Native Languages of California

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Presumably, at one time it was common for a great many highly divergent languages to be spoken within a modest geographical area. Such a situation still obtains in various parts of the world—in the Caucasus, in West Africa, in New Guinea, in the mountains and gorges at the convergence of Upper Burma, Thailand, and southwestern China. Another such tangle of languages, perhaps in some ways the most complex of all, was found in the California culture area until the European conquest, which began just two centuries ago. Over the mountains, valleys, and deserts of the area were spread no fewer than 64—and perhaps as many as 80—mutually unintelligible tongues, further differentiated into an unknowably large number of dialects. Miraculously, something more than two dozen of these languages have survived through the middle of the twentieth century—as terminal cases, it is true, and spoken only by a few elderly persons. These languages have provided the modern researcher with a glimpse, however faded, of a marvelous linguistic diversity with its origins lying millennia in the past.

The orderliness of Darwinian theorists inspired nineteenth-century linguists to reach certain conclusions about the mechanisms of diachronic or historical change in languages. Thus a detailed study of the historical development of the Indo-European family of languages, the principal pastime of nineteenth-century linguists, led to the formulation of clear-cut tenets with regard to the dynamisms of linguistic change. The maturation of this understanding about language was much abetted by the nature of the data from which such understanding was derived. Not only are there dozens of modern Indo-European languages to which anyone may have massive access, but also there are extensive records of older languages—Sanskrit, Greek, Hittite, Latin—sometimes going back as far as 3,500 years. The analysis of this ocean of material provided insights of vast importance to the study of language: that, for example, sound-change in language is regular, recurrent, and predictable and that apparent exceptions are always due to special circumstances about which individual statements may be made, given sufficient information. One of the most important types of special circumstance is that in which words have been borrowed by one language from another. Such words, of course, do not reflect the historical development of the borrowing language prior to the time of their adoption.

It is only in the light of these principles that the situation with regard to the languages of California can really be understood. A basic system of recurrent sound correspondences is the only known certain diagnostic for validating a genetic relationship among any group of languages. Such a validation is possible in California for small families of languages; in fact, it has been done for Miwokan (Broadbent and Callaghan 1960), Yokutsan (Golla 1964), Palaihnihan (Olmsted 1964), Pomoan (McLendon 1973; Moshinsky 1974), Maiduan (Ultan 1964), and Yuman (Langdon 1968, 1975; Wares 1968). Those California languages belonging to the three relevant exterior stocks—Algic (Algonquian-Wiyot-Yurok), Na-Dene, and Uto-Aztecan—have been genetically identified in the very process of discovering their exterior relationships, a simple and obvious task in the case of the Uto-Aztecan and Athapaskan languages but much more difficult in the case of Wiyot and Yurok (Sapir 1913, 1915, 1915a; Michelson 1914, 1915; Haas 1958).

An example from the Miwokan languages will make the nature of this validation clear (Broadbent and Callaghan 1960; Callaghan 1970).

	'heart'	*'swim'*	*'fly' (verb)*	*'eye'*
Southern Sierra Miwok	*wiɬki*	*ʔipih*	*hiɬe·t*	*hinti*
Central Sierra Miwok	*wiṣki*	*ʔipiṣ*	*ṣiɬe·t*	*ṣinti*
Plains Miwok	*wáski*	*ʔəpóh*	*siɬé·t*	——
Bodega Miwok	*wúṣki*	*ʔupúh*	——	*ṣút*

It will be noted that wherever Southern Sierra Miwok has an *h*, Central Sierra Miwok has an *ṣ*. This recurrent correspondence, along with the various obvious identities (*ɬ* to *ɬ*, for instance), validates the genetic relationship between the Southern and Central Sierra languages. Matching this *h* : *ṣ* correspondence, Plains Miwok has *s* in the words for 'fly' and 'heart' but *h* in the word for 'swim'. A parallel pattern with *ṣ* and *h* obtains in Bodega Miwok. These *h* variants in Plains and Bodega Miwok are due to the occurrence of the sound in final position. The correspondence, then, is *h* in Southern Sierra Miwok, *ṣ* in Central Sierra Miwok, *h* finally and otherwise *s* in Plains Miwok, and *h* finally and otherwise *ṣ* in Bodega Miwok. The genetic relationship of these four languages is certified by the marshaling of such evidence in as much detail as possible.

For the two great language stocks—Hokan and Penutian—that have been proposed as subsuming a majority of the California languages, there is as yet no demonstrable evidence of the type presented for Miwokan. There are many provocative resemblant forms among the languages, particularly among the Penutian ones, as well as certain general grammatical features that may be labeled Penutian or Hokan. In short, the terms Penutian stock and Hokan stock are names for unverified hypotheses. It is likely that both theories will eventually be validated, probably with minor, possibly with major alterations and rearrangements.

Various factors complicate the situation. One of the major difficulties has to do with linguistic diffusion, the borrowing of language material—speech sounds, words, grammatical constructions—by one language from another. The freedom and ease with which most of the California languages borrowed terms from Spanish is a case in point (Shipley 1962). Hundreds of Spanish words, linked with diffused elements of Spanish culture, invaded the aboriginal tongues in the nineteenth century, very probably representing an old continuing tradition of linguistic borrowing. Bilingualism and multilingualism were common among the California Indians, undoubtedly accompanied, over the centuries, by a steady process of acculturation and exchange of linguistic material in all directions. Many animal, bird, and plant names are widespread, crisscrossing all known boundaries between linguistic families. Some of these, like words for 'goose', 'crane', and 'frog' are scattered over the whole continent. Indeed, the word for 'bluejay'—Karok *ka·y* 'sound of a bluejay', Maidu *ɬáy*, Nisenan *čayit*, Wappo *čay*, Chukchansi Yokuts *čayčay*, Barbareño Chumash *cay*—is reflected even by Latin *gaius* and English *jay*. To say that these words are onomatopoetic is simply to name the phenomenon without explaining it. The fact that some linguistic diffusion is global, some continental, and some areal is directly involved with the problem of elucidating prehistory in California as well as elsewhere.

