paddle are clearly shown. The boat is carrying four men. The boat is apparently less than fifteen feet long, with only two of the men paddling. Beardsley states that Drake's canow is "specified to be a double-ended tule balsa. . . propelled by double-bladed paddle [sic] with pointed blades. . . ." (78) He bases this statement upon the accounts of Cermeño, Mourelle, Colnette, Goycoechea,

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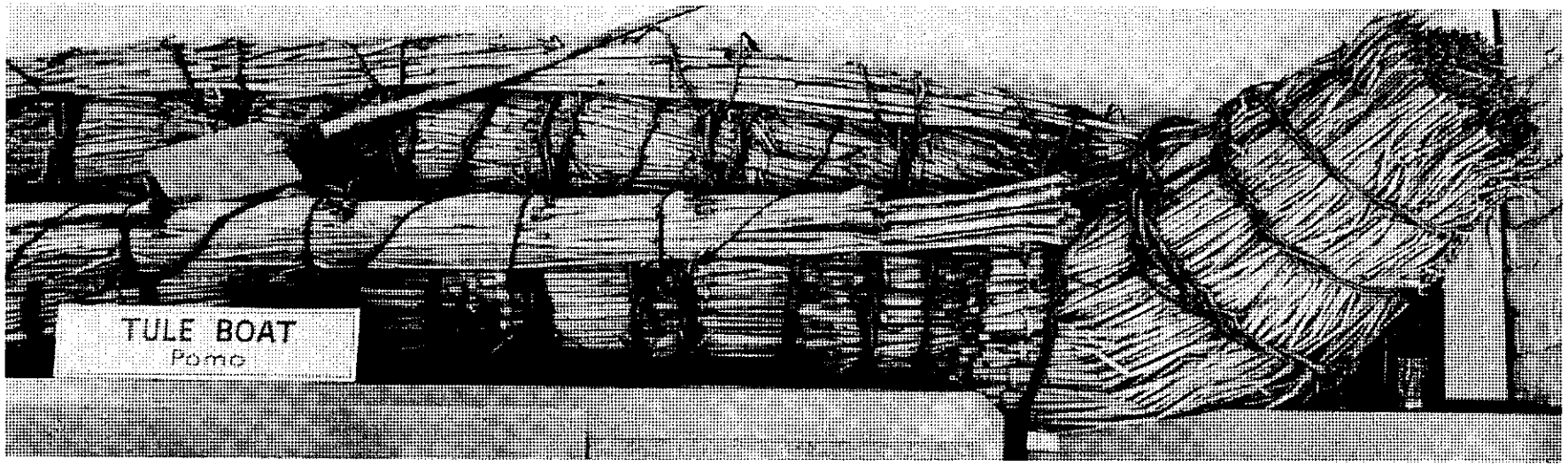
71. Translation of Cermeño's "Declaration", Wagner, California Historical Society Quarterly, Vol. III, 1924.
72. Beardsley, op. cit., p. 58.
73. Kroeber, op. cit., p. 813.
74. Ibid.
75. Edwin M. Loeb, "Pomo Folkways", University of California Publication in American Archaeology and Ethnology, XIX, p. 132.
76. Kroeber, op. cit., p. 277.
77. Dr. Georg H. Von Langsdorff was with the Rezanov Expedition to Nueva California in 1806.
78. Beardsley, op. cit., p. 17.




Courtesy of California State Indian Museum

Construction detail of tule balsa.

Bancroft Library

Left: Tule balsa off North Beach, San Francisco. (From drawing by Georg Von Langsdorff, 1806.)

and Martinez y Zayas, [79] all of whom had early contact with the Coast Miwok culture encountered by Drake. [80]

Heizer searched without success for some positive reference to actual "tule canoes". His approach to this point was semantic, as was Wagner's, and since Drake's chronicler had spoken of a canoe, not a raft or balsa, Wagner identified the canow as a Yurok seagoing canoe which was so large that one man could not have managed it. Kroeber could not support the wooden boat theory either, for it did not follow the authenticated distribution pattern for "true canoes" (dugouts). Certainly the smaller dugout canoes of the California northwest and northeast were designed for rivers, being very shallow draughted and unsuited for use in the surf or open bay. Kroeber observed, "There is not authentic record of true canoes on the whole coast from near Cape Mendocino to the vicinity of San Luis Obispo." [81] Because the canow was seen at Drake's Bay, the dugout canoe theory must be abandoned; such a canoe type was only atypical to the central California Indian cultural pattern besides being functionally impractical to the location. The wood involved in dugout construction need not be considered.

In 1792 the English commander George Vancouver stopped at San Francisco as part of his mission to chart the coast. In his journal he not only carefully described the Indian balsa found there, but called it a "canoe of the country", [82] and always referred to the craft as "canoes" throughout his text. The appellation "canoe" was a natural term for an English navigator to call a small tule balsa with raised sides and propelled by a paddle. Canoe (canow) was the only English word to apply to this craft without having to go into a long description or use the Spanish term.

Bouyant and serviceable, Drake's canow was a boat-shaped craft, possibly double-ended, and made of tule obtained either in or near Drake's

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79. Cermeño, 1595; Mourelle, 1775; Colnette, 1790; Goycoechea, 1793; Martinez y Zayas, 1793.
80. At least before it was badly disrupted by Europeans.
81. Kroeber, op. cit., p. 277
82. Marguerite Eyer Wilbur, editor, Vancouver in California, 1792-1794, p. 11.

Estero. Various species of the tule grew in this area, and more than one type may have been used in the construction of the craft. The local species are: Scirpus cernuus; S. koilolepis; S. americanus S. californicus; S. paludosus; and S. microcarpus. Scirpus californicus and S. paludosus have been identified within Drakes Estero, with S. paludosus being the more common plant, according to Howell.

Tule balsas were made of long bundles of tules lashed together. A supple vine was often used to secure the individual bundles and to lash them into the balsa shape. Wild Grape (Vitis californica) was commonly used for lashing throughout its Central California range, but this plant is not indigenous to the Point Reyes area. Virgin's Bower (Clematis ligusticifolia) or the California Honeysuckle (Lonicera hispidula) have ropelike characteristics and could have been used. The California Honeysuckle is especially supple and strong. The Dutchman's Pipe (Aristolochia californica) could also be considered, though in the Point Reyes area its vines are not generally as stout as those of the former two plants. Tules themselves were often used as lashing. Cat-tail leaves also serve well. Loeb states that the Coastal Pomo Indians made very crude rafts from redwood tree driftwood, (83) using twisted California Hazel shoots around the logs for rope. The Pomos were immediate neighbors to the Coast Miwok and the use of hazel for boat lashing was probably common to both groups. Green hazel is extremely strong and flexible.

Rowing: The World Encompassed term rowing was in common Elizabethan use and clearly indicated that the use of some form of oar or paddle was seen by Drake's party. Cermeño reported that the Indian who came out in the boat to greet him was using "an oar with two blades . . . ." (84) Kroeber states: "The rush raft was most often poled; but in the deep waters of San Francisco Bay the Costanoans propelled it with the same double-bladed paddle that was used with the canoe of the coast and archipelago of southern California." (85) Wide paddle blades were often lashed to the ends of a straight stick. Local woods suitable for paddle construction would necessarily be long, straight-grained, easily worked wood such as Douglas Fir or Coast Redwood. Willow may have been used.

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83. Loeb, op. cit., p. 169.
84. See Footnote 71.
85. Kroeber, op. cit., p. 277.

Robert Allen

Stand of tules at Drakes Estero

Robert Allen

Cat-Tails at Drakes Estero
(see tules in background)

General ceremonial

Blacke wood; Septer (Scepter); royall mace: The World Encompassed states that "In the forefront came a man of a large body and goodly aspect, bearing the Septer or royall mace, made of a certaine kind of blacke wood, (and in length about a yard and a halfe). . . ." Heizer states that the septer seems identifiable with the staff known ethnographically to have been used in the central California Kuksu or ghost ceremony. (86) Barrett describes these staffs as used by the Pomos in the Kuksu ceremony as a "staff from six to eight feet in length and had a feather tuft on top." (87) Kroeber describes the staff of the Pomo Shalnis dancer, the associate of the Guksu (Kuksu) spirit impersonator, as being a "plain black staff." (88) It contrasted with the Guksu staff in having no feather tip and apparently being shorter. References are cited, but none actually identify the blacke wood itself. There are no local trees of black wood, in fact, the Guild knows of no native California trees producing black wood. Ironwood (Olneya tesota) of the Southern California deserts, the heartwood of the Coast Redwoods, and Mountain Mahogany would come closest to it, with Mountain Mahogany being the most likely of the three, as California Indians were known to have used it for digging sticks; yet its wood is not truly black in a literal sense. It was not stated that the wood was simply dark, but blacke. Ebony is an example of a black wood with which the Elizabethans were familiar. To be consistant with the account, the staff was some wood artifically blackened. Soot or charcoal mixed with grease was used by the Indians for body paint; (89) this applied to a stick would darken it. The sap of the Poison Oak (Rhuus diversiloba) is an excellent black dye and was used by the Indians to dye the fibers in their basketry. (90)

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86. Heizer, op. cit. p. 277
87. Samuel A. Barrett, "Ceremonies of the Pomo Indians", University of California in American Archaeology and Ethnology, XII, pp. 397-441.
88. Kroeber, op. cit. pp. 261-262.
89. The World Encompassed states of the Indians who accompanied the Septer bearer, "that everyone had his face painted, some with white, some with blacke, . . ."
90. Balls, op. cit., p. 60.

