REPUBLICA OF COLOMBIA
UNIVERSITY OF CARTAGENA
OFFICE OF INVESTIGATIONS

HABITS TOBACCO AND RELATIONED DISEASES OF ORAL CAVITY IN ATLANTIC COAST IN COLOMBIA

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EPIDEMIOLOGY OF ORAL CANCER

The incidence of oral malignant disease is subject to considerable geographical, ethnic, and socioeconomic variation. In different communities, cancer of the mouth varies from uncommon to the commonest of all malignant tumors.

Although the magnitude in terms of numbers varies between different communities, the prognosis of this disease in its advanced stages is universally very poor, and in terms of mutilation or dysfunction, the morbidity following curative treatment, be it radiotherapy or surgery, can be considerable. Furthermore the terminal phase of life of the incurable is protacted and distressing. In this respect, the disease is of importance in local community medical care regardless of where in the world in occurs.

Epidemiologic studies had been and are being conducted with a resultant better understanding the predisposing factors involved in this disease. The advanced stage at which the majority of patients in communities of different

cultures and standards of living present with oral carcinoma implies both ignorance and lack of concern.

Cancer of the mouth, although diagnosed in some instance in otherwise healthy tissue, is frequently found in macroscopically and microscopically abnormal mucosa.

The occurrence of the abnormalities, which include specific clinical and histologic entities. similarly has marked geographical. ethnic socioeconomic differences.

These abnormalities, are classed as premalignant lesions or as precancer, can be determined as such only by the subsequent observation of malignant transformation whitin the lesion. This transformation is dependent upon various factors.

The concept of Carcinogenesis as a two stage mechanism with an initiation process sentizing the cell to the later malignant influence of promoting factors.

The intervals between exposure to the initiator and appearance of the malignant change may be many years.

Variations among different ethnic groups within the same community also occur. The prevalence of specific sites of

origen also differes between different countries and population groups.