Quite apart from the correspondence of sounds as an attestation of genetic connections among languages, there is the equally important but much more complex matter of grammatical evidence for the historical relationship of one language to another. Such evidence may be inflectional or derivational (such as the noun cases in Latin, Greek, Sanskrit, German, and Russian, which reflect the common Indo-European origin of these languages) or syntactic, (that is, having to do with the structures of sentences). Inflexional and derivational elements have been explored to some extent for the California languages. The validating criteria involved in syntactic comparisons are, as yet, very poorly characterized. The difficulties come in separating the genetic similarities between two grammars from those that are due to chance or sporadic diffusion. For example, English is, in some ways, grammatically closer to Chinese (by chance) than it is to German (to which it is closely related genetically).

In order to make a realistic assessment of what can be known about interrelationships among the languages of California, the complications and difficulties described above must be kept clearly in view. All sorts of things are very possible: that Esselen, for example, is not Hokan but Penutian, or that it is neither Hokan nor Penutian but the single remnant of a language family that has long since vanished.

With all these caveats in mind, what deductions can be made from the distribution of the California languages, based on the current views regarding their provenience?

The oldest language group still more or less in situ in California would seem to be Hokan. Perhaps these languages were spoken over most of the area, very likely along with speech families of which no trace remains. They were then disrupted by the incursion of Penutian, which, spreading through the great central valley, forced Hokan to the periphery. A later Uto-Aztecan thrust in

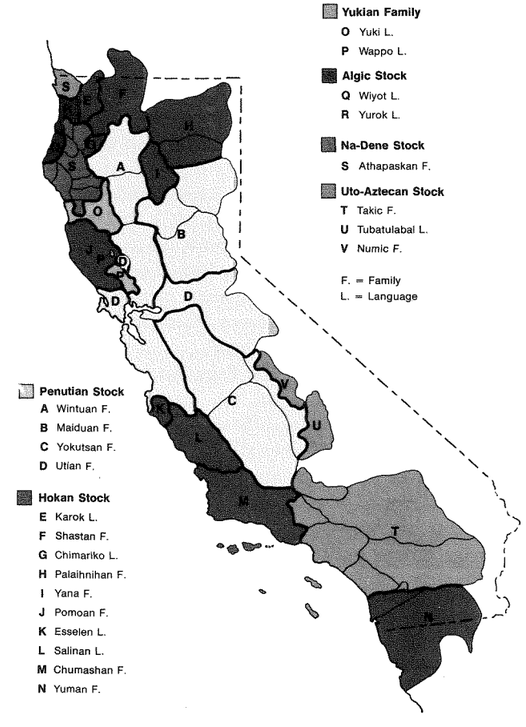


Fig. 1. Language stocks and families of the California culture area.

southern California may have pushed the Yuman languages still farther away from their Hokan congeners.

Somewhat earlier than this, the ancient forms of Yurok and Wiyot speech were brought into the northwest, though not necessarily at the same time. The common ancestral form from which Wiyot, Yurok, and Proto-Algonquian sprang was certainly never spoken in California, so that ancient Yurok and ancient Wiyot must have been separate languages while they were still somewhere to the east or north.

The latest arrivals were probably the Athapaskans, whose ancestors may have drifted down the rivers and coast from Oregon.

The Yukians present the greatest uncertainty. If, as Elmendorf (1963, 1964) suggests, they are related to Siouan, then the circumstance of their presence in California parallels that of Wiyot and Yurok. This is based on the assumption that Wappo is Yukian, for Wappo and Northern Yukian are very remotely related. Such speculation is very tenuous without further research. It is even conceivable that Yukian speech is older in California than Hokan.

In the delineation that follows, languages, language families, and language stocks are organized provisionally, based on the current consensus of researchers. Estimates of numbers of speakers in the various groups are based largely on Kroeber (1925; see also "Historical Demography," this vol.).

Penutian Stock

The Penutian stock was first identified and named by Dixon and Kroeber (1913, 1919). Further attempts to elucidate and define Penutian have been made by many scholars over the years (Sapir 1921-1923, 1921b, 1929; Shafer 1947, 1952; Hymes 1957a, 1964, 1964a; Pitkin and Shipley 1958; Shipley 1957, 1966; Broadbent and Pitkin 1964; Callaghan 1967). The name is a compound of the word for 'two' in Maiduan (Proto-Maiduan **pé·ne*) and Costanoan (Proto-Costanoan **uṭxi*).

The relationship among the Penutian languages is a very old one. Validation of the group as a "true" linguistic stock has been difficult to achieve, though evidence adduced by Hymes (1964) and Shipley (1966) would seem to be conservative and reliable enough to carry conviction. The situation has been complicated by the efforts of various scholars to add languages and language groups outside California to the inventory of Penutian tongues (Sapir 1929a; Freeland 1931; J.A. Mason 1940; F. Johnson 1940; Sapir and Swadesh 1953; Swadesh 1954, 1956; Hymes 1957a, 1964, 1964a; Newman 1964, Shipley 1966, 1969, 1970). It would be irresponsible to say that California Penutian has been established as a genetic group in the sense that Indo-European is so established. However, there seems to be little doubt that further research will eventually certify the relationship. Reviews of the history of Penutian research have been published by Callaghan (1958) and Shipley (1973).

The characteristics of the protolanguage from which the Penutian languages are descended may be adumbrated to some extent. The sound system was of moderate complexity with two series of voiceless stops (plain and aspirated), probably a labiovelar k^w, perhaps no more than the two spirants *s* and *h*, and very likely the sonorants *m, n, r, l, w* and *y*. Most of the languages are not so simple as this (though the Utian group is actually simpler), but the evidence points to a diffused origin for the glottalized consonants so commonly found, while the proliferation of spirants and affricates in Wintuan, Yokutsan, and Costanoan may be due to defunct systems of consonantal symbolism. There were five vowels: *i, u, e, o, a*. The typical stem-morpheme shape proposed long ago by Sapir (1921-1923) has been borne out by subsequent research. In its modern version, the formula may be stated as a disyllabic stem with a single initial and single medial consonant, with or without a final consonant: CVCV(C). As Sapir pointed out, the vowels in the two syllables are often the same.

Certain aspects of the grammar of Proto-Penutian are fairly clear. There was probably a rather complex system of postfixed case markers on nouns and pronouns. The pronoun system was particularly elaborate, with markers not only for case but also for singular, dual, and plural numbers. In addition to subject, object, and possessive cases, the nouns and pronouns were almost certainly marked for the locative and instrumental.

Verbs were marked with suffixes denoting various aspects, modes, and tenses but probably not for person. It is possible that there were instrumental prefixes, though the evidence for this is unreliable. Prefixing in general was minimal or lacking.