Merriam reports that basketry stock was "sometimes dyed black by being buried in mud in an iron spring." (91) Latta mentions that not only were basketry materials blackened by being "buried in the dark mud of a spring for several weeks," but that a "dead black" was obtainable by boiling the object one wished to dye in black mud from the sloughs or tule swamps.(92) Balls reports that the berry stems of Elderberry produced a black dye used by the Indians. Alder root was used to produce a black dye. A number of the methods involving the use of these dye materials could have been employed; perhaps the simplest is the charcoal mixed with grease and rubbed on the stick.

Because a ceremonial staff would not have to be especially hard, the wood of nearly any tree in Coast Miwok territory could be used. Some straight-growing wood such as an Arroyo Willow sapling, California Hazel, or a Red Alder sapling would be suitable.

Post; poste; Poste; monument; great; greate; faire; firme: The post to which the Plate of Brass (93) was affixed was in all cases a great post. The World Encompassed described it as "a great and firme post." The Famous Voyage calls it "a faire great poste." The Anonymous Narrative states, "a greate post." Camden's Annales says, "a greate Poste." Elizabethan use of great denotes thick, stout, massive, bulky, big as opposed to small. The various descriptive terms used for the post would indicate that Drake's party felt it was most admirable for the purpose. The post was certainly of impressive size set well into the ground as it was meant as a monument and landmark to advertise the record of England's proud act of possession. The World Encompassed describes it thus:". . . our Generall caused to be set vp a monument of our being there, as also of her maiesties and successors right and title to that kingdome; namely a plate of brasse fast nailed to a great and firme post;. . . ."

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91. C. Hart Merriam, Studies of the California Indians, p. 123.
92. F. F. Latta, Handbook of Yokuts Indians, p. 157.
93. A small brass plate (about 5-1/2 x 7-1/4 inches) engraved with England's act of possession and left at Nova Albion by Drake. It was found near the shore of Drakes Bay in 1933. See C. G. Fink and E. P. Polushkin, Drake's Plate of Brass Authenticated, California Historical Society, Special Publication No. 13, San Francisco, 1937.


Robert Allen

Driftwood post erected at Drake's Cove.

There is no record of such a post being carried aboard the Golden Hind, nor on Tello's bark. (94) Due to its breat size, the post was undoubtedly obtained at Nova Albion. It was not an anticipated necessity, but, like the Plate of Brass, it was contrived from the materials at hand at that particular time and place to meet the need. Drake's camp was on a beach, so a driftwood log is the obvious probability. Beardsley comments that "No live timber is close at hand, but driftwood, which today is piled high along parts of the Drake's [sic] Bay beach, must have been available even in pre-sawmill days." (95)

The Famous Voyage speaks of post as being faire. This nautical term meant smooth, free from blemish, and definitely most suitable. Either Drake's men used tools to smooth it or they found it naturally smooth. When a log loses its bark it is generally quite smooth until roughened. Douglas Fir and Coast Redwood are the likely choices, for they grow naturally straight and would have made up a large percentage of the driftwood on the beach adjacent to Drake's camp. The Guild has noted such smooth logs cast upon the beach at Drakes Bay with diameters measuring up to three and a half feet.

The post was probably as large as many men could carry, or it needed parbuckling, for it was meant to be both permanent and obvious. The term firme indicates that the post was both of a solid nature and securely fixed into the ground. The lack of curvature of the Plate of Brass could indicate lack of curvature of the post itself, which would in turn indicate a large girth for the post; though it should be considered that regardless of the post's size, the plate was probably recessed into the post as a deterrent to simple vandalism and attrition by the elements. Because of its size and weight, the post was not likely to have been carried far, but was erected where it could be seen to best advantage from the water -- on a hill rather than an unstable beach. This post carried on England's claim which stretched from ocean to ocean. It was a proud claim to most of North America. It was a great post.

Seede: In describing the "herbe much like our lectuce," The World

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94. A small fragata Drake seized off Panama and brought with him to Drakes Bay.
95. Beardsley, op. cit., p. 13.

Encompassed discusses its seed, saying, "and the seeds are not vsed but onely in sacrifice to their gods." The plant bearing this seed, previously in this study given the tentative identification of Rafinesquia californica, produces a beaked achene similar to those of either Lactuca virosa or L. serriola, the common wild lettuces of England.

Baskets; little basket; round basket; rushes; deep boale.

The Indian baskets are carefully described in The World Encompassed as, "Their baskets were made in fashion like a deep boale, and though the matter were rushes, or such other kind of stuffe, yet was it so cunningly handled, that the most part of them would hold water; about the brimmes they were hanged with peeces of the shels of pearles, and in some places with two or three linkes at a place, of the chaines aforenamed; thereby signifying that they were vessels wholly dedicated to the onely use of the gods they worshipped; and besides this, they were wrought vpon with the matted downe of red feathers, distinguished into diuers workes and formes." The baskets were also described as round. Kroeber states that "absolutely typical Pomo basketry of the ornate type can be recognized:. . . ." (96) He also observes that the Lake Miwoks made feathered baskets "scarcely if at all distinguishable from those of the Pomo." (97) Since there is paucity of published information relative to the basketry of the Coast Miwok Indians per se, his observations are of great importance for they indicate what might be expected of a culturally isolated group of Miwoks living adjacent to the Pomos. The indications are that eigher the baskets were traded, or, more probably, that the close proximity of the Pomo to the Point Reyes area strongly influenced the basketmaking techniques of at least this group of Coast Miwoks. It is known that the Pomo and the Coast Miwoks shared various religious ceremonies. With such cultural intermingling, (98) the baskets made by the Coast Miwoks, were either of similar materials gleaned from similar ecological environment, or traded for. Taboos could have governed the use of some materials, but for lack of further evidence the assumption is made here that the baskets were of similar materials to those of Pomo manufacture, if not actually Pomo. The "rushes or such other kind of stuffe", may then be generally identified and are listed

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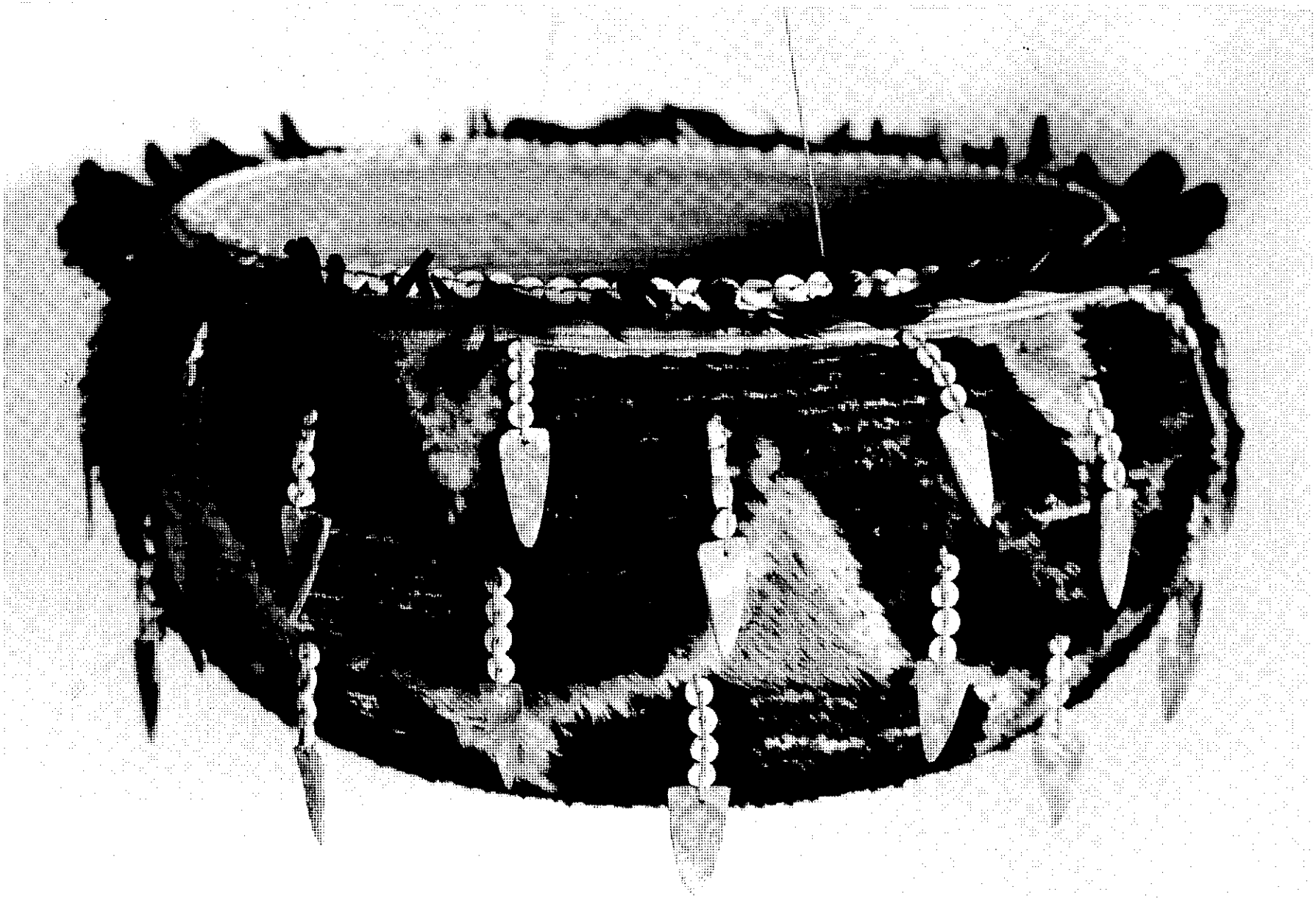
96. Kroeber, op. cit., p. 276.
97. Ibid., p. 275.
98. Ibid., p. 275-276.