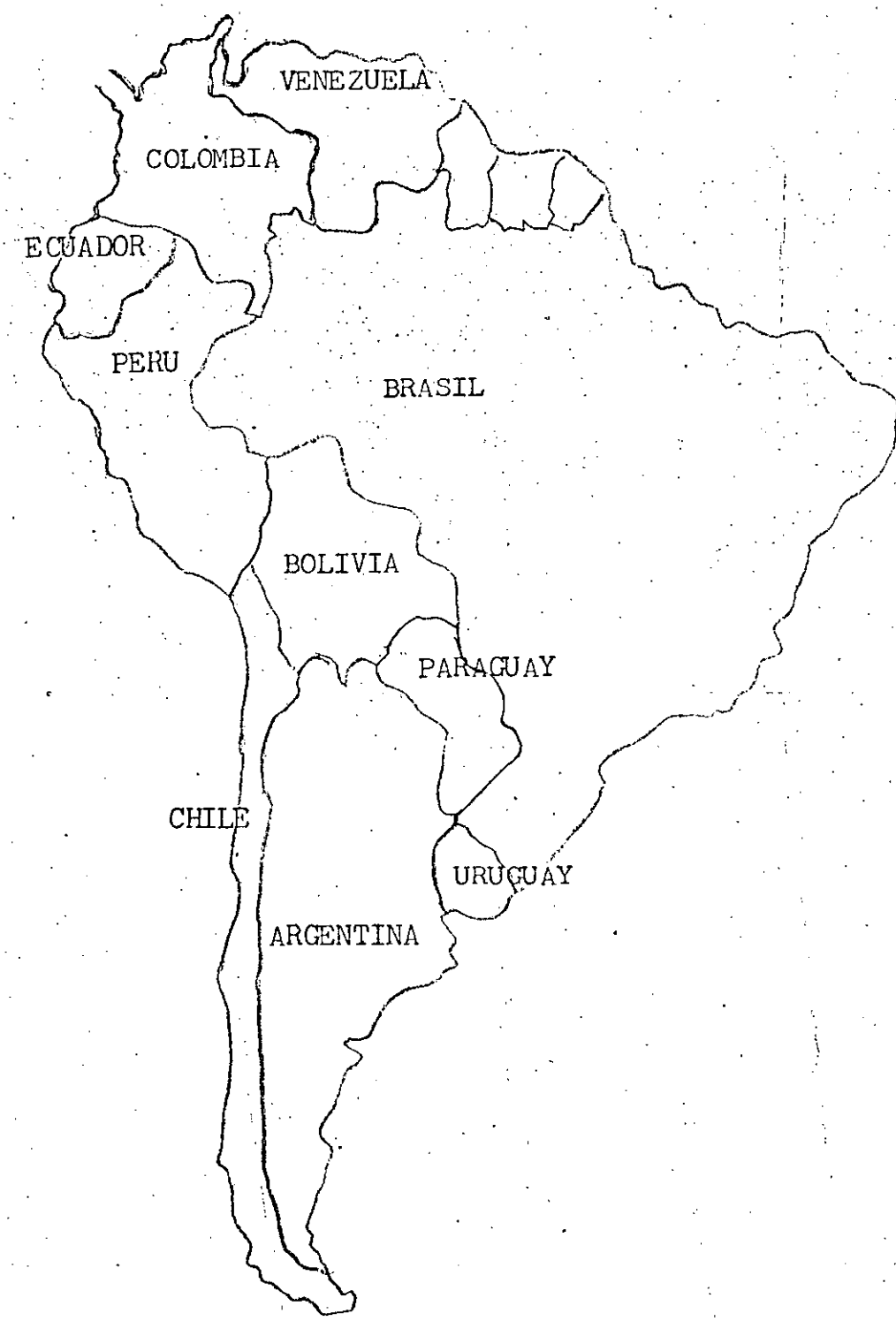
LOCATION

Colombia is locates in the Northwestern part of South America. Its boundaries are to the North with the Atlantic Ocean; to the South with Ecuador and Peru; to the East with Venezuela and Brasil; to the Northwest with Panama and to the West with Pacific Ocean. It has two tropical zones with a rainy and non-raining season. Three ecuatorial zones with rains all year round; and high temperatures according to the elevation.

Because of these reasons, it enjoys a variat of climates and different ethnic groups wich means different customs and different habits for different people.

Its territorial division has five natural regions:

1. The Caribbean Region. (Atlantic coast).
2. The Pacific Region (Pacific Coast). Low prominence, forest and marshy with tropical humidity clime and rains abundants season.
3. The Andine Region. Mountains.
4. The Orinoquia Region. A plain region.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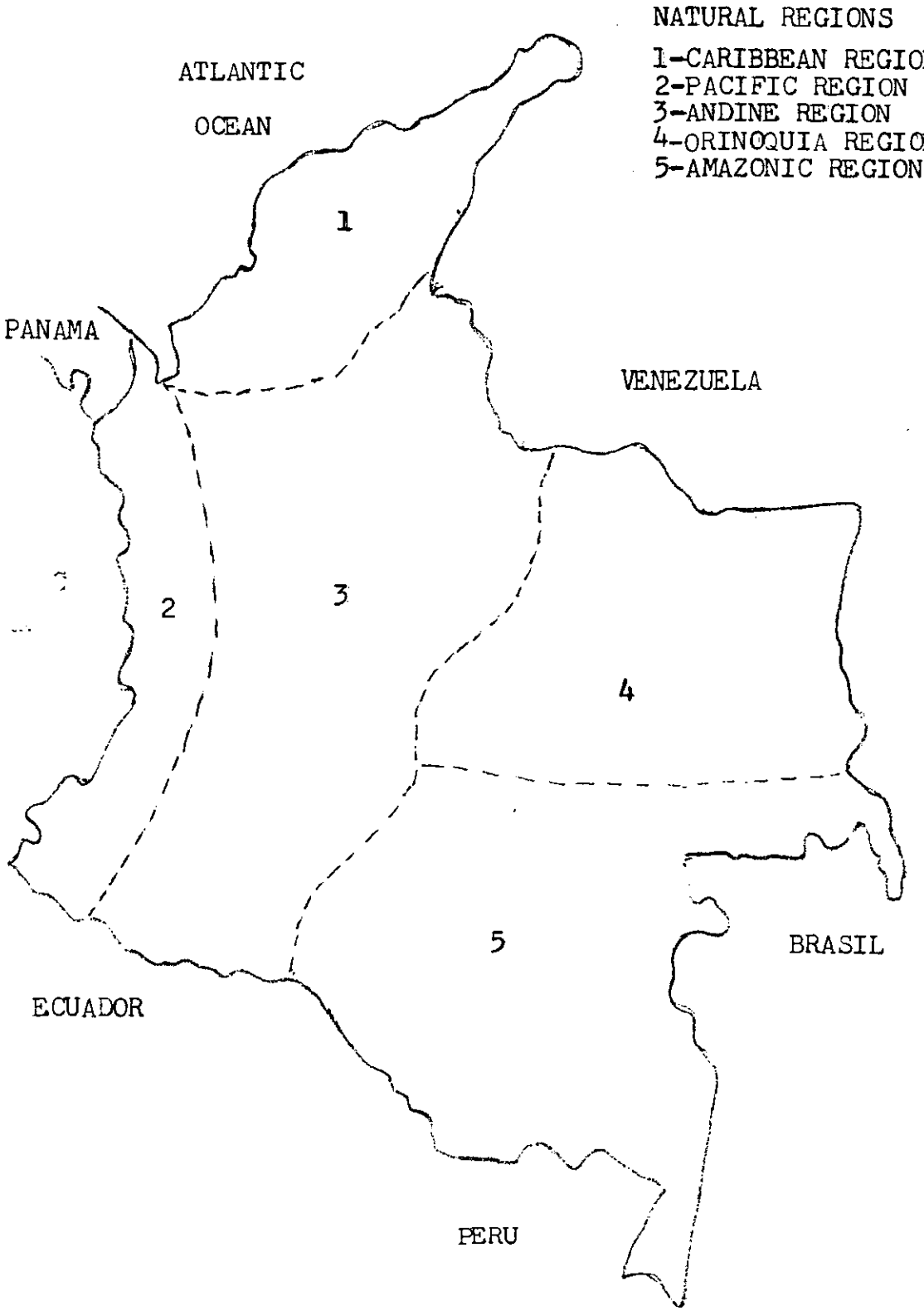

NATURAL REGIONS
1-CARIBBEAN REGION
2-PACIFIC REGION
3-ANDINE REGION
4-ORINOQUIA REGION
5-AMAZONIC REGION
ATLANTIC
OCEAN
1
PANAMA
VENEZUELA
2
3
4
5
BRASIL
ECUADOR
PERU