There were four families in the Penutian stock: Wintuan, Maiduan, Yokutsan, and Utian. All these names are derived from terms meaning 'person' or 'human being' except Utian, which is based on the Miwok-Costanoan word for 'two'.

Wintuan Family

The three languages in the Wintuan family are Wintu, Nomlaki, and Patwin. Wintu and Nomlaki are quite similar; Patwin is clearly more remote. Harvey Pitkin (personal communication 1962) has suggested that many of the resemblances between Patwin and Wintu may be the result of diffusion and that the genetic relationship is, perhaps, more distant than a superficial inspection of the data would indicate. Kroeber (1925:883) estimated the number of Wintuan speakers at 12,000 in preinvasion times, of which probably at least half were speakers of Patwin.

These Wintuan languages, particularly Wintu, are much more complex phonologically than Proto-Penutian. There were four series of stops: plain, aspirated, glottalized, and voiced; in addition, Wintu had several extra spirants as well as a two-way velar contrast between fronted and backed stops and spirants (*k* and *q* as well as *x* and *x̣*). This last feature may very well have been in Proto-Penutian though no other California Penutian language retains it.

Wintu was the northernmost language of the family, with nine known dialects (Pitkin 1963): McCloud River, Trinity County, Shasta County, Upper Sacramento, Bald Hill, Hayfork, Keswick, Stillwater, and French Gulch.

Closely related to Wintu is Nomlaki (*nom* 'west', *laki* 'speech'?), spoken just to the south in the upper end of the Sacramento Valley. Nomlaki is the least known of the Wintuan languages and probably had no more than 1,000 or so speakers, with at least two dialects and perhaps as many as six.

The area of Patwin speech extended southward to the delta of the Sacramento-San Joaquin river system. There were perhaps 6,000 speakers of Patwin, with many dialects, some of which are known: Hill, River, Cache Creek, Lake, Tebti, Dahcinci, and Suisun. The Patwin (*patwin* 'person') played a dominant cultural role in Central California. Many Patwin words were diffused into the neighboring languages.

Maiduan Family

The Maiduan languages exhibit three phonological innovations of particular interest when compared with the postulated system for Proto-Penutian: there is a glottalized stop series; there are two voiced imploded stops, *b* and *d;* and there is a sixth vowel, the high central unrounded *i̇*. Konkow and Nisenan have yet a seventh vowel, a mid-central unrounded *ə*. The origins of these two extra vowels are obscure. The high vowel is found in some Miwokan and Yokutsan languages as well as in Maiduan, specifically in those languages that are contiguous to or near the Uto-Aztecan languages to the east and south of the Sierra Nevada, all of which have such a vowel. Silverstein (1970) has shown that *i̇* may very well have developed from *u* under the influence of a neighboring *y*.

Maiduan stems tend to be monosyllabic. The Proto-Penutian stem type CVCV(C) has often been reduced by the loss of the medial consonant or of the second syllable.

There are three languages in the family: Maidu (Northeastern Maidu, Mountain Maidu), Konkow (Concow, Northwestern Maidu), and Nisenan (Southern Maidu). Although they share a large inventory of near-identical stem morphemes, they are quite different from one another grammatically and are not mutually intelligible. Phonological and lexical reconstructions have been made (Shipley 1961; Ultan 1964). According to Kroeber (1925:883) there were some 9,000 speakers in aboriginal times, Nisenan being probably the largest group.

Maidu was spoken entirely in the high mountains to the east and south of Mount Lassen. There is little reliable evidence for dialect differentiation though it seems reasonable to assume that there were different dialects originally in the four major areas of Maidu settlement: Susanville, Big Meadows, Indian Valley, and American Valley. Grammars, texts, and a dictionary of the language are available (Dixon 1911, 1912; Shipley 1963, 1964).

Southwest of the Maidu, along the Feather River and its tributaries and in the adjacent Sacramento Valley, were the Konkows, who spoke a large number of dialects: Otaki, Metsupda, Nemsu, and Eskewi near Chico; Pulga, Feather Falls, Challenge, and others near Oroville and in the Feather River Canyon; and doubtless other dialects in the region around the Marysville Buttes.

Nisenan was also spoken in various dialects. Those that can be identified are: Valley Nisenan, Oregon House, Auburn, Clipper Gap, Nevada City, Colfax, and Placerville. Although no Nisenan grammar has been written there is a partial description in manuscript of the Auburn (Uldall 1940) and Clipper Gap (R. Smith 1964) dialects. A dictionary and collection of texts are available for Auburn Nisenan (Uldall and Shipley 1966).

Yokutsan Family

The Yokutsan-speaking people, some 18,000 in number (Kroeber 1925:883), occupied the San Joaquin valley from the delta to Tehachapi, including the contiguous foothills of the Sierra and the Coast Range. There were 40 to 50 small tribes in this area, each with a distinctive dialect (Kroeber 1925:474), a state of affairs unlike any other in California. Kroeber (1963) classified these dialects into 12 groups belonging to two divisions; his arrangement was based on lexical material collected for 21 of the dialects.

These facts make it very difficult to say how many Yokutsan languages there were—indeed, the very notion of language becomes blurred in such a context. Linguists have called two forms of speech two languages if they are mutually unintelligible. This is an extremely unreliable practice if only for the reason that the term "mutually unintelligible" cannot be defined. Probably any Yokutsan dialect was intelligible to the speakers of immediately neighboring dialects with only some minor adjustments; on the other hand, speakers of two widely divergent dialects were almost certainly incapable of understanding each other. Perhaps there were two Yokutsan languages (corresponding to the two divisions) or 12 (corresponding to the 12 groups). It is not possible to decide nor is it important to attempt to do so, given the circumstances.

Yokutsan is much more complex phonologically than Proto-Penutian. No only is there a series of glottalized voiceless stops as in Maiduan and Wintuan, but there is also a set of glottalized continuants: *m̓, n̓, l̓, w̓, y̓,* and *l̓*. There are extra stops and spirants in the palatal area,

perhaps, as elsewhere, the result of old consonant symbolism.

Yokutsan has a very involved system of alternating verb and noun stem shapes, specifically with regard to vowel changes and vowel loss in certain grammatically definable situations. This has been described by Newman (1944, 1946) within the framework of his general description of the Yokutsan languages and has been partially restated by Kuroda (1967) and others (see references in Hockett 1973 and Pullum 1973).

