BIOLOGICAL AND ETHNOLOGICAL OBSERVATIONS ON THE COFÁN, SECOYA, AND AWISHIRI INDIANS OF EASTERN TROPICAL ECUADOR

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The Cofán, Secoya, and Awishiri represent three of the seven surviving linguistic and cultural entities indigenous to the lowland rainforests of eastern Ecuador (the "Oriente"). The other still identifiable groups are the Siona, Jívaro, "lowland Quechua," and the "Tetete." The latter, "rediscovered" on a minor tributary of middle Río Aguarico in 1965, may be traced to the Siona who are thought to be linguistically related to the Secoya. The Siona, Cofán, and Secoya are collectively termed the "cushmas," in reference to the characteristic male garment. They and the Awishiri are semi-nomadic horticulturalists characterized by the slash-burn agricultural technique, and among whom hunting remains a major activity. These tribes and those of the Peruvian Montaña and the Bolivian East Andes are called the "Chuncho" (1, p. 507).

An intensive search of the anthropological literature reveals that the Cofán, Secoya and Awishiri are poorly documented. Most of the non-linguistic data, a majority of which was published more than fifty years ago, are inaccurate in content or erroneously ascribed to the three tribes.

The Cofán, Secoya, and Awishiri have long been in contact with whites, the former two tribes usually peacefully. The three have, until recently, successfully resisted acculturation. This has been due, in part, to geographic isolation and, in part, to tribal organization. However, the physical and cultural integrity of the Cofán and Secoya are now imperiled because of the recent establishment of petroleum and mining camps within the tribal territories and the subsequent influx of workers and colonists from the Andean highlands and from the littoral. The Awishiri, long hostile to whites and to the adjacent Quechua-speaking peoples, have experienced increasingly frequent and often detrimental contact with missionaries and the military. Recently granted exploratory concessions to oil and mining interests south of the Río Napo may result in physical as well as cultural extinction unless the tribe accepts pacification, an unlikely occurrence in view of the continuing persecution by whites. It is imperative, therefore, that field observations catalogued in this decade be incorporated in the tribal histories.

HISTORICAL RESUME

Steward (1, p. 508) and Steward and Métraux (2, p. 613), emphasizing that the Cofán are not only little known but have vanished as a tribe, reported them to have lived on upper Río Aguarico and in adjacent Colombia (Figure 1). Mason (3, p. 186) noted that a few hundred Cofán still survive, although the indigenous language is extinct. Our field investigations refute the aforementioned statements on the linguistic and cultural status of the Ecuadorian Cofan.

The Secoya, according to Steward (4, p. 739), were designated the Pioje or Pioché (a division of the Encabellado) prior to 1900. In 1635 they lived on the northern side of Río Aguarico upstream to its tributaries, a region now partly occupied by the Cofán and Siona. Simpson (5) located them on middle and lower Río Aguarico and along lower Río Napo. Tessman (6) identified 200 Secoya in approximately the same area, and noted that they were on the verge of losing their native culture, an observation herein rejected as erroneous. Burbano Martinez, Antonio Rivadeneira, and Montalvo Montenegro (7) estimated that the tribe numbered 100 persons. In 1968 a petroleum camp was constructed on Río Cuyabeno opposite the Secoya village and was followed by a military outpost in the immediate vicinity.

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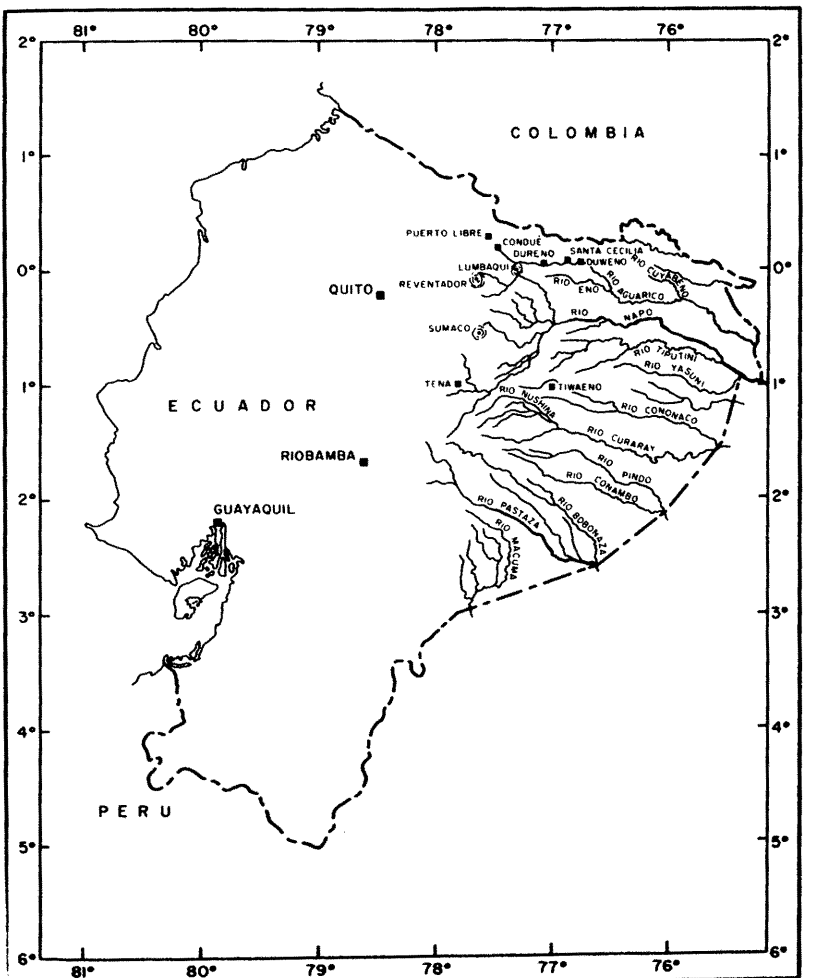

FIGURE 1. Map of Ecuador with the geographic localities mentioned in the text.