5. The Amazonic Region.

THE ATLANTIC COAST

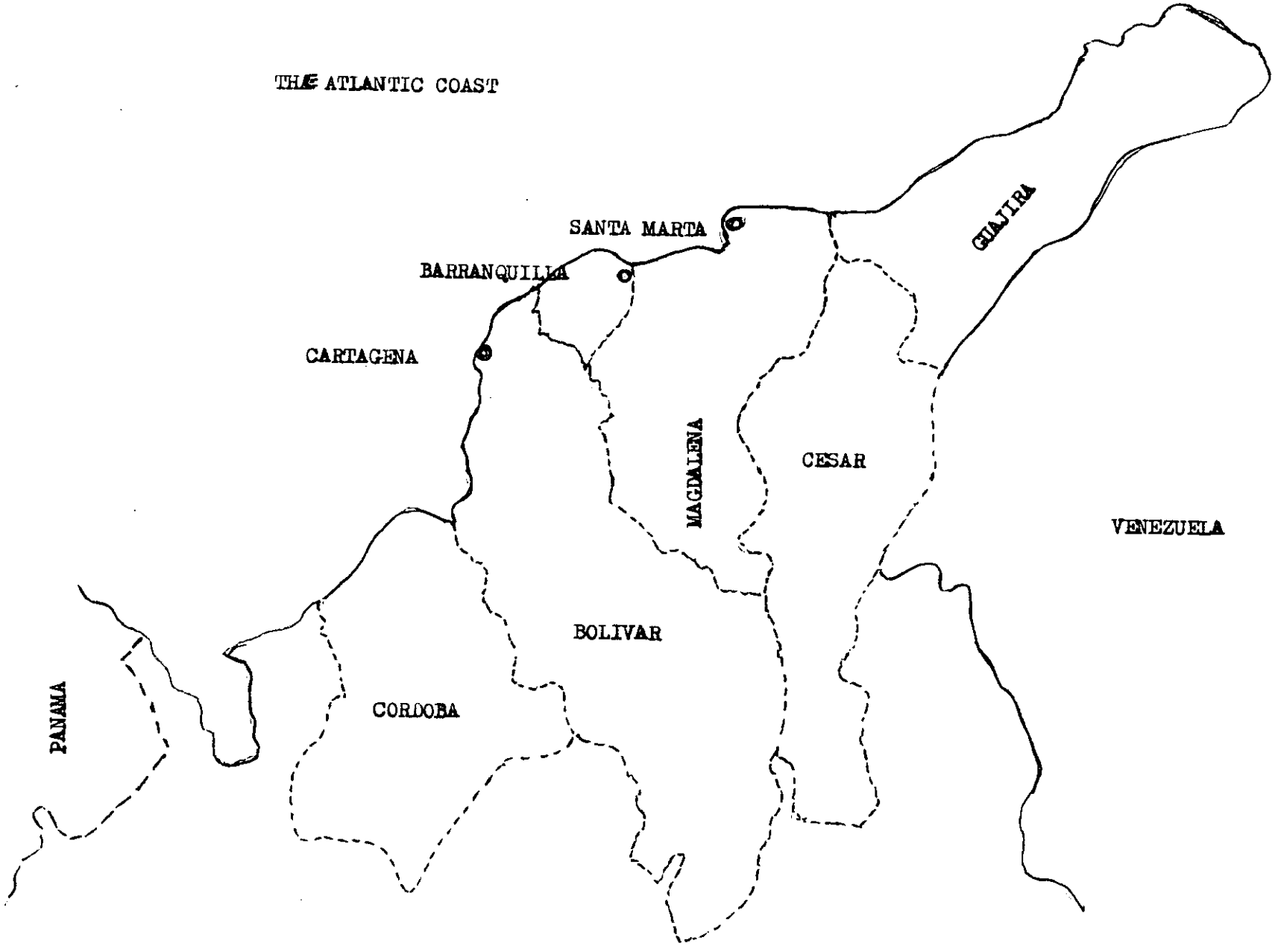
It has 7 departments: Atlantico. Bolivar, cordoba, Cesar, Guajira, Magdalena and sucre. It has an extension of 132.244 Kms2, equivalent to 11.6% of national territory and a population of aproximadly 7 millions in habitants.

The principal ports which located in thiscoast are: Santa Marta, Barranquilla and Cartagena.

Temperature varies between 28°C to 30°C.

The population is integrated by three races: Indian, White and Black and their mixture.

THE ATLANTIC COAST



TOBACCO HABITS

There is a wealth of evidence and opinion incriminating tobacco as the prime factor resposible for the development of premalignant lesions and of malignant disease of the oral cavity.

Tobacco is a chemical complex substance for which a number of different constituents. More than 1.000 substances have been identified in tobacco. Some of these are frankly carcinogenic, being either initiators or promotors, but among them there are also substances capable of additional harmful effects, such as enhancement of the local absorption of carcinogens.

In many areas throughout the world, members of the low economic groups smoke rolled leaves or small cigars with the lit in the mouth. In some of these areas the incidence of palatal carcinoma is high.

The reverse smoking in South America and Caribbean people has been described by others as health problem. This

habit by custom seam to be in the lower socioeconomic groups of the Caribbe.

The origen of this peculiar custom is not clear, and the purpose is vague although many explanations have been determined.

In Atlantic coast in colombia two majors groups of hand-rolled cigars are smoked in a wide variaty of ways. A method of smoking occurs among women and men, whereby the burning end and most of the lenght of a rolled tobacco knows as a CALILLA, is held within the mouth and rarely removed. These are slow burning and hence are smoked for prolonged periods of time.

Calilla and cigars are a home made products. The first is tobacco leaf rolled into a long cigar of 15-20 centimeters in length and 1 centimer in diameter. No additives are used, only tabacco.