There are three extensive treatments of Yokuts dialects. Yawdanchi and Yawelmani were described by Kroeber (1907). Several dialects, principally Yawelmani, were described by Newman (1944), who also did a later sketch of Yawelmani alone (1946). Of special interest is an annotated reconstitution of a grammatical sketch of the long-extinct Nopchinchi dialect, written in the early nineteenth century by Father Arroyo de la Cuesta (Beeler 1971).

Utian Family

The Utian languages fall into two clearly defined subgroups: Miwokan and Costanoan. Though there is considerable grammatical diversity among these languages, they share certain clear-cut phonological characteristics that set them off sharply from the other Penutian languages. All of them (except Lake Miwok) have but a single series of stops—a situation even simpler than that postulated for Proto-Penutian. Functional distinctions based on glottalization and aspiration are entirely absent. There is some proliferation of palatal stops and spirants as in Yokutsan. There is an underlying basic five-vowel system, though the eastern Miwok languages have a functional sixth high-mid vowel (Plains Miwok had a seventh, like Maiduan Nisenan), undoubtedly due to the innovation discussed in connection with Maiduan. Some of the Costanoan languages have a stem-morpheme structure that invariably matches Sapir's (1921-1923) formulation: CVCV(C) with the two vowels frequently identical.

There are 15 languages in Utian, seven Miwokan and eight Costanoan. Significant lexical and phonological reconstructions have been done for Miwokan (Broadbent and Callaghan 1960; Callaghan 1972), for Proto-Miwok and Mutsun (Callaghan 1962), and for Costanoan (Levy 1970a).

The Miwokan languages were spoken in a (probably) continuous belt across central California, from Marin County on the west to the southern Sierra Nevada on the southeast.

Lake Miwok territory, just to the southeast of Clear Lake, was geographically separated from the other Miwokan languages; Lake Miwok was also unique in the possession of a complex phonological system with four stop series—plain, aspirated, glottalized, and voiced—presumably borrowed either from Pomo or, more likely, from Patwin (Callaghan 1964, 1965).

Closely related to Lake Miwok, but with a regular, simple, Miwokan-type sound system, was Coast Miwok, probably with two dialects: Bodega and Marin (Callaghan 1970).

Across the Carquinez Strait the long-extinct Saclan was spoken. This language, about which very little is known, was only recently identified as Miwokan (Beeler 1955, 1959).

Farther to the east, in the valley area around Stockton, was Plains Miwok.

Still farther east, from north to south in the Sierra, were three closely related languages: Northern, Central, and Southern Sierra Miwok. The southernmost of these is the most fully described (Broadbent 1964), though some material is also available on the central language (Freeland 1951; Freeland and Broadbent 1960).

The Costanoan languages were spoken around most of San Francisco Bay and southward along the coast to Point Sur, south of Carmel. From what is known of them, they appear to have been much more like one another than were their Miwokan congeners, though a good deal of variability is found in some details of their grammars. Levy (1970a) identified and named the eight languages for which there is evidence: Karkin, Chochenyo (East Bay), Tamyen (Santa Clara), Ramaytush (San Francisco), Awaswas (Santa Cruz), Mutsun (San Juan Bautista and the Pajaro River drainage), Rumsen (Carmel and the lower Salinas River), and Chalon (Soledad, farther up the Salinas River). The classification of the Northern Costanoan languages was carried out by Beeler (1961).

Although the most important nineteenth-century word lists for Costanoan were assembled and published by Heizer (1952, 1955), none of the material collected by Harrington (1921-1938) has appeared in print. Harrington's data on Chochenyo, Mutsun, and Rumsen are extensive and phonetically accurate.

Relations outside California

Within two years of the full-scale display of the evidence for California Penutian (Dixon and Kroeber 1919), Sapir (1921b) proposed a much-expanded inventory of Penutian languages. In its later "classical" form (Sapir 1929), this expansion became the Penutian superstock, an amalgam containing many Oregon languages, Tsimshian on the British Columbia coast, and Mixe-Zoque and Huave in southern Mexico. Although Sapir's proposal was couched in conservative and tentative terms, his Penutian theory has dominated the thoughts and researches of interested scholars ever since, in spite of the fact that no conclusive or definitive evidence for most of the proposed linguistic relationships outside California has ever been brought forward. This is not to say that the Penutian hypothesis of Sapir is wrong; careful research will probably eventually bear it out in the main. The point is that it is a hypothesis.

Various other candidates have been proposed for membership in the Penutian stock over the years. The two that remain viable are Mayan (F. Johnson 1940; J.A. Mason 1940; Swadesh 1956) and Zuni (Swadesh 1956; Newman 1964).

In this connection Klamath-Modoc deserves special mention. Some of the speakers of Klamath-Modoc lived in what is now northern California. Strong lexical evidence has been adduced to show that Klamath-Modoc is related to Nez Perce and other Sahaptian languages of northern Oregon, Idaho, and southern Washington (Aoki 1963). It has also been shown with reasonable certainty, again on the basis of lexical evidence, that Klamath-Modoc is genetically related to the California Penutian languages (Shipley 1966). Thus, it seems safe to infer that the Sahaptian languages are also Penutian.

Hokan Stock

The Hokan stock was identified and named by Dixon and Kroeber (1913); however, the classical characterization of the stock was made by Sapir (1917). The word Hokan is based, as is Penutian, on the word for 'two', presumably from Atsugewi *hoqi.*

Cross-family studies within Hokan have been made for Northern Hokan (Bright 1954), Eastern Pomo and Yana (McLendon 1964), Palaihnihan and Shasta (Olmsted 1956-1959), Shasta and Karok (Silver 1964), and Washo and Karok (Jacobsen 1958). Haas (1964), though ostensibly concerned with Yana-Karok cognates, presents a large amount of data on the other Hokan languages as well as on other California languages outside the Hokan stock as it is presently defined.

A comparison of the Hokan situation with the Penutian one brings to light a dramatic contrast. The interrelationships of the Hokan languages lie much deeper in time, a fact paralleled by their geographical discontinuity. They are dispersed like a broken chain around the margins of the compact California Penutian heartland.