Steward and Métraux (2, p. 635) wrote that the Awishiri, in 1665, while hostile to whites and to the neighboring tribes, were numerous, and extended along the right (south) bank of Río Napo southward to the Río Curaray. In 1925, according to Steward (4, p. 635), the main group, then reduced to 30 to 50 still savage individuals, moved to Río Tiputini-Shiripuno region. Grubb (8) reported on the "Auca," a Quechua word meaning savage, which formerly referred to all non-salt-eating inhabitants of the eastern Amazonian rainforests, and which, in Ecuador, is now usually restricted to the Awishiri. He estimated the "Auca" to number 2,000, exclusive of the Yasuní, Ñushinu and the Supinu groups (who may have been Záparoan speakers and, thus, Awishiri). The names applied to the latter groups by Grubb are those of lesser tributaries of Río Napo. Recent data, obtained from military and missionary sources, indicate that the Awishiri, approximately 100 of whom are at Tiwaeno (Figure 1), number between 250 and 500. Save for a limited withdrawal the Awishiri control today the same territory as in 1665.

The field observations hereinafter discussed were conducted intermittently, from 1960 through 1963, by Swanson at Dureno and at Río Cuyabeno and, from 1966 through 1968, by Fugler at Dureno and among other Río Aguarico Cofán. Certain data were obtained by Fugler from bilingual Cofán and Secoya attending the Escuela Bilingüe, Instituto Lingüistico de Verano at Limón Cocha. Additional observations were obtained from M. Borman and O. Johnson, resident linguists at Dureno and Río Cuyabeno respectively. Information on the Awishiri, much of which refers to the recently missionized Awishiri at Tiwaeno, was volunteered by R. Saint.

The observations are the results of studies conducted independently by Swanson and Fugler. Swanson's data (9) are extracted and translated by Fugler from an unpublished thesis submitted to the Facultad de Medicina de la Universidad Central de Quito in 1965 to fulfill, in part, requirements to practice medicine in the Republic of Ecuador. This study is preliminary to the analysis of the stress factors of biological origin affecting the tribes in the processes of acculturation.

CURRENT COFÁN AND SECOYA DEMOGRAPHY

Borman (personal communication) stated that, in February, 1967, the Ecuadorian Cofán were located at Puerto Libre (a few families), Condué (a few families), Duweno (approximately 40 individuals), Dureno (approximately 80 individuals), and lower Río Bermejo (a few families) (Figure 1). One Cofán family resided on Río Eno with several Siona families. Borman remarked that approximately 200 Cofán, or 40 families, averaging five individuals per family, are permanently settled in Ecuador and approximately 250 individuals live in Colombia.

At the beginning of the present century, the Río Aguarico Cofán were concentrated in a large village near present-day Santa Cecilia. Slave-raiding expeditions from lower Río Napo caused dispersal, and some families settled in the Puerto Libre region and others at Dureno, Duweno and Río Bermejo.

In Ecuador, all tribal Secoya, numbering approximately 100 persons, are settled on Río Cuyabeno (Figure 1).

The Dureno population, in the early 1960's, varied from 80 to 100 individuals. In June 1968, the village consisted of 13 houses and 71 individuals. An additional 17 persons resided outside the village (Table 1, Figure 2). Duweno, in August 1968, contained seven houses and approximately 30 individuals, exclusive of several families (not censused) living on a near-by island and on the opposite shore (Table 2, Figure 3). The numerical size and physical compactness of the Cofán villages are characteristic of some aboriginal communities of the Montaña cited by Steward (1, p. 527). Both villages, having remained in the same area for more than 50 years, are atypical of the semi-nomadic horticulturalists. The spatial arrangements of the dwellings (Figures 2 and 3) do not seem to be correlated with kinship grouping. In general, each Cofán dwelling is occupied by the conjugal family (Tables 1, 2; Figures 2, 3); dwellings II, IX and X and "Across River" are exceptions. Neither the geneologies nor the sanguinal relationships of these multi-generation households were ascertained.

Swanson (9) obtained data on the approximate age composition of Dureno in

TABLE 1. *The inhabitants of the Cofán Village of Dureno, 1968.*

House number	Name	Age (approximate)
I	Casimiro Mendova	28
	Victoria Quenama	26
	Raquel	12
	Sofía	10
	Rogelio	7
	Celinda	1.5
II	Polonario Mendova	50+
	Forena Lucitante	50+
	Valerio	18
	Eternina Quenama	16
	Marina Ayinda	25
IV	Elías Lucitante	25
	Margarita Quenama	24
	Bolivia	2
V	Enrique Criollo	28
	Elsira Quintero	34
	Arturo	12
	Dejl	10
	Manuel	9
	Gloria	7
	Alegría	5
	Blanca	3
	Yolanda	11 months
VI	Aurelio Quenama	28
	Rosalina Mendova	25
	Ijirio	7
	Alicia	4
	Neil	1
VII	Anastasio Criollo	40
	Dashira Quenama	33
	Maruja	18
	Rufino	16
	Randi	11
	Verna	9
	Foresta	6
	Eteña	1.5
	Lorenza	20
	Rosira	18
VIII	Eusebio Quenama	55
	Josefipa Ayinda	18
	Lucía	8
IX	Elberta Quata	60
	Alejandro Criollo	18
	Tobías Quenama	40
	Elvira Quenama	28
	Severina	12
	Joaquina	8
	Risando	3
X	Anaseto Quenama	40+
	Lucrecia Quata	40+
	Eto	18
	Daviana	16
	Gloriano	11
	Avarindo	20
	Marineta Mendova	18
	Rosa	5
	Anosía	9 months
XI	Fernando Criollo	28
	Carolina Quenama	25
	Herijindo	9
	Jorge	6
	Pedro	2
XII	Sevora Lucitante	60
	Magnicio Mendova	22
	Gavina Quenama	20
	Roi	6
	Marcelino	2
XIII	Basilio Mashicori	30
	Carmen Quenama	28
	Saura	12
	Reveca	9
"On Island"	Santiago Criollo	40
	Elena Quenama	45
	Avera	7
"On Island"	Rubén Quenama	40
	Elvira Palhuaju	28
	Julia	9
"Across River"	Gabriel Mendova	40+
	Andrea Quenama	35+
	Nedia	12
	Romería	8
	Luciano Quenama	28
	Teoría Mendova	25
	Roberto	6
	Nirzo	3
	Silvio Quintero	18
	Laura Mendova	17
	Juana	8 months

the early 1960's; Fugler ascertained the age structure approximately five years later (Table 3). Although the data are insufficient for definitive analysis certain salient observations are evident. At the time of the censuses approximately 69.5% and 65.5% of the village populations were twenty years of age or younger. Inasmuch as exogamous marriage is desirable, if not required, the data may indicate the emigration of those of marriageable age. Above the 16-20 age group an intermittent but gradual decline is indicated, the greatest being above the 36-50 age group. In part the decline may be attributable to the high mortality rate in women. Swanson (9) concluded that few tribal women live beyond the climacterium (*vide infra*). The role of disease and diet in adult and infant deaths is currently under study. Preliminary analyses indicate that respiratory