A third type is a cigarette. It is the most cammon in population, specially a non-filter commercial confectioned with black tobacco.

Characteristic mucosal lesions develop on the hard palate, an unusual site for cancer of the mouth, where the local

effects of heat and smoke are focused.

Temperature adjacent to the palatal mucosa of subjects practicing this method of smoking was measured by Quigley et al. They found and appreciable temparature rise (up to 64°C).

Some authors considered that the ducts of the glands could probably form a portal of entry for the pyrolitic products of tobacco, wich may act as carcinogens.

This widely practiced habit, is held responsible for the high incidence of oral premalignant lesion and carcinoma.

The same habit has been noted in Panama, Netherlands Antillas and Atlantic Coast of Venezuela.

MUCOSAL CHANGES IN ORAL CAVITY

The fact that carcinoma of the oral mucosa may be associated with other mucosal lesions has been known for a long time.

LEUKOPLAKIA

Is defined as a white patch or plaque that cannot be characterized clinically or pathologically as any other disease.

The lesions are characterized by the presence of a white patch any where in the oral cavity that may vary from a quite small and circuscribed plaque to an extensive lesion involving a large area of mucosa.

The current accepted use of the term Leukoplakia implies a clinical condition with no histologic connotation.

Lession may be white, whitish yellow or gray and some apparear Homegeneous while other os Speckled, showing

nodular white excrecences on a erythematous base. The splecked leukoplakia are associated with premalignant change o frank malignant disease. Concomital monilial infection in some of the splecked forms has been reported and is the subject of current studies.

ERYTHROPLAKIA

the term is used to designate lesions of the oral mucosa that present as a bright red, velvety plaques which cannot characterized clinically or pathologically as being due to any other condition.

It represents a clinically well defined red patch without a known etiology. It has been separated into various clinical types, which have been described as either homogeneous or mixed with patchs of leukoplakia.

PALATAL CHANGES IN REVERSE SMOKERS

It has been reported earlier that the habit of reverse smoking was atrongly associated with palatal lesions. It was also emphasized that these palatal lesion showed a varied clinical picture and specific histologic changes associates with a high percentage of epithetial dysplasia.

It should be remembered that more than one component may be found in the same patient.

The palatal changes associated with the habit or reverse Calilla or cigarette smoking, were rather diverse and consisted of several components.

The components are follow:

PALATAL KERATOSIS denotes s diffuse whitenning of the palatal mucosa which may be slight, moderate or intense.

EXCRESCENCES are 1-3 m.m. large, elevated areas often

with a central red dot marking the orifice of the palatal mucosa glands.

PATCHS are well defined, elevated plaques.

RED AREAS designated parts of the palatal mucosa which show a well defined reddening without ulceration.

ULCERATED AREAS.

NON PIGMENTED AND PIGMENTED AREAS. The habit of reverse smoking was often found to be associated with an increased pigmentation, or less frequently with loss of pigmentation.

In countries the palatal changes caused by Pipe or cigar smoking are termed Leukokeratosis Nicotina Palati or Nicotinic Stomatitis.

It is characterized by a marked degree of reversibility if the habit is discontinued, and absence of epithelial dysplasia. it does not appear to be a precancerous lesion.

The results from this prospective study shows that the habit of reverse smoking was strongly associated with palatal changes was found to be very high amongs reverse

Calilla or cigars smokers.

SQUAMOUS CELL CARCINOMA

The clinical appearance of Carcinoma varies and depnds upod their duration and rates of growth.

the lesions as described by clinicans: Red lesions, white lesions, mexed red and with lesions, ulcerated lesions exofitic, verruoous.

These lesions may present as small, irregular, thickened areas. As de Neoplasm becomes largest, it may demostrate a crater-like surface ulceration with rolled indurated margins or present as large funganting masses.

Paradoxically, these lesions occurs at sites readily accesible for observation and therapeutic interception.

MORBIDITY STUDY

A National Study of Health were determined in colombia (1977-1980).

In this study the sample ramdon was selected fron the different regions, in people rainging over 15 years (It is calculated in 14 millions, upon a global population of 21 millions).