Langdon (1974:87) has outlined the consensus as to the probable nature of the Hokan protolanguage:

> Proto-Hokan probably had a rather simple sound system, with very little trace of the more marked categories exhibited by many of the attested languages. Contrasts involving plain *versus* aspirated and perhaps even glottalized consonants may well turn out to be accountable as independent developments; voiceless sonorants are already accounted for as innovations in Pomo and Yuman, and Washo. Vowels may not have been more than three with a probable length contrast—Proto Yuman has such a system. In the few available good cognate sets, the persisting elements appear to be essentially conservative. The great diversity of the daughter languages, it seems, must be accounted for by repeated processes of loss of vowels leading to subsequent loss and change of consonants (particularly in the laryngeal area), with resulting lexical items where little remains that is truly comparable. Typical Hokan morphemes must have been short (monosyllabic).

Many of the morphemes found in the attested Hokan languages would seem to be the result of what Silver (1975) has called "morphemization," that is, a historical process whereby old compounds blend into single morphemes with the passing of time. English has a few morphemes of this type: boatswain, knowledge, blackguard, forecastle. Only the archaic spelling reveals the fact that these words were not always single morphemes. Haas (1954, 1963) has marshaled evidence for a general shortening of various words in the modern Hokan languages by comparison with longer ancient forms that themselves may have been strings of two or more morphemes. Even more provocative is her postulation of possible lexical intersections between Hokan and Penutian, specifically with the terms for 'ear' and 'navel' (Haas 1964).

The California Hokan languages and language families are: Karok, Shastan, Chimariko, Palaihnihan, Yana, Pomoan, Esselen, Salinan, Chumashan, and Yuman. Sapir (1925) placed Karok, Shastan, Chimariko, Palaihnihan, Yana, and Pomoan in a separate Northern Hokan subgroup. Subsequent investigations have not validated this subgrouping on the basis of the linguistic evidence.

Karok Language

The Karok language *(káruk* 'a considerable way upriver') was described by Bright (1957). The speakers of Karok, estimated at between 1,500 and 2,000 in aboriginal times, lived along a stretch of the Klamath River in northwestern California. The language is not closely or obviously related to any other; its presumed Hokan affiliations are distant. There was no known dialect differentiation.

Shastan Family

Shastan, a family of four languages, originally had some 2,500 speakers. The languages were: Shasta, New River Shasta, Okwanuchu, and Konomihu. Shasta proper was spoken in at least four dialects: Oregon Shasta, extending up to the Rogue River in southern Oregon, Scott Valley Shasta, Shasta Valley Shasta, and Klamath River Shasta. The dialect situation with the other Shastan languages is not known; they occupied small territories to the south and are all extinct. Shasta has been described by Silver (1966).

Chimariko Language

Chimariko was spoken by only a few hundred people along a 20-mile stretch of the Trinity River, just south of the New River Shasta. Although the language has long been extinct, there is some published material in Dixon (1910a) as well as various manuscript resources including

an extensive collection of linguistic data by Harrington (1921-1928).

Palaihnihan Family

Southeast of the Shasta in northeastern California were the speakers of Palaihnihan (from a Klamath word for the Achumawi). There were two languages in the family: Achumawi, spoken in several closely related dialects by the nine bands along the Pit River, and Atsugewi or Hat Creek, with two dialects, Atsuge (also called Hat Creek) and Apwaruge (Dixie Valley). These two languages were very distantly related, though they were apparently closer to each other than to any other Hokan language (Olmsted 1964). There were probably about 3,000 speakers in aboriginal times, the majority being Achumawi. There are descriptive materials available on both Achumawi (Angulo 1926a; Angulo and Freeland 1931; Olmsted 1966; Uldall 1935) and Atsugewi (Garth 1944; Kroeber 1958a; Olmsted 1958, 1961; Talmy 1972, 1975).

Yana Family

East of the Wintu and west of the Atsugewi and the Maidu were the Yana (*yaana* 'person') numbering altogether some 1,500 speakers. There were two languages, Yana with three dialects (Northern, Central, and Southern) and a separate language, Yahi (*yaaxi* 'person') (Sapir and Swadesh 1960). Yana has long been extinct; the famous Ishi was the last speaker of Yahi (T. Kroeber 1961). Although no full-scale grammar of Yana has been written, there is considerable descriptive material (Sapir 1909, 1910, 1918, 1922, 1923, 1929a; Sapir and Swadesh 1960; Nevin 1975).

Pomoan Family

There were seven languages in the Pomoan family (*pomo* 'person, people'), with a total of some 8,000 aboriginal speakers. The Pomoans lived between the Sacramento Valley and the ocean, largely in what is now Sonoma County. Since there were no aboriginal names for the languages, they have been given directional designations: Northeastern, Eastern, Southeastern, Northern, Central, Southern, and Southwestern. Southwestern Pomo has come to be called Kashaya, a name that is probably derived from a stem meaning 'agile, nimble' (Oswalt 1961, 1964).

The Pomoan languages are phonologically among the most complex of the Hokan stock. A great deal of comparative work has been done on the relationships among them. Among early classifications are those of Barrett (1908) and Kroeber (1925). Halpern (1964) improved the grouping on the basis of a survey made in 1939-1940; Oswalt (1964a) made a careful count of shared cognates and proposed some revisions (see "Pomo: Introduction," fig. 1, this vol.). By far the most imposing document on Proto-Pomo is McLendon's (1973) monograph in which she carried out an extensive phonological and lexical reconstruction. Note must be taken of Oswalt's (1964b) binary comparison of Kashaya and Central Pomo as a forerunner of McLendon's work.

There are descriptive materials, some of them extensive, on four of the languages: Eastern (Angulo 1927; Kroeber 1911; McLendon 1975, 1969), Southeastern (Moshinsky 1975), Kashaya (Oswalt 1958, 1961, 1964; Worth 1960), and Northern (Vihman 1975).

Esselen Language

Esselen is very little known. The language was spoken by a few hundred people on the upper reaches of the Carmel River and on the coast around Big Sur. It was classified as Hokan on the basis of a few lexical resemblances. Only word lists are available (Heizer 1952; Kroeber 1904a).

Salinan Language

The Salinan language was spoken by some 2,000 persons in at least two dialects: Migueleño and Antoniaño, named for the two Spanish missions that were established in their territory. There may have been a third dialect along the coast, which Kroeber (1925:546) refers to as Playano; of this form of Salinan speech there are no records whatever. The language is extinct. Aside from some word lists (Heizer 1952), there are two descriptive documents (Kroeber 1904a; J.A. Mason 1918). The Salinans occupied the middle and upper Salinas Valley and the Coast Ranges to the west almost as far south as the town of San Luis Obispo.