TABLE 2. *The inhabitants of the Cofán Village of Duweno, 1968.*

House number	Name	Age (approximate)
I	Nasario Quieta	22
	Enma Quenama	21
	Morieto	3
	Reqquieta	6 months
II	Gabriel Quenama	32
	Domitela Quenama	28
III	Lorenzo Quenama	27
	Refina Aguinda	25
	Querubín	3
	Berta	4 months
IV	Gregorio Quenama	45
	Isabela Bustamente	43
	Marcela	16
V	Brocendo Bustamente	48
	Idnacia Aguinda	47
	Yuerio	21
	Cesário	19
VI	Julio Aguinda	52
	Simona Quenama	48
	Ricardo	25
	Eugenio	14
	Josefina	22
VII	Ambrocio Aguinda	75
	Rosario Quenama	68
	Ignacio	37
	Julio	23
	Esteban	22
	Telefuncio	21

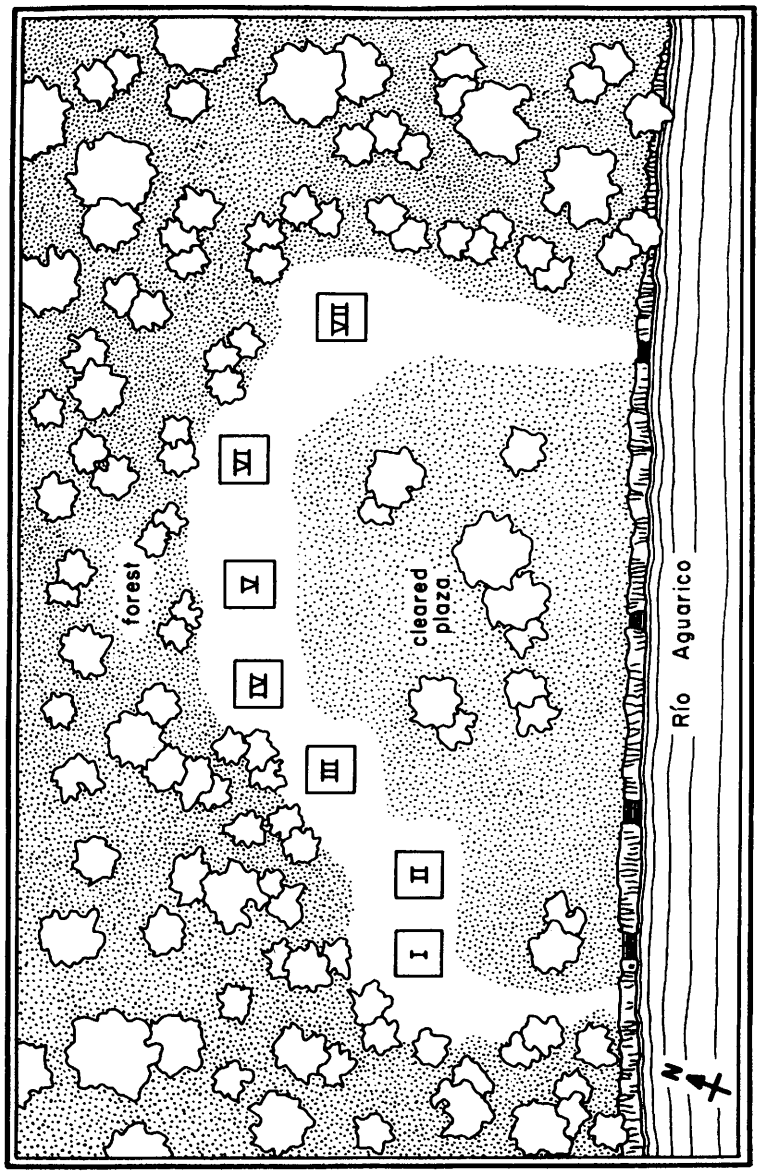

FIGURE 2. Map of the Cofán village of Dureno (1968). Roman numerals refer to families listed in Table 1.