Pomo Indian Ceremonial Basket

Courtesy of California State Indian Museum

in Appendices C and D using Merrill's Plants Used in Basketry by the California Indians [99] as a guide.

Tabáh; Tabacco: The World Encompassed states that Tabáh is an herbe; a bag of this herb was hung upon the Septer; and a little basket of it, along with a bundle of black feathers, was presented to Drake as an initial offering during Drake's second day in Nova Albion. It is not mentioned in what form this herb was in the little basket and bag, but there was an association of the containers of Tabáh with the feather bundles, the Septer, and the crownes. Since Tabáh was used from smaller containers, this would indicate that: (1) not a great amount was used at any one time, (2) it may have been a scarce commodity, (3) it was easily stored and carried, (4) special containers may have been expressly made to carry it, and (5) it may have been a trade commodity and not a local product.

The only ceremonial use mentioned was for presents, not for sacrifice by burning as were the feathers and chaine of clamshell disks. This could indicate that its destruction in such manner would not serve an end; but that it was to be used in some other manner -- as a form of potion, or perhaps as an inhalant -- certainly in a manner to induce some physiological influence. The Indians of California used various herbs to induce intoxication and visions.

Evidence in The World Encompassed and The Famous Voyage indicates that the three words (Tabáh, Tobàh, Tobâh, and Tabacco) did not all refer to the same herb. The Famous Voyage was first published in 1589; The World Encompassed in 1628. The Famous Voyage is an abbreviated account, for Hakluyt edited the available material to include them in his larger volumes of voyages. Mr. R. A. Skelton and Professor D. B. Quinn state that Hakluyt tampered with words of other men, but "it was always to clarify, not to distort." [100] They also say of his

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99. R. E. Merrill, "Plants Used in Basketry by the California Indians," University of California Publication in American Archaeology and Ethnology, XX (1923), pp. 213-242.

100. In the introduction to the Hakluyt Society Extra Series No. XXXIX reprint of The Principall Navigations, Voiages and Discoveries of the English Nation, Cambridge University Press, 1965.

first edition (used for the primary Hakluyt reference in this study) that "He does not pay to spelling, punctuation and syntax the minute attention which he had time to give to the revision for the second edition." The word Tabacco remained unchanged in the second edition. (101)

Drake's nephew, the first Baronet, Sir Francis Drake, apparently compiled The World Encompassed and had it published thirty-nine years after The Famous Voyage. The preface to The World Encompassed states that its information was "carefully collected out of the Notes of Master Francis Fletcher Preacher in this employment, and diuers others his followers in the same." The World Encompassed was compiled on the premise that there was much still significant information not generally public. Certainly Drake's nephew felt that The Famous Voyage left too much unsaid concerning the real accomplishments of his illustrious uncle, and he went ahead to prepare the best possible composite record nearly fifty years after the actual voyage. Both The World Encompassed and The Famous Voyage are considered by the Guild to be generally reliable, with The World Encompassed being the more complete.

The term Tabacco found in The Famous Voyage was changed to Tabáh in The World Encompassed. Hakluyt may have used Tabacco as a compromise word, as he only used it once. It is reasonable to suppose that he had access to first-hand information from those who made the voyage; the informants probably reporting Tabáh as either similar in appearance to or used like Tabacco (tobacco). Hakluyt's use of Tabacco does not mean he even intended using the native word reported in The World Encompassed. It was simply a case of clarification for the reader, who would have no way of knowing the nature of Tabáh without special information. Even the more complete The World Encompassed failed in clarification here.

The only words set apart in The Famous Voyage by non-gothic print are Tabacco, Hioh, and Noua Albion. Hakluyt considered these as words of special import and these words with some others were given special treatment in The World Encompassed by italicizing. This similarity in the two accounts, along with the order of general factual presentation, indicate a common source. If this source was Fletcher's

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101. Published in 1600.

notes, [102] then Hakluyt did change Tabán to Tabacco. The World Encompassed uses Tabáh at the same point in narration that The Famous Voyage uses Tabacco. Since the native words, all accented in their second syllable, are widely scattered through The World Encompassed, then they were words recorded by Fletcher, who is officially credited with the main body of the account. The use of diacritic marks is absent in The Famous Voyage, yet they are used in The World Encompassed for every native word but on, Oh. It is unfortunate that the part of the original Fletcher manuscript relating to Nova Albion is missing.

As previously mentioned, Fletcher's spelling was too consistant to reasonably allow the discrepancy between Tabáh and Tobàh; Fletcher meant them as different Indian words, and for a reason. The chronological order of occurance: June 18, Tabáh; June 23, Tobàh; June 26 Tabáh, Tobâh; further indicates that two words were actually meant, and therefore they represented different things. It is not accidental that such disparity in recording should appear on June 26. This difference is heightened by the fact that Tabáh was always attached to a ceremonial stick, being contained in either a little basket or in a bag, whereas Tobàh (Tobâh) was not. On June 26th, bagges of Tobâh packed in round baskets were born by the women. Only men (in one case the Septer bearer, a man of importance) carried Tabáh.

Fletcher was concerned with semantics of the Indians; Hakluyt evidently was not. The variations in spelling and accent offered by Fletcher are indications of exact reporting and are completely understandable, for he was attempting to phonemically portray the Coast Miwok Indian speech[103] which was linguistically quite apart from the Elizabethan speech, which in itself wasn't consistant.

The foregoing semantic consideration provides at least one credible clue: Hakluyt had some reason to use the word Tabacco (a common

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102. Heizer, op. cit., p. 280. Here Heizer states, "It is fairly certain that Francis Fletcher's 'Notes' was the source of the description of California Indian manners and customs,. . . ." He refers to Wagner's justification for this.
103. Heizer, op. cit., p. 278.

Elizabethan spelling of the word "tobacco") instead of the given Coast Miwok Indian word, and in this connection it is important to understand the use of tobacco among the Elizabethans.

The Elizabethan English used the Spanish name for the herb: Tabaco. The Oxford Dictionary states that by 1573 the smoking of tobacco by pipe "is greatlie taken up and used in England." It further indicates that by 1589 it was "widely used for smoking, also chewing, or in the form of SNUFF, and to a slight extent in medicine." Hakluyt's information probably involved one of these uses of the herb Tabáh by the natives of Nova Albion. California Indians were known to have smoked, eaten, and drunk tobacco in a decoction of water. Stone pipes were used by the Indians at Drakes Bay. The tobacco used in such pipes was probably traded. The wild tobaccos known to have been used by the California Indians, Nicotiana attenuata and N. Biglovii, are not known to have been native to Marin County. According to Howell, the only wild tobacco plant ever recorded in Marin County was a single specimen of Nicotiana Biglovii.