Chumashan Family

According to Beeler (1975), the Chumashan family consisted of at least six languages, which may be subgrouped into three dialect areas: a central group consisting of the languages once used around the missions at Ventura (including Emigdiano), Santa Barbara (including Castac, formerly thought to be Uto-Aztecan but shown by Beeler (1972; Beeler and Klar 1974) to have been Barbareño as spoken by certain Indians displaced in mission times), Santa Ynez, and La Purísima; the speech on the islands of San Miguel, Santa Rosa, and Santa Cruz; and the language of San Luis Obispo. These languages are all extinct. There were possibly 10,000 speakers of Chumashan in aboriginal times. In addition to nineteenth-century word lists assembled by Heizer (1952, 1955), further descriptive information is available (Beeler 1975; Applegate 1975; Harrington 1974).

Yuman Family

The Yuman family of languages is the most peripheral geographically. Most of the Yuman languages are or were spoken outside California, in Arizona and Baja California. Although the relationship among these languages is clear and has been extensively studied by many workers, an authoritative classification has not yet been determined. Two classifications are to be noted: that of Kroeber (1943) and the much later one of Joel (1964). The latter study is based on a much larger and more accurate body of data than the former. The only Yuman language in the California culture was Diegueño (Langdon 1970), of which there are at least three dialects, all still spoken, Ipai ('Iipay), Kumeyaay, and Tipai (Tiipay).

Relations outside California

Early versions of the Hokan hypothesis (Kroeber 1915; Sapir 1917) proposed the inclusion of groups partly or entirely outside the California area: Washo, in the Great Basin; Yuman; Seri, in Sonora; and Chontal (Tequistlatec), in southern Oaxaca. Then the languages of northeastern Mexico and southern Texas that Swanton (1915) had classed together as Coahuiltecan were added to the Hokan roster (Sapir 1920). Sapir's (1921b, 1929:140-141) even more inclusive Hokan-Siouan superstock has been abandoned, and other, even more incredible, proposals, including the postulation of Hokan congeners in South America, have largely been considered unsubstantiated. Even Hokan-Coahuiltecan remains far from being established as a genetic reality.

Yukian Family

The small, isolated Yukian family of languages had four members: Yuki, Coast Yuki, and Huchnom in Mendocino County and Wappo, a considerable distance to the south in Lake and Napa counties. The three northern languages were very similar; indeed, they may have been little more than dialects of a single language. In 1975 there was one known surviving speaker of the northern group, which may have had about 2,000 speakers aboriginally. Wappo (from Spanish *guapo* 'handsome') is very different in grammar and lexicon from the northern languages. Either the genetic connection is a remote one or it may be that Wappo is not a Yukian language at all but owes what Yuki-like features it has to the effects of ancient contact and diffusion. There were some 1,000 Wappos originally, with four dialects, one of which was spoken by a small group on the southern end of Clear Lake, geographically separated from the other Wappos. Descriptive material is available on Yuki (Kroeber 1911), Wappo (Radin 1929; Sawyer 1965), and on Yukian generally (Barrett 1908).

Various proposals have been made suggesting links between Yukian and other language groups: Penutian (Radin 1919; Shipley 1957), Hokan (Sapir 1921b, 1929; Swadesh 1954; Gursky 1965), Siouan (Sapir 1921b, 1929; Elmendorf 1963), and Yuchi (Sapir 1921b, 1929; Elmendorf 1964). Of all these, Elmendorf's evidence for a distant Yukian-Siouan-Yuchi affiliation seems the most credible.

Peripheral Stocks

All the other languages that were spoken in aboriginal California have been clearly identified as belonging to larger linguistic stocks with most of their member languages in other parts of North America. These exterior stocks are Algic, Na-Dene, and Uto-Aztecan.

Algic

Algic is represented by two languages, Wiyot and Yurok, both of which were spoken in Northwestern California. These two languages are very distantly (though certainly) related to each other; they are about equally distantly related to the Algonquian languages in the eastern and central parts of the continent (Teeter 1964a; Haas 1966; Hamp 1970). Thus Algonquian, Yurok, and Wiyot are the three equally remote members of a very old family of languages that has been called Algonquian-Wiyot-Yurok, Algon-Ritwan (Haas 1967), or simply Algic (I. Goddard 1963; Teeter 1965:225).

Wiyot was spoken by no more than 1,000 people who lived around Humboldt Bay and the mouth of the Eel River and in the immediate hinterland. The language was described by Kroeber (1911:384-431), by Reichard (1925), and by Teeter (1964a). The language is now extinct.

Yurok was spoken on the coast to the north of the Wiyot by a much larger group, perhaps 2,500 persons, around the mouth of the Klamath River, with territory extending upriver as far as the confluence of the Klamath and the Trinity, some 30 miles. The name Yurok is from the Karok word *yúruk* 'a considerable distance down the river'. There is a brief grammatical description by Kroeber (1911:414-426) and a much fuller one by Robins (1958).

Na-Dene

The Na-Dene languages of California all belong to the Athapaskan family, which contains most of the languages in the Na-Dene stock. The four California Athapaskan languages were Tolowa, Hupa-Chilula-Whilkut, Mattole, and Wailaki-Nongatl-Lassik-Sinkyone-Cahto (Hoijer 1960).

Tolowa (from Yurok *tolowel*) was spoken by perhaps 1,000 people in the extreme northwestern corner of California, with some territory in Oregon. No descriptive material is available on Tolowa except for a study of the phonology (J.O. Bright 1964).

The other Athapaskan languages, separated from Tolowa by Yurok territory, were spoken over a continuous area from Hupa in the north to Cahto in the south, the latter being just to the north of Yukian. There were three languages involved; two of these had varying dialects associated with distinctive political groups.

There may have been some 2,000 speakers of Hupa-Chilula-Whilkut. The Hupa dialect was described by Goddard (1905) and by Golla (1964, 1970; "Sketch of Hupa, an Athapaskan Language," vol. 17). The Chilula and the Whilkut have long been extinct.

Mattole, spoken by a few hundred people on the coast south of the Wiyot, is also extinct. There is a description by Li (1930). The Bear River dialect differed slightly.

There are no remaining speakers of any of the dialects of the third language. There were an estimated 1,000 speakers of the Nongatl-Lassik-Sinkyone group, perhaps 1,000 speakers of Wailaki, and no more than 500 speakers of Cahto. There are a grammar of Cahto (Goddard 1912) and a collection of Wailaki texts (Goddard 1921-1923).