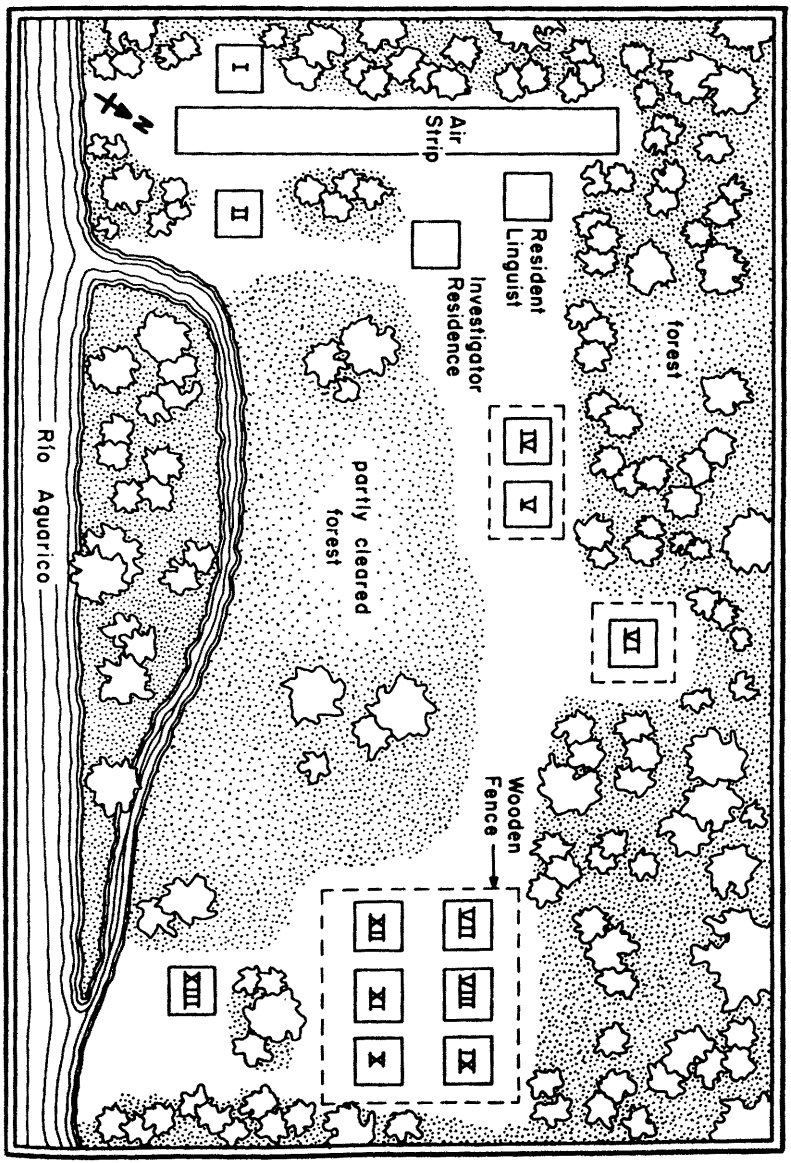

FIGURE 3. Map of the Cofán village of Duweno (1968). Roman numerals refer to families listed in Table 2.

TABLE 3. *Age distribution of the Dureno Cofán, 1960-1968.*

Age group	1960-1963 Number	%	1968 Number	%
0-2	20	17.54	9	10.01
3-5	12	10.52	6	6.81
6-10	12	10.52	18	20.50
11-15	11	9.64	7	7.95
16-20	14	12.28	15	17.01
21-25	12	10.52	7	7.95
26-30	7	6.14	10	11.19
31-35	8	7.04	3	3.41
36-40	2	1.75	7	7.95
41-45	2	1.75	1	1.11
46-50	4	3.50	2	2.26
51-55	5	4.38	1	1.11
56-60	5	4.38	2	2.66
61-65	0	0.0	0	0.0

diseases are a common cause of infant and adult mortality. Land pressure is not a significant factor in the emigration of families. It is to be noted that the age distribution and the total population of Dureno remained basically unchanged, a fact which suggests environmentally imposed limitations.

TABLE 4. *Comparative age distribution of the Dureno and Duweno Cofán, 1968.*

Age group	Dureno Number	%	Duweno Number	%
0-2	9	10.01	2	6.45
3-5	6	10.52	2	6.45
6-10	18	20.50	0	0.00
11-15	7	9.95	1	3.22
16-20	15	17.01	2	6.45
21-25	7	7.95	9	29.00
26-30	10	11.19	5	16.50
31-35	3	3.41	1	3.22
36-40	7	7.95	1	3.22
41-45	1	1.11	2	6.45
46-50	2	2.26	3	9.67
51-55	1	1.11	1	3.22
56-60	2	2.66	0	0.00
61-65	0	0.00	0	0.00
66-70	0	0.00	1	3.22
71-75	0	0.00	1	3.22

The age structure of Duweno differs strikingly from that of Dureno (Table 4) although the recorded ages of the former are highly suspect. Only 21% of the Duweno population is under 20 years of age, whereas above the 21-25 age category there is an expected decline. The advanced ages reported for both Dureno and Duweno populations are suspect. The resident linguists at Dureno have maintained birth and mortality records since their establishment in the village in 1958. The ages of the older inhabitants are inaccurate in that the lunar cycle and the harvests of the forest fruits are the only calendrical systems known. The ages of the Duweno population were obtained through the intermediacy of Catholic missionaries.

A comparison of the age distributions among the Dureno Cofán and the Río Aguarico Secoya is not significantly divergent (Table 5). Swanson's data (9) also show that the numerical size of the village is approximately equal to that of Dureno, which further emphasizes the environmental rather than the social factors as primary determinants in population size. The surveys of the Quechua-speaking villages of Río Napo, in which the slash-burn agricultural techniques are utilized, do not exceed 125 individuals.

TABLE 5. *Comparative age distribution of the Dureno Cofán and the Río Cuyabeno Secoya, 1960-1963.*

Age group	Cofán Number	%	Secoya Number	%
0-2	20	17.54	13	14.60
3-5	12	10.52	14	15.73
6-10	12	10.52	15	16.85
11-15	11	9.64	7	7.86
16-20	14	12.28	12	13.48
21-25	12	10.52	9	10.11
26-30	7	6.14	5	5.61
31-35	8	7.04	4	4.48
36-40	2	1.75	9	10.11
41-45	2	1.75	0	0.00
46-50	4	3.50	1	1.23
51-55	5	4.38	0	0.00
56-60	5	4.38	0	0.00

Borman stated that 80% of the Ecuadorian Cofán are monolingual, 15% possess some knowledge of Spanish, and 5% are fluently bilingual. Of the Colombian Cofán approximately 40% are moderately bilingual, 20% fluently bilingual, and 40% monolingual. It is estimated that 50% of the Colombian and 5% of the Ecuadorian Cofán are acculturated. At Dureno only two Cofán are bilingual, one of whom is a former resident of Colombia. Bilingualism is slightly higher at Duweno although there is less contact with whites.

No data on bilingualism among the Ecuadorian Secoya were obtained. However, their former geographic isolation and efforts to maintain tribal identity presuppose a high level of monolingualism.

COFÁN NOMENCLATURE AND CHIEFTAINCY

Chieftaincy is normally hereditary among the Cofán, being passed from father to eldest son. Another village male may be

selected by village consensus should the heir be judged not competent. Among the Ecuadorian Cofán the appellation "capitán" is used in reference to the village chief, who serves primarily as an intermediate between the villagers and outsiders in matters of tribal interest. Both the function and title of the chieftain have been borrowed from the lowland Quechua. The village capitán has no influence outside of his own village. Each settlement is autonomous. There is no paramount chieftain.