The Famous Voyage mentions "bags of Tabacco". The World Encompassed mentions only two bags of Tabáh, but a great many bags of Tobàh. Loeb states that the Pomo kept tobacco in sacks of the skins of fawn, weasel, otter, wildcat, and squirrel.[104] Kroeber reports that pouches have been found only among the northwestern tribes. Tobacco was stored in small globular baskets made for the purpose. These receptacles are also a localized type."[105] On June 18 Drake was given a small basket of Tabáh. This was later identified as being "filled with an herb which they called Tabáh." No direct association at that time with tobacco was made. The plant bearing Tabáh was never mentioned, as was the case of the comparative "an herbe much like our lectuce." The

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104. Loeb, op. cit., pp. 187-188. These observations are similar to William Clark's (Lewis and Clark Expedition 1803) appraisal of the tobacco used by Mandan Indians, Nicotiana quadrivalvis, which he described as"different from any I had seen before; it answers for smoking, but not for chewing." The native western U.S. tobacco plants are very much smaller than the large, cultivated eastern plants, which would have been the plant familiar to the Elizabethan Englishman.
105. Kroeber, op. cit., p. 89.

manner of use was never given beyond its use as a ceremonial present. If it had been burned for sacrifice, its odor would probably have been noted if it was tobacco -- even over the stench of burning feathers -- for the native tobaccos are very strong and pungent, according to Loeb, who further states that the Pomos smoked tobacco but never chewed it. (106) He does not mention its use for sacrifice. Kroeber indicates that it may have been chewed by the Coast Miwoks but was not used for an offering. (107) If the English had seen or smelled the tobacco being smoked, the probability is high that it would have been included as one of the assets of Nova Albion. Its presence would indicate land suitable for tobacco cultivation, as was later done in the Virginia Colony, but nothing was said beyond Tabáh until Hakluyt worked on the account. Both Harrington (108) and Kroeber believe the herb to be tobacco, whereas Wagner (109) and Heizer do not. Heizer points out that Dixon (110) lists the Coast Miwok word for tobacco as Kaiyau, (111) a word far different than Tabáh, though the word may have been different in Drake's day. It is indicated by Kroeber that the Coast Miwok Indians did smoke tobacco adulterated with various materials. (112) The body of evidence does not strongly support Tabáh to be actual tobacco, though Hakluyt called it so.

Tobàh; Tobâh: The accent is varied on this Indian word reported in The World Encompassed. Future research may discover the phonemic system associated with the particular vowel-diacritical combinations involved. Fletcher appears to have recorded the word and evidently, (unless the typesetter erred) had difficulty with its sound. (There are sounds appearing in the languages of the California Indians completely alien to the Elizabethan tongue.) The World Encompassed records the "bagges

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106. Loeb, op. cit., pp. 187-188.
107. A. L. Kroeber, "Salt, Dogs, Tobacco", Anthropology Records, Vol. 6, No. 1, p. 15, maps 10 and 11.
108. John P. Harrington, "Tobacco Among the Karuk Indians", Bureau of American Ethnology, Bull. 94, 1932, pp. 17-18, 40.
109. Henry R. Wagner, Drake's Voyage Around the World, p. 492.
110. Roland B. Dixon, "The Northern Maidu", Bulletin of the American Museum of Natural History, XVII, Pt. 111, (1905), fig. 19.
111. This Moquelumnuan word usage is confirmed by Barrett in his Ethno Geography of the Pomo Indians.
112. Kroeber, "Salt, Dogs, Tobacco", p. 15, map 10.

of Tobàh" as being used for a dual purpose when it tells of the Indians "who came now the second time vnto vs, bringing with them as before had beene done, feathers and bagges of Tobàh for presents, or rather indeed for sacrifices, vpon this perswasion that we were Gods." Nothing of the qualities of either Tabáh or Tobàh were given. Tabáh was always referred to as an herbe, but Tobàh never. One would believe Tobàh not to be recognized as an herb because Tabáh was so carefully labeled as such, but Tobàh was not listed among the presents as a food, either. Recorded as a sacrifice, it would have been ceremonially burned, as were the feathers and bony chaines. More of it was in evidence than was Tabáh, which would indicate an accessible local source, or greater source. It was either naturally of a size or condition that it could have been kept in pouches small enough for a number to fit in an Indian basket of the type described in The World Encompassed, or could be rendered to such an appropriate size or condition. It was probably a dry material, as it was to be burned. Nothing further is apparent beyond information that others (the English) were expected to recognize or receive it, revealing that it was well (commonly) known among the Indians, and finally, that it did not excite the English to further comment.

A possibility for either Tabáh or Tobàh is an herb growing inland in the Point Reyes area and was used ceremonially by many California Indian tribes. Kroeber and Balls identify it as Jimson Weed (Datura metaloides), and that it was known to the California Indians as toloache. It contains powerful narcotics producing intoxication and visions. (113)

Though Kroeber states that "jimson weed ceremonies are everywhere clearly puberty rites in some measure; (114) he also indicates that in southern California these ceremonies "are directed predominantly to either initiations or mournings." (115) He further states, "To the north the Miwok did not drink Jimson weed; in fact, it probably grows

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113. The United States Dispensatory, p. 86, states that the alkaloids are chiefly scapolamine, with some concentrations of metaloidine and nor-hyocyamine. On p. 1029, Datura stromonium is said to contain Stramonium, a drug quite similar in use to belladonna, as well as atropine.
114. Kroeber, op. cit., p. 367.
115. Ibid., p. 567.

little in their habitat." (116) This last statement could be more definitive, though it gives an authoritative generalization. Much is known concerning the Interior Miwok, but there is little information concerning the Coast Miwok.

In 1956 the Guild found a single specimen of a plant similar to Datura metaloides growing in the gravel on the bank of Paper Mill Creek near the town of Point Reyes Station in association with an abundance of Datura stromonium var. Tatula. (117) The occurrence of either species in the area, though neither are recorded as locally native, poses the question as to their availability to the Indians of Drake's day. Datura stromonium var. Tatula is reported by Munz to be a native of tropical America, and locally adventive. Datura metaloides is a recognized California native, yet, as with Datura stromonium var. Tatula, it, too, is considered to have originated in tropical America. Since Datura metaloides is considered to have traveled northward into California by historical times, so may have Datura stramonium var. Tatula. There is a possibility that either one, or both, may have been in the Point Reyes area in Drake's day.

According to Kroeber, toloache was generally taken as a concoction of the root with water. He makes no mention of the leaves or seeds being used, yet all parts of the plant are active, with the roots containing the least amount of the narcotic alkaloid, according to the United States Dispensatory.

Either of the Daturas may, in the form of the shredded leaf, been the Tabáh of Nova Albion. They may also have been the Tobàh, in the form of the ground-up root, which is not likely to have been called an herb unless seen previous to being ground, when it would have been observed as a root and reported as such, as was Petáh.

Another possibility for Tobàh is some form of fungi. The Point

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116. Ibid.

117. It had both a violet corolla and a green stem. The corolla was only a little larger than the Datura stromonium var. Tatula it was among. The corolla was not the large one of Datura metaloides. This specimen may have been a variant of Tatula, but this is uncertain. It was not collected.

Reyes area with its fog-drenched forests of Douglas Fir and Bishop Pine (Pinus murricata) is famous as a fungi collection area. Investigation in the area of the fungi has yielded a paucity of information; however, the possibility still stands and needs further exploration.

## General Landscape

Stocks of wood: Indian men and women who accompanied the king during his visit with Drake mutilated themselves by falling upon "stocks of wood, and prickling bushes, or whatever else lay in their way", according to The World Encompassed. The use of stock denoted a bare stem of a tree. In order to fall upon a stock it would have to be rather low, not much above waist-high. The coastal Marin County shrubs meeting this criterium are the Blue Blossom and the Coyote Brush (Baccarus Douglasii and mostly B. Pilularis var. consanguinia). The most prevalent stock is the Coyote Brush, which occurs as a short-lived bush both in prostrate form and in bushes up to six feet high. It grows waist-high in quite windy locations, with both living and dead plants in evidence; this is the condition found on the hills above Drake's Cove. Even the live plants have naked, dead appearing stems which are tipped with brushes of leaves.

Pricking bushes: This is a general term stating a plural. Whether this plural means several kinds of bush, or a number of bushes of the same kind, is not clear. The Elizabethan use of bush is the same as today's. The term pricking would indicate that the bushes possessed thorns or prickles producing small wounds (pricks). Although the bushes were an important feature of the landscape at Drake's Cove, neither identification nor comparison were given by The World Encompassed. (See previous paragraph for quotation). As with the stocks, they were of sufficient size for the Indians to throw themselves upon and receive damage by pricking.

There are only five kinds of actual pricking bushes known to be native to the physical compass of this study -- or to Marin County: the Douglas Hawthorne; the Chapperal Pea, and the California Wild Rose,

the Gooseberry(spp.), and the Salmon-berry.[118] Of these, only the last three are common to the Point Reyes Peninsula and to Drakes Estero.

According to Howell, the Douglas Hawthorn (Crataegus Douglasii) has been found in Marin County only near Nicasio, its southermost known station. This hawthorn is rather similar to the Old World hawthorns of 16th Century England.

The Chapparal Pea (Pickeringia montana) grows in higher elevations and is not found immediately near the salt water. Jepson lists its range as between 2,000 and 5,000 feet elevation.

The California Wild Rose (Rosa californica) has stout recurved thorns. It is found only as an occasional in the coastal scrub of the hills surrounding Drake's Cove. This rose is similar to the wild brier-rose of England, which was called both a rose and a brier in Elizabethan England.