Uto-Aztecan

The third exterior stock, Uto-Aztecan, is represented in the California culture area by a number of languages, mainly in the south. These are grouped into three branches: Takic, Tubatulabal, and Numic. The first two branches are entirely within California, while Numic is an extensive family spreading over most of the Great Basin and even including Comanche on the southern Plains (Lamb 1964; Langacker 1970; Seiler 1965, 1967).

There were six Takic languages, two along the coast—Gabrielino-Fernandeño in Los Angeles County and Luiseño-Juaneño to the south—and four in the interior desert—Serrano, Kitanemuk, Cahuilla, and Cupeño. In addition, there was a language spoken on San Nicolas Island (Kroeber 1907b:153) and the Tataviam language of the upper Santa Clara valley, which are so poorly known as to be impossible to classify.

Virtually nothing is known of the Gabrielino-Fernandeño language. There may have been as many as 5,000 speakers, with several dialects, in the San Fernando Valley and the great Los Angeles basin to the south as well as on Catalina Island. The names come from the missions of San Gabriel and San Fernando.

Luiseño-Juaneño, also with some 5,000 speakers in precontact times, has been studied by several workers. Descriptive materials (Kroeber and Grace 1960; Malécot 1963-1964), and a dictionary (Bright 1968) are available. A teaching grammar of Luiseño by Hyde (1971) has also been written. The names are from the missions of San Luis Rey and San Juan Capistrano.

The largest of the inland language groups was Serran (K.C. Hill 1967; Bright 1975) with more than 3,000 speakers including the Serrano and Kitanemuk languages, plus the Vanyume, who undoubtedly spoke at least a distinctive dialect. The language name Serrano has often been applied to the entire Serran group.

Between the Serrano and the Ipai-Tipai were the Cahuilla with more than 2,000 speakers. There were three dialects: Desert, Mountain, and Pass (Seiler 1970). Some information on the phonology (Seiler 1957; Bright 1965) is available, as well as a small amount of grammatical material (Seiler 1958).

The Cupeño lived inland from the Luiseño and north of the Kumeyaay. They were among the smallest distinct groups in California with about 500 people living in two villages, *kúpa,* from which they get their name, and *wilákalpa.* There is a grammar of the language (Hill and Nolasquez 1973) and a historical study (Bright and Hill 1967).

Tubatulabal is classified as an isolated language within Uto-Aztecan. There were possibly some 1,000 speakers, living in the upper Kern River valley at the southern end of the Sierra Nevada. A description of the language (C.F. Voegelin 1935, 1935a) and a short dictionary (C.F. Voegelin 1958) have been published. The distinctiveness of Tubatulabal speech points to its being an older idiom in California than the other Uto-Aztecan languages. The term Tubatulabal is from one of the Numic languages, meaning 'pine-nut eaters'.

The Numic languages were spoken over a vast fan-shaped area of the intermountain west. The name for this family is adapted from *nimi, niimmi, niwi,* the words for 'person' in the various languages (Lamb 1958). Only one of these languages was spoken within the California culture area: Mono, of which there were two main groups, speaking several dialects. The Eastern Mono along the eastern side of the Sierra Nevada, notably in the Owens Valley, were culturally in the Great Basin, while the Western Mono or Monache on the western side of the Sierra crest were in the California culture area. All together, there may have been as many as 4,000 speakers, with the larger number in the eastern group. There is a description of Monache by Lamb (1958a).

Summary

The following classification is somewhat informally arranged in that different orderings and subgroupings are used in explicating different language families. The real situation, even as postulated, was more complex than any systematic presentation can characterize without distortion and simplism. The details as given here are based on the most reliable sources available; nevertheless, there are unavoidable shortcomings. The dialect listings are highly variable in reliability. In many cases the omission of dialect information is simply the result of ignorance; in other cases, such as Chimariko and Esselen, there probably really was no dialect differentiation. The designation of languages is probably more reliable, though there are problems. Most important, the various classifications themselves are subject to revision or rejection as future research may dictate. Only those portions of a family or stock that were spoken in the California culture area (fig. 1) are included in this outline.

1. Penutian Stock.
   - Wintuan family.
     - Wintu language. Dialects: McCloud River, Trinity County, Shasta County, Upper Sacramento, Bald Hill, Hayfork, Keswick, Stillwater, French Gulch.
     - Nomlaki language. Dialects: Hill, Valley.
     - Patwin language. Dialects: Hill, River, Cache Creek, Lake, Tebti, Dahcinci, Napa, Suisun.
   - Maiduan family.
     - Maidu language. Dialects: Susanville, Big Meadows, Indian Valley, American Valley.
     - Konkow language. Dialects: Otaki, Metsupda, Nemsu, Eskewi, Pulga, Cherokee, Feather Falls, Challenge, Bidwell Bar.
     - Nisenan language. Dialects: Valley, Oregon House, Auburn, Clipper Gap, Nevada City, Colfax, Placerville.
   - Yokutsan family (Kroeber 1963:237).
     - Foothill division.
       - Buena Vista group: Tulamni, Hometwoli, Chuxoxi.
       - Poso Creek group: Palewyami, Kumachisi.
       - Tule-Kaweah group: Yawdanchi, Wikchamni, Gawia, Bokninwad, Yokod.
       - Kings River group: Chukaymina, Ayticha, Choynimni, Entimbich(?) Toyhicha.
       - Intermediate between Northern Valley Group D and Kings River Foothill group; living in hills: Gashowu.
     - Valley division.
       - Northern Valley groups.
         - Group A, far north on lowest San Joaquin: Chulamni, Lakisamni.
         - Group B, on San Joaquin below Fresno River: Chawchila, Hewchi, Nopchinchi.
         - Group C, on upstream plains along San Joaquin: Pitkachi, Wakichi, Hoyima.
         - Group D, actually living in San Joaquin foothills: Chukchansi, Kechayi, Dumna, Dalinchi, Toltichi (?).
       - Southern Valley groups.
         - Group A, on Kings River and Tulare Lake: Wechihit, Nutúnutu, Chunut, Wowol, Apyachi, Tachi.
         - Group B, on lower Kaweah to Kern rivers: Wo'lasi, Choynok, Yawelmani, Wimilchi, Telamni, Koyeti.
   - Utian family.
     - Miwokan subfamily.
       - Western division.
         - Lake Miwok language.
         - Coast Miwok language. Dialects: Bodega, Marin.
       - Eastern division.
         - Saclan language.
         - Plains Miwok language.
         - Sierra Miwok group.
           - Northern Sierra Miwok language.
           - Central Sierra Miwok language. Dialects: West Central, East Central.
           - Southern Sierra Miwok language. Dialects: Merced-Yosemite, Mariposa-Chowchilla.
     - Costanoan subfamily.
       - Northern division.
         - Karkin language (a separate division according to Beeler 1961).
         - Chochenyo language.
         - Tamyen language.
         - Ramaytush language.
         - Awaswas language.
         - Chalon language.
       - Southern division.
         - Mutsun language.
         - Rumsen language.
2. Hokan Stock.
   - Karok language.
   - Shastan family.
     - Shasta language. Dialects: Oregon, Scott Valley, Shasta Valley, Klamath River.
     - New River Shasta language.
     - Okwanuchu language.
     - Konomihu language.
   - Chimariko language.
   - Palaihnihan family.
     - Achumawi language. Dialects: Hammawi, Qosalektawi, Hewisedawi, Astariwawi, Atwamsini, Ajumawi, Ilmawi, Itsatawi, Madesiwi.
     - Atsugewi language. Dialects: Atsuge, Apwaruge.
   - Yana family.
     - Yana language. Dialects: Northern, Central, Southern.
     - Yahi language.
   - Pomoan family.
     - Northeastern Pomo language.
     - Eastern Pomo language.
     - Southeastern Pomo language.
     - Western branch.
       - Northern Pomo language.
       - Southern group.
         - Central Pomo language.