The eldest son of the former Dureno chieftain (House VI, Table 1, and Figure 2), the titular head of the village, commands little respect or obedience from the villagers. Another villager (Table 1, "On Island") aspires to the chieftaincy, but is also rejected because of his white orientation. The capitán of Duweno, conversely, (Table 2 and Figure 3, House VII) commands the respect and obedience of the inhabitants.

Teknonymy is practiced by the Cofán, the suffix "quintza" (father) and "cha" (mother) being appended to the given name. Should the child not survive, the parents receive the appellation "ghost parents." Lowie (10, p. 326) reported that teknonymy, assumed to be widespread in tropical South America, is definitely reported only for the Botocudo, Lengua, and the Yucuana.

The Cofán practice of patronymic binomialism is the direct result either of missionary influence or of that of the lowland Quechua, who adopted the system from the Spanish. The wife retains her surname after marriage rather than assuming that of the husband, a practice widespread among the lowland Quechua. Of the 12 surnames recorded at Dureno and Duweno apparently only two are neither of Spanish nor of Quechua origin (Tables 1 and 2).

ETIOLOGY OF DISEASE

The Awishiri believe in a disease caused by the "water boa" (*Eunectes murinus*), the only known symptom of which is abdominal distention said to be much more marked than terminal pregnancy. According to Awishiri belief the serpent gains access to the body when accidentally trod upon and migrates to the intestine, where growth occurs and causes abdominal distention years later.

The Awishiri and Cofán believe that a serpent strikes for reasons of fear, defense and magic. In the case of magic, the serpent is sent by a sorcerer. [The Awishiri shaman sends the reptile on his breath (2, p. 650)]. The following cases are illustrative.

The village men of Dureno refused to assist the resident linguist in transporting a snakebite victim to the adjacent airstrip because he was believed to be bewitched.

The father of a Cofán child who died of severe gastroenteritis was held responsible for the death because he had killed a serpent.

The Awishiri and Cofán believe that individuals who suffer frequent convulsive attacks are possessed by demons. The former recall only three instances of demon possession (epilepsy?) among their ancestors.

Awishiri children subject to delirium and convulsions and those who succumb to febrile diseases are believed to have been raped by souls of the dead which must wander aimlessly until they sexually assault and possess a child.

A Cofán girl of 18, to whom a detailed medical examination had been given, showed a history of supposed demon possession since menarche. Immediately following each mensis she appeared to be disoriented, with spittle and foam extruding from the mouth. The disoriented state lasted approximately 31 hours, terminating when the capitán and the village elders drank "yajé" (*Banisteriopsis* sp.) to effect the exorcism. Her behavior was diagnosed as hysterical. Lowie (11, p. 7) listed the hallucinatory plants ayahuasca, cayapi, yajé and hayahuasca as generically synonymous.

A Quechua woman at Santa Cecilia, Río Aguarico, claimed to be experiencing excruciating chest pains. A missionary priest gave her medicines, which were ineffective in alleviating her obviously psychosomatic distresses. Later the capitán and the woman, in a hut illuminated by a single candle, drank yajé and chanted to the accompaniment of a drum. It was learned, from the capitán, that the woman's spouse had secretly departed downriver accompanied by another woman.

The deaths of three Cofán children of severe gastroenteritis were attributed to witchcraft in order to conform to the Cofán belief that all catastrophic events are diabolically inspired.

The Cofán believe that intestinal parasitism results from the ingestion of sand and the Awishiri, more specifically, claim that oxyuroid (*Nematoda*) infestations are due to the sting of the "pamana" ant (not identified). The Awishiri, although meticulous in washing their hands and insisting

that the children do similarly prior to preparing and eating food, do not comprehend the relationship between food contamination and intestinal infections. Their preoccupation with cleanliness is apparently esthetic rather than hygienic.

The Secoya, Cofán, and Awishiri recognize the significance of contact with diseased persons in the dissemination of contagious diseases. During epidemics many Cofán families voluntarily leave the village to reside in the forests until the disease dissipates. The capitán often orders ill individuals to remain away from the village until completely recovered. The Awishiri have observed that they become ill following contact with groups in which there is illness. They have noted the frequency of gastroenteritis and respiratory diseases after killing or robbing outsiders of their possessions, attributing the illness to a curse placed upon them by their victims. The season of the "chonta" fruit (*Guilielma insignis*) harvest, the only time of peaceful reunion, is characterized by the excessive consumption of chonta fruit. The increased incidence of gastroenteritis at this time has been observed by the Awishiri.

The Awishiri believe, as do Cofan, that demons are responsible for many diseases and deaths. At sunset, when Awishiri children customarily engage in play some distance from the dwellings, they are warned by the parents that demons will lure them into the forests in order to effect their capture. These demons are described as monkeys possessing a unique voice and they are believed to pierce their victims with invisible arrows which causes them to fall ill and thereby facilitates their capture. After capture the children are devoured.

Demons are believed to possess other animals, especially the jaguar, which is said to visit the shaman. If the visits are too frequent, the shaman becomes possessed by a malignant spirit which is transported by the jaguar and which causes headaches. The shaman drinks a concoction of "daboka" fruit (not identified) to exorcise the demon.

The "abeya" bird (not identified), according to Awishiri belief, holds great power over children. When it perches on the shoulder of the shaman, the children must be summoned to pay it reverence. Failure to do so engenders illness.

MENARCHE AND MENSTRUATION

Menarche is ceremonially observed by the Awishiri. This confirms Steward and Métraux's statement (2, p. 628) that the Awishiri may have initiation rites. At the onset of the menstrual period, the pubescent girl is thrashed with nettles until the skin is thoroughly reddened, after which she must sit on the nettles for three consecutive nights to prevent the development of intravaginal boils. During this time she may drink only from a gourd. Steward (1, p. 529) also stated that the Awishiri flog the pubescent girl and put pepper into her eyes.

The Cofán do not observe the menarche ritually, but adhere to certain rituals throughout the reproductive life, which constitutes an exception to Steward's comment (1, p. 529) that only the first mensis is observed. At the initiation of the menstrual cycle, the woman constructs a hut at a distance from her dwelling although some dwellings have interior rooms set aside for the observance. From the onset of the menstrual flow until its termination the woman remains seated on discarded clothing or plaintain leaves. For seven days she may not use eating utensils not her own nor may she cook for others. On the third day of the observance she may bathe and eat uncooked foods after which she then resumes her normal activities except for the preparation of family meals, which are prepared by the husband or by the children. On the seventh day the ritual is terminated by bathing in lukewarm water.