There are three species of Gooseberry common to the Drakes Bay area: Ribes divaricatum; R. Menziesii; and R. Menziesii var. leptosnum. Of these, R. Menziesii is, according to Howell, the species generally found in situations more exposed to wind and sun, which would be the situation at Drake's Cove. These plants are only occasional on the Point Reyes Peninsula and are not normally found growing here as thickets. This situation exists throughout Marin County for the three species. Ribes Menziesii has stout, needle-like spines occurring in groups of three at the nodes.

The Salmon-berry (Rubus spectabilis var. franciscanus) favors a

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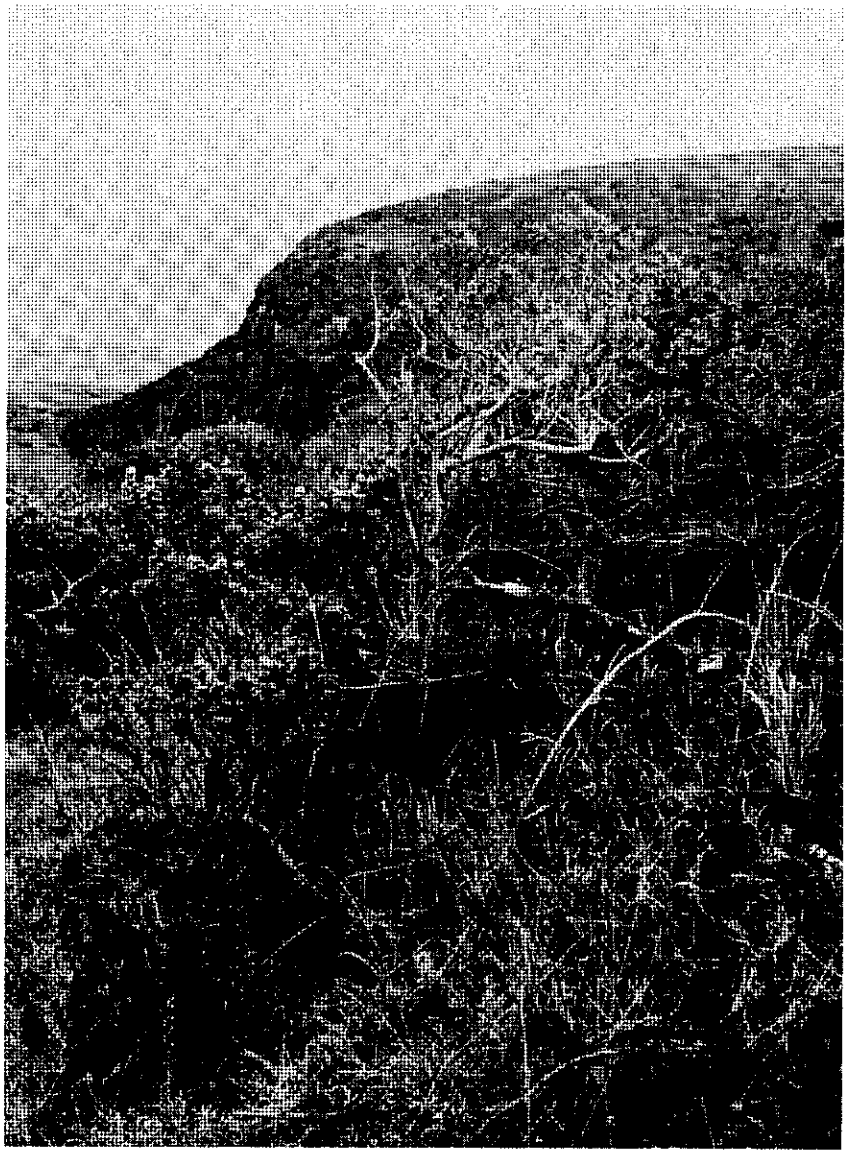
118. The California Blackberry (Rubus ursinus) might be considered as a sixth kind. At Drake's Cove it is a low, trailing plant, quite recognizable as a blackberry to the English, and reasonably so-called. The World Encompassed used neither the Elizabethan terms blackberry nor brambles, with brambles referring to any prickly shrub -- and especially the blackberry. Blackberries do climb on other bushes and could conceivably create pricking bushes. This combination is only occasional and would not have formed the bulk of the pricking bushes.

"the women...would with furie cast themselues vpon...stocks of wood, and pricking bushes,..."
---(The World Encompassed)



Robert Allen

"stocks" of Coyote Brush

Robert Allen

"pricking bushes" of Salmon Berry

SCENES AT DRAKE'S COVE

situation of fresh water near the ocean. A member of the Rose family, it possesses many short, easily detached needle-like prickles on its main stems. (119) The primocanes are more heavily armed. It tends to grow in thickets and is found in abundance at Drake's Cove. It would not have been a familiar plant to Drake's party, though it somewhat resembles a giant raspberry.

The California Wild Rose, Gooseberry and Salmon-berry may all have been included in the term pricking bushes; however, the Salmon-berry was undoubtedly the one most encountered, for not only is it abundant, but is not likely to have changed its habits in as short a botanical period as three-hundred years. There is no question as to its being a native. It is listed as after Frederick Pursh, (120) who published his Flora Americae Septentrionalis in 1814. When the Indians came single-file down the hill to Drake's camp they would have had to pass through dense thickets of this plant. (121) Its thorns can produce numerous small pricking wounds, as well attested by members of the Guild on field trips to the area.

The Salmon-berry is a coastal plant. Howell cites no evidence of its growing any further inland than Sausalito. It thrives near the ocean, possibly liking the salt trace. The natural distribution of Salmon-berry would limit the location of Drake's encampment to a coastal, or near coastal, site rather than any inner San Francisco Bay site east of Sausalito.

Trees without leaves: In describing the desolate appearance of the Nova Albion coastal countryside in June and July, The World Encompassed states: "Besides how vnhandsome and deformed appeared the face of the earth itselfe! shewing trees without leaues, and the ground without greennes in those moneths of Iune and Iuly. It does not declare that all trees were without leaves, but simply that "trees without leaves"

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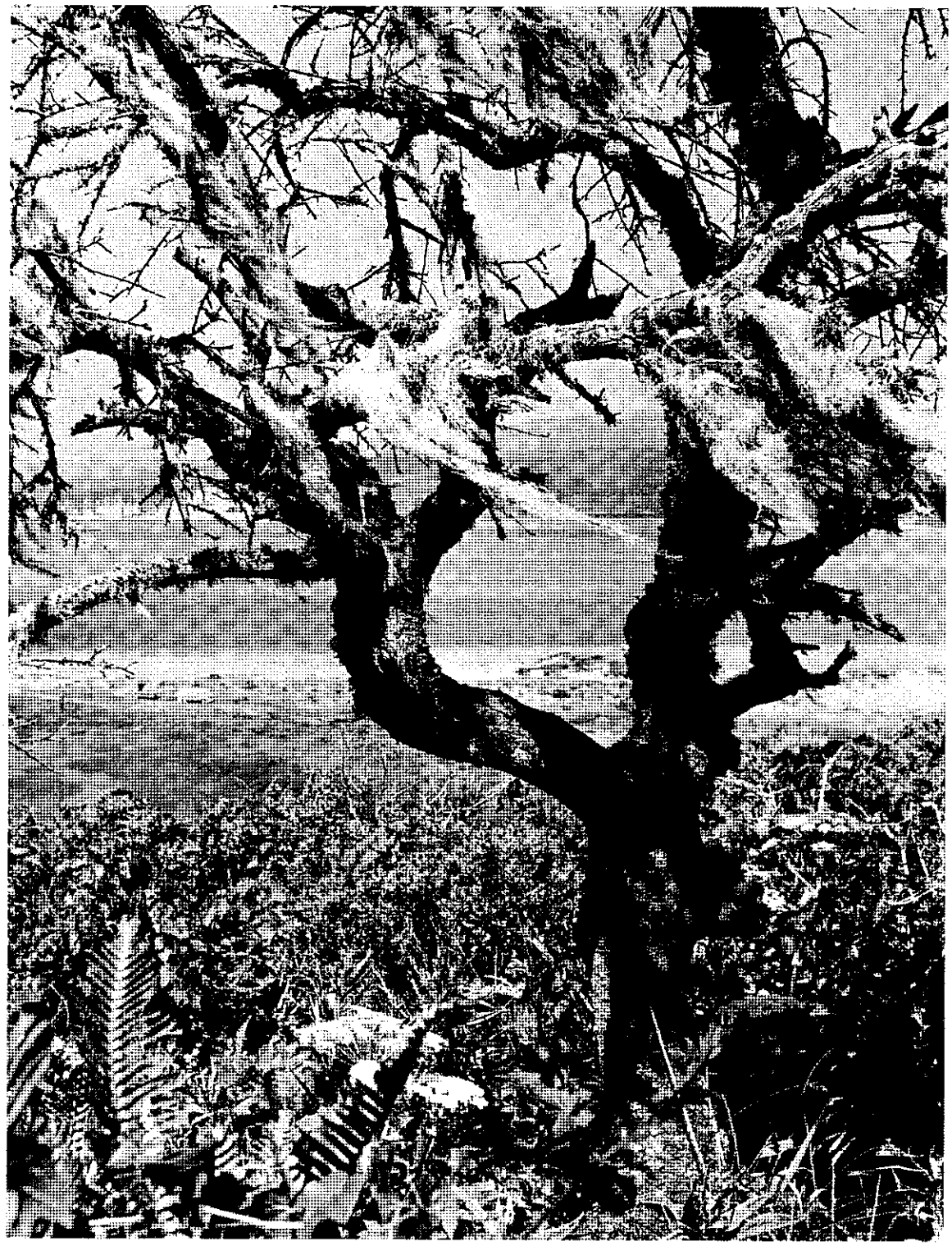
119. Munz states that only the "primocanes" are sometimes armed. Jepson states that both the "pro-canes" and older stems are armed. The Guild has found the latter to be the case at the Drake's Cove location.
120. Early American botanist.
121. See Illustration.