Southern Pomo language.
Kashaya language.
Esselen language.
Salinan language. Dialects: Migueleño, Antoniaño.
Chumashan family.
Central group.
Ventureño-Emigdiano language.
Barbareño language.
Ynezeño language.
Purisimeño language.
Island Chumash language.
Obispeño language.
Yuman family.
Diegueño language. Dialects: Ipai (Northern), Kumeyaay (Southern), Tipai (Mexican).
3. Yukian family.
Yuki language. Dialects: Yuki proper, Coast Yuki, Huchnom.
Wappo language. Dialects: Clear Lake, Western, Northern, Central, Southern.
4. Algic Stock.
Wiyot language.
Yurok language.
5. Na-Dene Stock.
Athapaskan family.
Tolowa language.
Hupa language. Dialects: Hupa, Chilula, Whilkut.
Mattole language. Dialects: Mattole, Bear River.
Wailaki language. Dialects: Nongatl, Lassik, Sinkyone, Wailaki, Cahto.
6. Uto-Aztecan Stock.
Takic family.
Cupan group.
Gabrielino-Fernandeño language. Dialects: Gabrielino, Fernandeño, and others.
Luiseño-Juaneño language. Dialects: Luiseño, Juaneño.
Cahuilla language. Dialects: Desert, Mountain, Pass.
Cupeño language.
Serran group.
Serrano language. Dialects: Serrano, Vanyume.
Kitanemuk language.
Tubatulabal language.
Numic family.
Western group.
Mono (Monache).

Historical Demography

SHERBURNE F. COOK

Aboriginal Population

The first serious attempt to reach a reliable estimate of the population of California before Hispanic contact was that of Merriam (1905). His point of departure was the number of Indians baptized in the missions, a number which he badly miscalculated. His final estimate for the state was 260,000. Twenty years later Kroeber (1925: 883) drastically reduced this number, putting the total at 133,000. Subsequently Cook (1943) reviewed Kroeber's analysis and made a moderate revision to 133,550, after having excluded several peripheral tribes.

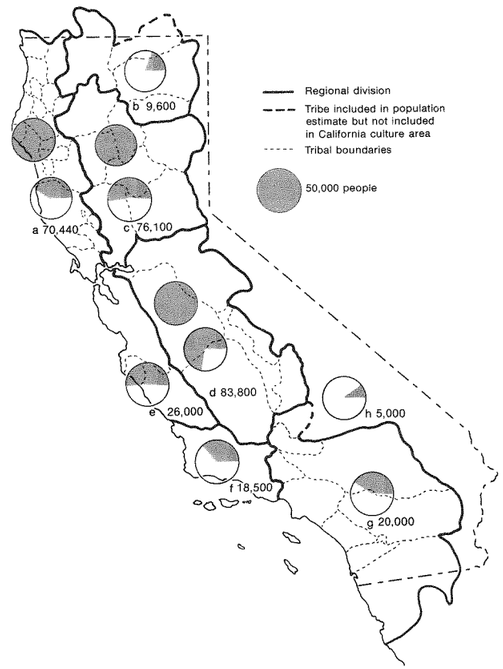
Later Cook reassessed the entire situation and studied a few important regions in detail by the use of one or more of several sources. The first of these is the vast array of village and other sites, several thousand in all, that, in certain areas and under restricted circumstances, can be used as an index to intensity of habitation. Second is the body of information obtained by ethnographers from living informants. Third are the written reports and letters of pioneer explorers, soldiers, and settlers, together with those of civil officials and clerical organizations. Fourth, for California in part, is the mass of documents relating to the missions. Here are included correspondence, annual reports, censuses, baptism and burial books. Fifth is the ecological approach, developed by Baumhoff (1963) for California, which utilizes subsistence levels and the carrying capacity of land surfaces, stream courses, and sea coasts.

Since all these methods are not equally applicable to every portion of the state, and since, indeed, the demographic history varies widely from one region to another, it has been found convenient to establish a series of subdivisions and to estimate the aboriginal population of each separately (fig. 1).

Population Decline, 1770-1900

Like all other native people in the Western Hemisphere, the Indians of California underwent a very severe decline in numbers following the entrance of White civilization. From the beginning to the end of the process, the native population experienced a fall from 310,000 to approximately 20,000, a decline of over 90 percent of the original number. This collapse was due to the operation of factors inherent in the physical and social conflict between the White and the Red races.

The destruction of the Indians in California occurred in a series of steps, separated geographically as well as temporally. The first of these stages accompanied the settlement of the coastal strip from San Diego to San Francisco, and was associated distinctly with the development of the Catholic missions. This phase may be considered as beginning with the expedition of Gaspar de Portolá and Junipero Serra in 1769 and as lasting until secularization in or near 1834. During this period the indigenous population was being drawn off into the



a, Cook 1956; d, Cook 1955; b,c,e,f,g, Cook 1974a; h, author's estimate.
Fig. 1. Estimated aboriginal population by regional subdivision; total is 310,000 ± 30,000.