MARITAL CUSTOMS

The three tribes, according to missionary informants, strongly condemn promiscuity and adultery. Only monogamous marriages are known among the Cofán and Secoya. The Awishiri practice polygamy, usually claiming the mates of slain enemies.

Contraceptive methods are unknown to the three tribes. The Cofan customarily practice abstinence from the birth of an infant until nursing ceases, until it is approximately 18 months of age, or until more children are desired. The Awishiri practice abstinence until the child reaches its fourth year, during which interval the

father customarily resides with another wife.

Certain Cofán and Siona families have a history of tribal intermarriage and the children of such unions, in turn, may marry into either tribe. Only one instance of marriage between Cofán and Quechua is known, in which a Quechua worker at Santa Cecilia has a Cofán and a half-Cofán wife. This is the only reported case of polygamy among the Cofán. Marriage between Ecuadorian and Colombian Cofán is frequent.

PRE- AND POST-NATAL TABOOS

The three tribes observe stringent dietary restrictions during pregnancy. Awishiri women are forbidden to eat squirrel (*Sciuridae*), forest turkey (*Cracidae*) and woolly monkey (*Lagothrix*), nor are they permitted to enter the forest where they may be pursued and eaten by forest creatures. Necklaces are not worn because the child is then predisposed to be born with the umbilical cord encircling the neck. Yuca (*Manibot utilissima*) is never eaten in the morning to avoid the formation of cysts in the amniotic sac.

Awishiri women give birth seated in a hammock containing a centrally placed opening through which the newborn falls to the ground. This concurs with Steward and Métraux's observation (2, p. 645). During labor the parturient may support herself by the stick suspended above the hammock. In terminal labor the abdomen is vigorously rubbed by an older woman or by the husband. After birth the umbilicus is usually severed with a section of sharpened bamboo ("guadua," *Guadua angustifolia*). The mother then retrieves a small stick from a pot of boiling water and, wrapping the tip in kapok (*Ceiba pentandra*), repeatedly touches the umbilicus until bleeding ceases. The placenta is placed in a clay bowl, carried into the forest, and deposited at the base of a certain tree (not identified). Stillbirths are buried by the mother alone or with the assistance of another woman. Spontaneous abortions and premature births are deposited in the nests of leaf-cutting ants (*Atta sp.*). If the fetus is devoured future spontaneous abortions and premature births will be avoided.

Prior to labor, the Dureno Cofan customarily construct a temporary hut on the river bank opposite the village, although the hut is occasionally built on the village side of the river. The couple remains together during labor. Should the parturient require assistance the husband summons another woman. Immediately after parturition the father fashions a bamboo knife with which he severs the umbilicus. Thereafter the father may not touch the child for a specified length of time (not determined). After childbirth the family erects a second hut in which they remain three to five days.

In the post-partum period the father observes certain restrictions to protect himself from malignant spirits. The mother observes the same restrictions as those of the menstrual period but for a more prolonged period at the termination of which she resumes most of her obligations, but prepares meals again only in the fifth or sixth week of the infant's post-natal existence. If assistance is required in this interval only a menstruating woman may be summoned.

Difficult births are greatly feared in these tribes although elderly Cofán women claim the ability to correct such births by pressing slowly and carefully on the abdomen. The Awishiri spoke of a woman who suffered from uterine prolapse and whose husband, inserting his hand into the vagina, crushed the vertebral column, causing the fetus to abort. Another woman who had lost five infants through difficult births was experiencing difficulty with the sixth delivery. Upon the extrusion of a hand the husband inserted a bamboo knife into the vagina, decapitated, and then extracted the fetus; the head aborted the following day. A similar procedure was said to have been performed on a third woman.

Pedal presentations, although not feared, invariably mean a long labor and the possibility of the fetus strangling in the amniotic fluid. No attempt is made to free the encircling umbilicus.

In the immediate post-natal period special care is not given the infant save for that previously mentioned. Resuscitation is not attempted on infants who do not respond immediately following birth. The Awishiri, however, use pepper (*Capsicum*) to stimulate respiration.

Infanticide is practiced frequently by unmarried Cofán mothers, who bury the in-

fant alive with the placenta. Although multiple births are unknown among the Dureno Cofán, some women say that one infant would be sacrificed.

The Awishiri practice infanticide freely, especially if the family is large. Unwanted children are buried alive or are drowned. The weaker of twins is destroyed because, it is claimed, the mother cannot care for two infants. Steward (1, p. 529) remarked that one of the twins is killed because it is believed to be a spirit's child. If the father or both parents are killed by a raiding party the surviving child, if too young to care for itself, is buried with the deceased.

The Awishiri father, after severing the umbilicus, may not cut "cuyuto," the tree (not identified) from which the stick used to suspend the hammock is obtained. Should he disobey the taboo, the umbilicus will increase in size and become diseased. The restriction is observed until the umbilicus falls. The father may use only a fan on the cooking fire; he must never blow on the fire. Failure to observe the taboo causes the child's skin to redden and become irritated. The father is also prohibited from touching beeswax ("gininca") used in sealing the quivir, otherwise the newborn will develop malformed dentition. The mother must fast after childbirth to avoid the development of caries. After the birth of the first child both parents eat only "nawaquina" ("bird food").

Steward and Métraux (2, p. 645) reported that the woman is isolated during childbirth and that both parents remain in their hammocks dieting. Although there are few details available, the couvade seems to be strongly developed, as Steward and Métraux (2, p. 628) anticipated. That the Awishiri practiced the couvade is intimated by Tessman (6), who stated that Awishiri couples rest in their hammocks and abstain from meats for two weeks after childbirth.

THE CLIMACTERIUM

Few women of these tribes are known to reach and live beyond the climacterium and those who do apparently never exhibit climacteric symptoms. The absence of such symptoms may indicate that the psychological and physiological effects commonly associated with the climacterium may be culturally rather than biologically determined.