Robert Allen

Old Blue Blossom Tree overlooking
Drake's Cove.

helped the "face of the earth" to appear "unhandsome and deformed". In the small ravines and gullies of the exposed, harsh habitat of the hills about Drake's Cove are to be found lichen-hung specimens of the Blue Blossom. This large shrub, along with Toyon (Photinia arbutifolia) and California Wax Myrtle (Myrica californica), represent the only trees. Elizabethans often considered such large shrubs as trees, according to the Oxford Dictionary. Of these three, the Blue Blossom fits the description. Under the harsh conditions found at Drake's Cove, a healthy Blue Blossom tree will appear mostly as naked trunk and branches, with only a sparse show of leaves in its crown. Whereas, all three shrubs are evergreen, these Blue Blossoms give their skeletons to the wind and fog, and these arboreal skeletons, draped with fructicose lichens, bear silent witness to the sere aspect of the land.

Ground without greenness: To further describe the desolate character of this landscape, The World Encompassed speaks of "the ground without greenness". This reference was made, as was the "trees without leaves", to accentuate the unusual coldness of the foggy weather at Drakes Bay. The account mentions how the weather was unusual even to the Indians, who were not dressed for the cold and were trying hard to hide from the wind, this included snuggling under the very garments of the English. The account states that "Some of our mariners in this voyage had formerly beene at Wardhouse, in 72 deg. of North latitude: who yet affirmed, that they felt no such nipping cold there in the end of Summer, when they departed thence, as they did here in those hottest months of June and July." (122) Not only was the weather unseasonably cold to the English -- Drakes Bay is in only 38 degrees North Latitude, the same as the Mediterranean Sea -- but even the general aspect of the land along the outer Nova Albion coast was sere. To Englishmen who were used to the overwhelming greenness of the English coast and countryside in the months of June and July, the situation was all out of reason that they should find "ground without greenness"; England was even 12 degrees north of the latitude at Drakes Bay! They did feel different, however, when they made their inland journey and could state, "The inland we found to be farre different from the shore, a goodly country and fruitful soyle, fit for the use of man:. . . ."

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122. Wardhouse was in the extreme north part of Norwar at Longitude $28^{o}23'$ E., Latitude $71^{o}05'$ N. (approx.), near Nordkyn.

The Central California coast generally enjoys a cool Mediteranean type climate, [123] but by the end of June the green hills have all turned brown. The native grasses [124] have followed their natural cycle and are becoming one with the previous year's accumulation of dead mat, thereby contributing substantially to the brown appearance of the hills. This provides mulch and insulation to insure a good germination bed for the following year's growth. Probably the most common grass on the Point Reyes Peninsula is the Needle Grass (Stipa pulchra); this would have made up most of the greenness that was missed so.

Some non-grass plants retain greenness after the grass has turned brown, but these are not sufficient to affect the general appearance and are hidden by the taller grass.

Fruitful soyle: Nova Albion was not described as all stark. The inland was described in The World Encompassed as "farre different from the shoare, a goodly country, and fruitfull soyle, stored with many blessings fit for the use of man:. . . ." The "fruitfull soyle" was not only producing Conies and gold and silver, [125] but pleasing forms of vegetation as well, even beyond the Conies'"meate." Certainly Drake saw fir forest, grasslands, oak forest, swamp, and stands of bay, willow, and alder. An eastward crossing of the Inverness Ridge finds the vegetation varied and dense, especially in the areas protected from the wind. Drake could scarcely have helped particularly noting the Douglas Fir trees which would make such excellent masts and other naval stores.

Riches and treasures: As just considered, Drake found much of botanical value during his inland journey. Previous to this, when he accepted "the scepter, crowne, and dignity of the sayd countrie into his hand," so that Queen Elizabeth might enjoy "the riches and treasures thereof (wherewith in the upland countries it abounds). . . ," plants, as well as animals and minerals were a very important part of those riches and treasures.

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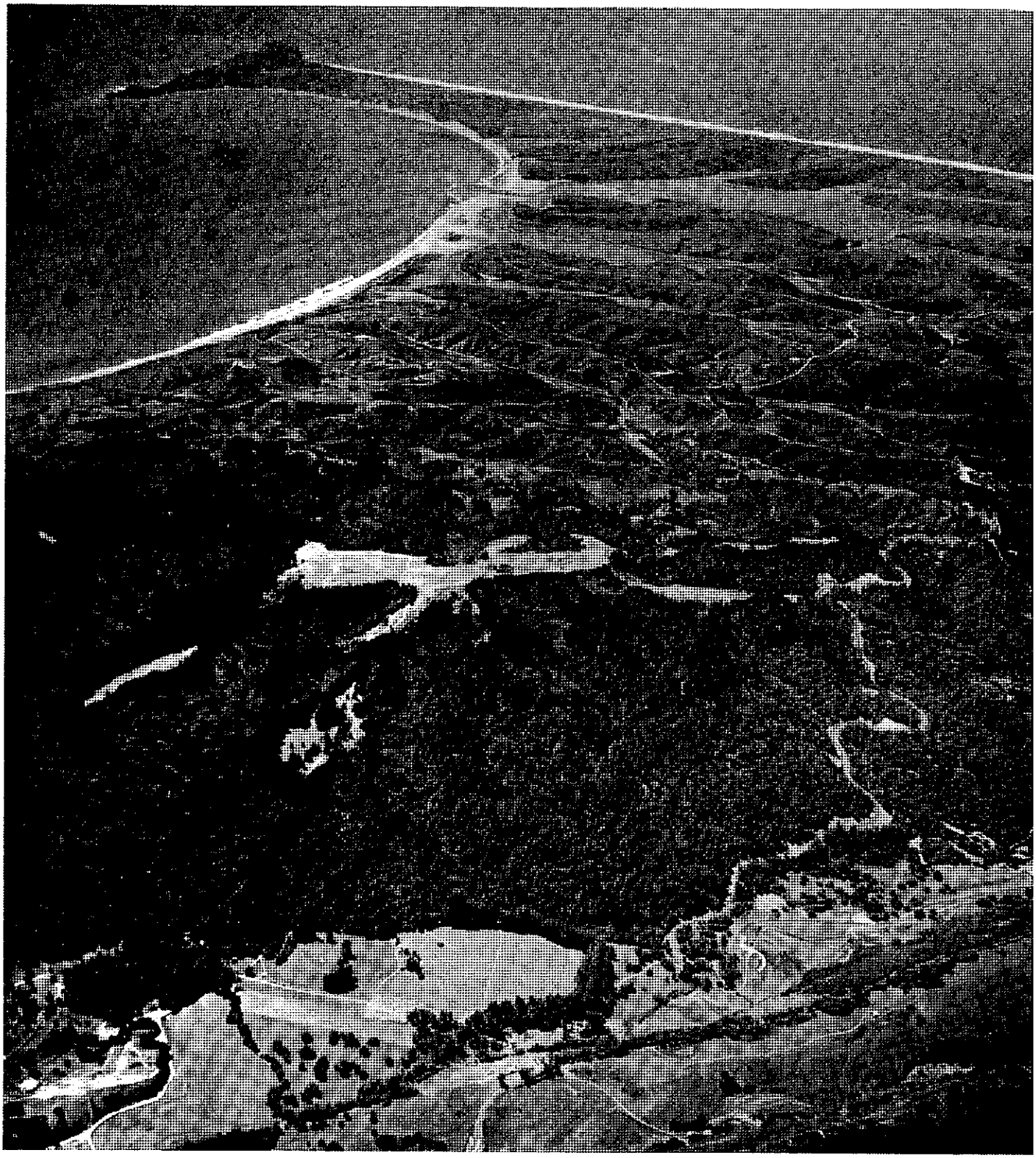
123. The Csb group of the Köppen system of climate typing.
124. See Appendix E for a list of the native grasses of the Point Reyes area.
125. Gold and silver are mentioned in The Famous Voyage.