ATTITUDES TOWARD THE ELDERLY, AND THE MENTALLY AND PHYSICALLY DISABLED

The Cofán and Secoya give solicitous care to invalids, the mentally incapacitated and the elderly. The Awishiri, however, practice a form of abandonment; they refuse firewood and water to the elderly. When the Awishiri are fleeing from an enemy, the elderly are often hurled from a precipice to avoid their being burdensome and endangering escape. This fact confirms Steward's statement that some Panoan and Záparoan groups kill the aged and the infirm (1, p. 529).

Only three instances of presumed aberrant mental behavior are recalled by the Tiwaeno Awishiri: a mentally retarded child with severe (epileptic) attacks was well-cared for until the age of nine, when she and her father perished in an enemy attack; a woman whose husband, for no observable reason, developed an intense hatred of her and killed her with the acquiescence of others; a woman, whose fate is unknown, was considered too incompetent to care for her child.

BURIAL PRACTICES AND CONCEPTS OF AN AFTER-DEATH EXISTENCE

The Cofán believe that the spirit of the dead remains active after death, wandering in search of children. A child who has succumbed to convulsions is believed to have been murdered by a spirit desiring a child for itself. The Cofán, therefore, sing to the spirits of the dead, imploring that their children not be abducted.

The dwelling in which an adult dies is burned so that the homeless spirit cannot locate its original dwelling and there attempt to capture children. Infants are buried at or near the place of death with little ceremony and the dwelling is not burned should the child die within. Larger children and adults are dressed in new garments, wrapped in a blanket containing their possessions, and then enveloped in a covering of guadua. The body is transported to a place distant from the village and interred in a grave four to five feet deep. The grave is lined with plaintain

leaves and a platform is prepared to receive the corpse. Each person attending the burial selects a small lump of clay, transfers it to the other hand behind the back, and then tosses the clay in the open grave. After the grave is filled a small temporary hut is constructed on the fresh mound. A candle or small fire, that must burn throughout the first night, is placed within the hut. Vigil is maintained at the grave for at least a year after burial.

The Awishiri bury their dead in a grave four to five feet deep, covering the corpse with split bamboo before refilling it. Steward and Métraux (2, p. 646), however, claimed that the Awishiri leave the deceased in his hammock for three days, then collect the fluids of decomposition in an urn and bury it within the house. Personal possessions are burned. The Cofán and Awishiri burials are certainly missionary-influenced in that such interments are reported only for some Panoan groups (1, p. 529).

Live burial is practiced, frequently on the insistence of a mortally wounded or terminally ill individual. To an Awishiri, the supreme humiliation to be inflicted upon an enemy is to leave the body unburied to decompose or to be devoured by forest animals.

The Awishiri profess belief in an afterlife existence; the soul is believed to depart the grave as an amorphous substance which grows and finally assumes the form of a jaguar (*Felis onca*). The Zaparoans believe that souls are reincarnated as animals (1, p. 529).

There exists a vague belief in an afterlife abode into which the soul attempts to enter but is rejected by a large worm. The rejected soul then metamorphoses into a white ant or termite (*Isoptera*) which lives in Awishiri houses. The soul ceases to exist when the white ant expires. The Awishiri are said to believe in a skeleton-like being with a visible head (2, p. 649).

CONCEPTS OF HYGIENE AND SANITATION

Rivers, the primary source of water, serve for drinking, bathing, washing clothes, dumping refuse, and the disposal of wastes. When rains muddy the larger rivers, the Awishiri translocate to smaller streams; they never establish living sites above the source of utilizable water. Thus, contamination is non-existent. The Cofán live in relatively compact villages near the river and, thereby, minimize the area of contamination. The Secoya, however, live dispersed along a more slowly moving river, and, hence, have a greater problem with contamination.

Each Secoya and Cofán family maintains a designated area in the forest near the dwelling for defecation. They do not, as do the Jívaro in the southern Oriente, dig a shallow hole and then refill it after use. The Awishiri are said to defecate in shallow streams.

Two Tiwaeno families have followed the example of the resident linguist in constructing pit latrines. One family dug the pit in such a manner that it communicated with a subterranean stream. The Tiwaeno group says that the practices of enemy groups are vile, asserting that they defecate on the ground near the dwelling, covering the feces with palm bark.

The Tiwaeno Awishiri have observed that certain species of bees, wasps, and butterflies are attracted to these areas and remain overnight when the feces remain uncovered. Flies are killed when discovered within houses, because the Awishiri comprehend the relationship between the flesh on which the fly alights, the larvae and the adult flies.

The three tribes have noted that dogs and pigs forage in feces and, therefore, these animals are not permitted access to the dwellings. However, their relationship to the dissemination of disease is not comprehended.

DIET

The dietary preference of the three tribes is similar. Upon arising a beverage of mashed plaintain (*Musa paradisiaca*) "chucula" (fermented masticated yuca, *Manihot utilissima*), or "yoco" (*Paullinia yoco*) is consumed. The latter is not reported from the Awishiri. Food prepared the previous day and natural foods constitute the main dietary articles. A main meal is prepared whenever meat is available. Chicha, however, is the basic dietary element.

The diet of the three tribes is ample compared to that of the Quechua at Tena. The Cofán and Secoya eat meat almost daily

and usually once a week in times of scarcity. The meat is smoked or prepared in a soup of plaintain and yuca, often with herbs and salt added. Corn, beans, sweet potato, avocado, pineapple, lime, guava, and nuts comprise recorded supplementary dietary items.

Each family at Dureno and Duweno maintains "chacras" (fields) of plaintain and yuca, at least one field per family. Fish and game are still prominent in the diet, although less common than in the past. Domesticated animals kept by the Cofán include chickens and pigs, which serve as a medium of barter rather than for consumption. Cattle, introduced at Dureno several years ago, are not eaten.

The Awishiri diet is basically similar to that of the Cofán and Secoya except that more meat, approximately six times more than any other dietary element, is consumed. Prohibitions against eating tapir (*Tapirus*) and deer (*Mazama, Pudu*) are disappearing (totemic prohibitions?). The Arawakans and the Panoans say that the soul is reincarnated as a deer, thus offering a possible explanation for the taboo against eating deer (1, p. 531). Chucula is consumed in quantities when the diet is curtailed for prolonged periods of time.