Robert Allen

The Point Reyes Peninsula
& Drakes Bay

"The inland we found to be
farre different from the shore,
a goodly country and fruitful soyle,
fit for the use of man...."

---The World Encompassed

## Conclusion

Research by the Drake Navigators Guild and previous studies by recognized botanical authorities shows conclusively that the botanical references in the Nova Albion accounts are all applicable to the Point Reyes area and its primitive inhabitants.

# APPENDIX A

## ALPHABETICAL LISTING OF BOTANICAL CLUES

## FROM THE ACCOUNTS

KEY:
- A.N. - Anonymous Narrative.
- C. - Cermeño's "Declaration".
- C.A. - Camden's Annales.
- F.V. - Famous Voyage.
- J.Dr.1 - John Drake's 1st Deposition.
- J.Dr.2 - John Drake's 2nd Deposition.
- M. - Maddox Diary.
- W.E. - World Encompassed

| CLUE | SOURCE AND FREQUENCY OF OCCURRENCE | PAGE NUMBERS WHERE REFERRED TO IN THE STUDY |
|---|---|---|
| arrowes | W.E - 3; J.Dr.2 - 1 | 5, 20-22 |
| bags (of Tabacco) | F.V. - 1 | 32-33 |
| bagges | W.E. - 1 | 32, 34-35 |
| boale | W.E. - 1 | 5, 16 |
| boale(s), (see "wassaile") | W.E. - 1 | 5, 16 |
| basket | W.E. - 2 | 5, 29, 30, 32 |
| baskets | W.E. - 1 | 5, 16, 29 |
| blacke wood | W.E. - 1 | 5, 26-27 |
| bowes | W.E. - 3; J.Dr.2 - 1; F.V. - 1 | 5, 20-21 |
| bread | W.E. - 1; C. - 1 | 5, 7, 9, 11, 12-13, 14 |
| bulrushes | W.E. - 1; F.V. - 1; C. - 1 | 17, 23 |
| bushes (see "pricking bushes") | | |
| canow | W.E. - 1 | 5, 22-25 |
| cals | F.V. - 1 ) | |
| cawle | W.E. - 1 ) | 5, 18 |
| cawles | W.E. - 2 ) | |
| cheepe | M. - 1 | 5, 7 |

| CLUE | SOURCE AND FREQUENCY OF OCCURRENCE | PAGE NUMBERS WHERE REFERRED TO IN THE STUDY |
|---|---|---|
| clefts of wood | W.E. - 1) | 5, 6 |
| clifts of wood | F.V. - 1 ) | |
| crowne | F.V. - 2 ) | 5, 19 |
| crownes | W.E. - 5; F.V. - 1 ) | |
| downe | W.E. - 3 | 5, 18, 19 |
| faire | F.V. - 1 ) | 5, 27-28 |
| firme | W.E. - 1 ) | |
| fruitful soyle | W.E. - 1 | 5, 40-41 |
| great | W.E. - 1; F.V. - 1; ) | 5, 27-28 |
| | C.A. - 1 ) | |
| greate | A.N. - 1 ) | |
| ground without greenness | W.E. - 1 | 5, 39-40 |
| herbe | W.E. - 2 | 2, 3, 5, 30, 33, 35 |
| houses | W.E. - 2; F.V. - 1 | 3, 5, 6, 7, |
| kembing | W.E. - 1 | 5, 18 |
| knit | F.V. - 1 ) | 5, 18 |
| knitte | W.E. - 1 ) | |
| knitworke | W.E. - 2 | 5, 18, 19 |
| leaves (see "trees without leaves") | | |
| lectuce | W.E. - 1 | 3, 5, 9, 19, 28-29, 33 |
| little basket (see "basket") | | |
| mace | W.E. - 1; F.V. - 1 | 5, 26 |
| meale | W.E. - 1 | 5, 17 |
| meate | W.E. - 2; F.V. - 1 | 5, 15-16, 41 |
| monument | W.E. - 1; F.V. - 1 | 5, 27-28 |
| nedworke | W.E. - 1; F.V. - 1 | 5, 18 |
| Petán | W.E. - 1 | 3, 5, 9-13, 15-17, 36 |
| post | W.E. - 1; A.N. - 1 ) | 5, 27-28 |
| poste | F.V. - 1 ) | |
| Poste | C.A. - 1 ) | |
| pricking bushes | W.E. - 1 | 5, 37-39 |
| riches and treasures | W.E. - 1; F.V. - 1 | 5, 41 |
| roote | W.E. - 1 | 5, 9-13, 15 |

| CLUE | SOURCE AND FREQUENCY OF OCCURRENCE | PAGE NUMBERS WHERE REFERRED TO IN THE STUDY |
|---|---|---|
| round basket | W.E. - 1 | 5, 29, 32 |
| rowing | W.E. - 1 | 5, 22 |
| royall mace (see "mace) | | |
| rushes | W.E. - 2; F.V. - 1 | 5, 6, 29 |
| scepter | W.E. - 4; F.V. - 5 ) | 5, 26-27, 30 |
| Scepter | W.E. - 4 ) | |
| Septer | W.E. - 5 ) | |
| seeds | W.E. - 2 | 5, 28-29 |
| soyle (see "fruitful soyle") | | |
| stocks of wood | W.E. - 1 | 5, 37 |
| string | W.E. - 1 | 5, 19-20 |
| Tabacco | F.V. - 1 | 5, 30-34 |
| Tabáh | W.E. - 2 | 5, 30-36 |
| Tobàh | W.E. - 1 | 5, 9, 30, 32-36 |
| Tobâh | W.E. - 1 | 5, 30, 32, 34 |
| treasure(s) (see "riches and treasures") | | |
| trees without leaves | W.E. - 1 | 5, 39-40 |
| villages | W.E. - 1; F.V. - 1 | 3, 5, 6-7 |
| wassaile boales | W.E. - 1 | 5, 16 |
| wood (see "stocks of wood") | W.E. - 2; J.Dr.1 - 1 | 5, 37 |

## APPENDIX B

## INDEX OF PLANTS OCCURRING IN THE TEXT

# APPENDIX C

## MATERIALS USED BY THE POMO AND MIWOK INDIANS FOR BASKETRY

This list is derived from R. E. Merrill, "Plants Used in Basketry by the California Indians". The taxonomy is as presented by Merrill.

Plants listed in parenthesis under Merrill's ssp. are suspect plants growing in Pomo Indian territory, but not actually listed by Merrill.

Asterisks indicate plants of Pomo Indian usage found in Coast Miwok Indian territory. These were probably used by the Miwoks as well as the Pomos.

## POMO BASKETRY MATERIALS

| SCIENTIFIC NAME | COMMON NAME | PART USED |
|---|---|---|
| Calycanthus occidentalis | Western Spice Bush | stem-bark |
| Carex Mendocinoensis | Sedge | root |
| Carex spp. ǂ(see Appendix D) | Sedge | root |
| Cercis occidentalis | Redbud | bark- sapwood |
| Corylus californica ǂ | California Hazel | stem |
| Juniperus occidentalis | Sierra Juniper | root |
| Pinus sabiniana | Digger Pine | root |
| Pinus spp. ǂ | | |
| (P. muricata | Bishop Pine | root) |
| Pityrogramma triangularis ǂ | Goldback Fern | stem |
| Pseudotsuga magnifica | Red Fir | root |
| Pseudotsuga taxifolia ǂ | Douglas Fir | root |
| Pteridium aquilinum ǂ | Western Bracken | root |
| Salix argophylla | Willow | stem |
| Salix Hindsiana ǂ | Willow | stem |
| Salix nigra | Black Willow | stem |

ǂ Indicates plants found in Coast Miwok territory.

| SCIENTIFIC NAME | COMMON NAME | PART USED |
|---|---|---|
| Salix sitchensis | Velvet Willow | stem |
| Salix spp. ‡ | | |
| (S. Coulteri | Coulter Willow | stem?) |
| (S. lasiolepis | Arroyo Willow | stem?) |
| (S. Scouleriana | Scouler Willow | stem?) |
| (S. lasiandra | Yellow Willow | stem?) |
| (S. laevigata | Red Willow | stem?) |
| Torreya californica ‡ | California Nutmeg | root |
| Vitis californica | Wild Grape | stem |

## MIWOK BASKETRY MATERIALS (1)

| | | |
|---|---|---|
| Acer macrophyllum ‡ | Big Leaf Maple | sapwood |
| Ceanothus integerrimus | Deer Brush | stem |
| Cercis occidentalis | Redbud | bark-sapwood |
| Chlorogalum pomeridium ‡ | Soap Plant | juice |
| Epicampes rigens californica | Grass | stalk |
| Iris spp. ‡ | | |
| (I. longipetala | Iris | leaf) |
| (I. Douglasiana | Douglas Iris | leaf) |
| (I. Douglasiana Herbert var. major | Marin Iris | leaf) |
| (I. microsiphon | Ground Iris | leaf) |
| Pinus ponderosa | Yellow Pine | root |
| Pteridium aquilinum ‡ | Western Bracken | root |

‡ Indicates plants found in Coast Miwok territory.

1 - Some of this material is not native to Coast Miwok territory, but is native to Interior Miwok territory.

# APPENDIX D

## SOME OF THE MORE COMMON SEDGES

## FOUND IN COAST MIWOK TERRITORY [1]

Carex spp. (List derived from John Howell's Marin Flora.

C. amplifolla - Boott.
C. barbarae - Dewey
C. Bolanderi - Olney
C. Cusickii - Mkze.
C. densa - Bailey
C. exsiccata - Bailey
C. feta - Bailey
C. globosa - Boott.
C. gynodynema - Olney
C. nudata - Boott.
C. obnupta - Bailey
C. serratodens - Boott.
C. subbracteata - Mkze.
C. vicaria - Bailey

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1 - For definition of this area see Kroeber, Handbook of the Indians of California, p. 274, Fig. 22.

# APPENDIX E

## PRINCIPAL GRASSES OF THE POINT REYES PENINSULA AREA [1]

| SCIENTIFIC NAME | COMMON NAME |
|---|---|
| Agropyron arenicola - Davy | Wheatgrass |
| Agrostis Blasdalei - Trin. ) | Bentgrass |
| Agrostis californica - Trin.) | |
| Agrostis diegoensis - Vasey) | |
| Calamagrostis nutkaensis (Presl) Steud. | Reedgrass |
| Deschampsia elongata (Hood.) Munro | |
| Deschampsia holciformis - Presl. | Hairgrass |
| Elymus glaucus - Buckl. | Blue Wild-Rye |
| Festuca californica - Vasey ) | Fescue |
| Festuca megalura - Nutt. ) | |
| Festuca rubra - L. ) | |
| Gastridium ventricusum (Gouan) Schinz & Thell. | Gastridium |
| Glyceria pauciflora - Presl. | Mannagrass |
| Holcus lanatus L. | Velvet Grass |
| Hordeum californicum - Cevas & Stebbins | Barley |
| Koeleria cristata - (L.) Pers. | Oat |
| Poa Douglasii - Nees. | Bluegrass |
| Phalaris californica H. & A. | Canarygrass |
| Stipa pulchra - Hitchc. | Needlegrass |

NOTE: Grasses peculiar to the immediate littoral zone, such as Puccinella grandis Wallen, Elymus mollis Trin., and Spartina foliosa Trin., have been omitted from the above list, though they are endemic to the area and may have been encountered by Drake.

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1 - Derived from John Howell's Marin Flora.

# APPENDIX F

## INDIAN PLANT NAMES USED IN THIS STUDY

# APPENDIX G

## A COMPARISON OF WRITING STYLES

The following passages relate to the dancing of the Indians at Nova Albion.

From the Maddox Diary:

> Ther song when they worship god is thus -- one dauncing first wh his handes up, and al ye rest after lyke ye prest and people. . . .

From The World Encompassed:

> . . . the Scepter bearer with a composed countenance and stately carriage began a song, and answerable thereunto, obserued a kind of measures in a dance.

# BIBLIOGRAPHY


Aker, Raymond, The Cermeño Expedition at Drakes Bay 1595, Drake Navigators Guiod, Point Reyes, 1965.

Allen, Robert W., Identification of "an herbe much like our lectuce..." Drake Navigators Guild, Point Reyes, 1971.

Allen, Robert W. and Robert W. Parkinson, Identification of the Nova Albion Conie, Drake Navigators Guild, 1971.

"Anonymous Narrative, The", Harleian MSS No. 280, Folio 23, British Museum.

Bailey, L. H., Standard Cyclopedia of Horticulture, II:C-E, The MacMillan Co., New York, 1916.

Balls, Edward K., Early Uses of California Plants, University of California Press, Berkeley and Los Angeles, 1962.

Barrett, Samuel A., "Ceremonies of the Pomo Indians", University of California, Publ. Amer. Arch. and Ethn., XII:10 (1926), University of California Press, Berkeley, California.

_____, "The Ethno-Geography of the Pomo and Neighboring Indians", University of California, Publ. Amer. Arch. and Ethn., VI:1, The University of California Press, Berkeley (February, 1908).

_____ and E. W. Gifford, "Miwok Material Culture", Bulletin of Miwaukee Public Museum, II:4 (March, 1933), Published by the Yosemite Natural History Association, Inc., Yosemite National Park, Calif.

Beardsley, Richard K., "Temporal and Areal Relationships in Central California Archaeology, Part One", Reports of the University of California Archaeological Survey No. 24, (November 30, 1954)

Camden, William, Annales, The True and Royal History of the Famous Empress Elizabeth, (Abraham Darcie, London, 1625), as quoted in Wagner, Henry R., Sir Francis Drake's Voyage Around the World, John Howell, San Francisco, 1936.

Dixon, Roland B., "The Northern Maidu", Bulletin of the American Museum of Natural History, XVII:111 (1905)

Drake, Sir Francis, "Early English Voyages to the Pacific Coast of America (from their own, and contemporary English accounts.) Sir Francis Drake-III," Out West, XVIII:1 (January, 1903, Los Angeles.

Fink, C.G. and E. P. Polushkin, Drake's Plate of Brass Authenticated, California Historical Society, Special Publication No. 13, San Francisco, 1937.

Hakluyt, Richard, The Principall Navigations, Voiages and Discoveries of the English Nation, photolithographic reprint, Vol II, Hakluyt Society, London, 1965.

Harrington, John P., "Tobacco Among the Karuk Indians", Bureau of American Ethnology, Bulletin 94 (1932).

Haskin, L. L., "A Frontier Food, Ipo, or Yampa, Sustained the Pioneers", Nature Magazine, Vol. 14 (1908).

Heizer, Robert F., Francis Drake and the California Indians, 1579, University of California Press, Berkeley and Los Angeles, 1947.

Howell, John Thomas, Marin Flora, University of California Press, Berkeley and Los Angeles, 1949.

Jepson, Willis Linn, A Manual of the Flowering Plants of California, University of California, 1925.

Kroeber, A. L., "The Patwin and Their Neighbors", University of California Publications in American Archaeology and Ethnology, XXXIX:4 (1932), University of California Press, Berkeley, California

_____, "Salt, Dogs, Tobacco", Anthropology, Records, VI:1 (1941), University of California Press, Berkeley and Los Angeles,

_____, Handbook of the Indians of California, Bureau of American Ethnology, Bulletin 78, Washington, D.C., 1925.

Latta, F. F., Handbook of Yokuts Indians, Bear State Books, Oildale, California, 1949

Loeb, E. M., "Pomo Folkways", University of California Publications in American Archaeology and Ethnology, XXXIII"1 (1932), University of California Press, Berkeley, California.

Loudon, J. C., An Encyclopedia of Gardening, Third edition, Longman, Hurst, Rees, Orme, Brown and Green, London, 1825.

Merriam, C. Hart, Studies of California Indians, University of California Press, Berkeley and Los Angeles, 1955.

Merrill, R. E. "Plants Used in Basketry by the California Indians", University of California Publications in American Archaeology and Ethnology, Vol. XX, (1932), University of California Press, Berkeley, California.

Munz, Philip A., A California Flora, University of California Press, Berkeley and Los Angeles, 1959.

Nuttall, Zelia, "The Second Declaration of John Drake", New Light on Drake, The Hakluyt Society, London, 1914.

Penzer, N. M., ed., The World Encompassed and Analogous Documents, The Argonaut Press, London, 1926.

Piper, C. V., "Flora of the State of Washington", U.S. National Museum Contribution, U.S. National Herbarium, Vol. 11 (1906).

Pope, Saxton Temple, Bows and Arrows, University of California Press, Berkeley, California, 1962.

Sudworth, George B., Forest Trees of the Pacific Slope, U.S. Govt. Printing Office, Washington, D.C., 1908.

Taylor, E.G.R., "Francis Drake and the Pacific", The Pacific Historical Review I (Sept., 1932).

U.S. Forest Service, U.S. Dept. of Agriculture, Range Plant Handbook, U.S. Govt. Printing Office, Washington, D.C., 1937.

Wagner, Henry Raup, Sir Francis Drake's Voyage Around the World, John Howell, San Francisco, 1926.

_____, Spanish Voyages to the Northwest Coast of America in the Sixteenth Century, California Historical Society, 1929.

_____, ed., "The Voyage to California of Sebastian Rodriquez Cermeno in 1595", California Historical Society Quarterly, III, No. 1 (April, 1924), pp. 3-24.

Wilbur, Marguerite Eyer, ed., Vancouver in California 1792 1794, Glen Dawson, Los Angeles, 1954.