FISHING AND HUNTING

The Cofán and Secoya are losing the technique of preparing fish poisons ("barbasco," *Clibadium*) and concocting poison for blowgun darts. The Dureno Cofan still maintain clumps of "barbasco" and obviously use the poison occasionally in fish kills during the dry season. The Awishiri prepare fish poisons from *Clibadium* and *Tephrosia* (2, p. 643). Dynamite and muzzle-loading shotguns are replacing fish poisons and the blowgun, but explosives and gunpowder are virtually unobtainable. The blowgun poison, prepared by the Cofán from the sap of a vine (not identified), is extremely weak and inferior to the poison previously obtained by trade from Brazil. The Awishiri use both the lance (larger game only) made from chonta (*Guilielma insignis*) and the blowgun for hunting. However, Steward and Métraux (2, 6. 639) stated that only spears (also of chonta) are utilized. The blowgun is never used in warfare (10, p. 11). It was noted that the Awishiri did not use the blowgun after 1571 (2, p. 643); it had been recorded from the Piojé and Záparo (12, 251).

The blowguns used by the Siona, Secoya, Cofán, Jívaro, and the Awishiri are strikingly different in respect to the mouthpiece. Among the Siona, Secoya and Cofan, the mouthpiece is a flaring wooden section into which the lips are placed. The mouthpiece of the Jívaro blowgun is carved from bone, while that of the Awishiri terminates in a horizontally flattened structure carved from wood.

CLOTHING AND PERSONAL HYGIENE

In the hot (dry) season the Cofán bathe daily; in the rainy season they usually wait for a sunny day. The men customarily bathe upon returning from the hunt regardless of the season. Except for a few elderly individuals, the Tiwaeno Awishiri bathe at least daily.

The Cofán wash their clothing at least weekly and infants' clothing frequently. The Awishiri not in contact with civilization do not wear concealing garments (2, p. 641); the non-missionized groups smear the body with "achiote" (*Bixa orellana*). The Cofán, Siona, and Secoya paint elaborate facial designs in achiote and in genipa (*Genipa americana*). Among the Cofán and Secoya the use of achiote for body decoration is apparently esthetic rather than hygienic (13, p. 497).

The cushma, a two-piece cloth garment with openings for the head and arms, formerly made of barkcloth, is the typical male garment. The Tetete male seen near the Río Aguarico wore a barkcloth cushma. Pants are frequently worn beneath the cushma, as well as boots purchased from Colombian traders. The hair is closely cropped in all males and a palmfiber headband is usually worn. Nasal and ear ornaments of feathers and wood are consistently worn. Both sexes wear arm and ankle bands, as well as numerous strands of highly colored beads. The eyebrows and eyelashes are plucked, an operation performed with a palm-leaf fiber. The women customarily wear a loose skirt and a blouse opening to the front to facilitate nursing.

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REFERENCES

1. J. H. STEWARD, *Tribes of the Montaña. An Introduction*, in Vol. 3, Handbook of South American Indians (Bull. Bur. Amer. Ethnol. 143), J. H. STEWARD, Ed., Smithsonian Inst., Washington, D.C., 1948, pp. 507-533.
2. J. H. STEWARD and A. MÉTRAUX, *Tribes of the Peruvian and Ecuadorian Montaña*, in Vol. 3, Handbook of South American Indians (Bull. Bur. Amer. Ethnol. 143), J. H. STEWARD, Ed., Smithsonian Inst., Washington, D.C., 1948, pp. 535-656.
3. J. A. MASON, *The Languages of the South American Indians*, in Vol. 6, Handbook of South American Indians (Bull. Bur. Amer. Ethnol. 143), J. H. STEWARD, Ed., Smithsonian Inst., Washington, D.C., 1950, pp. 157-317.
4. J. H. STEWARD, *Western Tucanoan Tribes*, in Vol. 3, Handbook of South American Indians (Bull. Bur. Amer. Ethnol. 143), J. H. STEWARD, Ed., Smithsonian Inst., Washington, D. C., 1948, pp. 737-748.
5. A. SIMPSON, *Notes on the Piojés of the Putumayo*, Journ. Roy. Anthrop. Inst. Gr. Brit. Ireland 8: 210-222 (1879).
6. G. TESSMAN, *Die Indianer Nordost Perus*, Friederischen, de Gruyters Co., m. b. H. Hamburg, 1930.
7. H. BURBANO MARTINEZ, L. ANTONIO RIVADENEIRA, and J. MONTALVA MONTENEGRO, *El Problema de las Poblaciones Indígenas Selváticas de Ecuador*, in Tercer Tomo, *Artesanía, Defensa de la Salud, Seguro Social y Poblaciones Selváticas*, V Congreso Indigenista Interamericano, Quito, Ecuador, 1965.
8. K. GRUBB, *The Lowland Indians of Amazonia; A Survey of the Location and Religious Conditions of the Indians of Colombia, Venezuela, the Guianas, Ecuador, Peru, Brazil, and Bolivia*, London, 1927.
9. W. L. SWANSON, *Estudio de la Patología y la Medicina Aborigen de las Tribus Indígenas del Cofán y Secoya del Oriente de la República del Ecuador*, Thesis, Universidad Central, Quito, Ecuador, 1965.
10. R. H. LOWIE, *Social and Political Organization of the Tropical Forest and Marginal Tribes*, in Vol. 5, Handbook of South American Indians (Bull. Bur. Amer. Ethnol. 143), J. H. STEWARD, Ed., Smithsonian Inst., Washington, D. C., 1949, pp. 313-350.
11. R. H. LOWIE, *The Tropical Forests: An Introduction*, in Vol. 3, Handbook of South American Indians (Bull. Bur. Amer. Ethnol. 143), J. H. STEWARD, Ed., Smithsonian Inst., Washington, D. C., 1948, pp., 1-56.
12. A. MÉTRAUX, *Weapons*, in Vol. 5, Handbook of American Indians (Bull. Bur. Amer. Ethnol. 143), J. H. STEWARD, Ed., Smithsonian Inst., Washington, D. C., 1949, pp. 229-263.
13. C. LÉVI-STRAUSS, *The Use of Wild Plants in Tropical South America*, in Vol. 6, Handbook of South American Indians (Bull. Bur. Amer. Ethnol. 143), J. H. STEWARD, Ed., Smithsonian Inst., Washington, D. C., 1950, pp. 319-504.