Result relationed with tobacco lesions, were:

LEUKOPLAKIA.	Men 4.9%		Women 2.7%
Regions:	Atlantica	5.5%	
	Oriental	2.0%	
	Bogota	1.1%	
	Central	7.2%	
	Occidental	1.1.%	
PALATAL CHANGES	Men 1.5%		Women 2.3%
Regions:	Atlantica	4.6%	
	Oriental	0.0%	

Bogota	0.0%
Central	2.5
Occidental	1.8%

ATLANTIC COAST STUYDY

METHODS

The Clinical study was conducted in three provinces in the Atlantic Coast: Atlantico, Bolivar,and Cordoba in colombia: It consisten of a interview and clinical mouth examination of each individual in Dentistry Schools (Cartagena and Barranquilla); Health Centres (Hospitals, clinics and others), privates Dentists and House-to-House surveys.

he population was screened completely and available tobacco users aged 15 years and over. The association between oral examination was being explained.
Histopathologycal dates were collected from different Departments of Pathology of the distint states.

RESULTS

The Table 1, shows the distribution of smokers to age group and sex in different provinces.

TABLE 1

	MALE			FEMALE		
Age Group	Cigarette	Cigar	Calilla	Cigarette	Cigar	Calilla
Under 20	3.410			1.700		
21-30	4.820			2.310	410	
31-40	4.720	910		2.340	722	100
41-50	3.610	1.120	190	3.750	260	990
51-60	4.420	1.050	110	3.110	450	1.120
60 and above	2.620	320		1.700	192	604
TOTAL	23.600	3.400	300	15.910	1.934	2.814

The Table 2 shows the Geographic distribution of smokers.

TABLE 2

	MALE		FEMALE	
Tobacco Type	Urban	Rural	Urban	Rural
Cigarette	21.100	2.500	13.900	2.010
Cigar	2.100	1.300	732	1.202
Calilla		300	390	2.424
TOTAL	23.200	4.100	15.022	5.636

the Table 3, shows the distribution for habit of different tobacco type and geographyc distribution.

TABLE 3

	MALE				FEMALE			
	URBAN		RURAL		URBAN		RURAL	
Tobacco Type	Conven tional	Rever se	Conven tional	Rever se	Conven tional	Rever se	Conven tional	Rever se
Cigarette	21.100		2.500		13.600	300	610	1.400
Cigar	2.100		960	340	413	319	284	918
Calilla			120	180	37	353	134	2.290

TABLE 4

Number patients examined, Geographical Zone and Clinical Diagnosis

Province	Urban	Rural	Leukoplakia	Palatal Changes	Carcinomas
Atlantico	9.000	1.000	1.0%	1.2%	0.9%
Bolivar	23.982	3.212	3.4%	4.8%	1.4%
Cordoba	7.820	4.440	2.0%	9.4%	0.1%

TABLE 5

SQUAMOUS CELL CARCINOMA

Province	Male	Female
Atlantico	111	136
Bolivar	553	703
Cordoba	97	110
Sucre	57	65
Magdalena	45	61
Antioquia	338	384

SMOKERS

Conventional		Reverse	
Male	Female	Male	Female
530	374	218	653

SQUAMOUS CELL CARCINOMA

	Hard Palate			Soft Palate		
	Male	Female		Male	Female	
ATLANTICO	16	53		8	5	
BOLIVAR	73	184		49	97	
CORDOBA	17	33		7	17	
MAGDALENA	4	10		3	11	
SUCRE	14	33		5	5	
ANTIOQUIA	40	81		11	9	
T O T A L	164	394	(558)	83	144	(227)

SQUAMOUS CELL CARCINOMA REVERSE SMOKERS

	Hard Palate			Soft Palate		
	Male	Female		Male	Female	
ATLANTICO	6	50		4	4	
BOLIVAR	34	134		18	55	
CORDOBA	8	31		3	16	
MAGDALENA	4	9		2	10	
SUCRE	12	32		1	4	
ANTIOQUIA	4	20		1	4	
	68	276	(344)	29	93	(122)

SQUAMOUS CELL CARCINOMA

	Tongue		Base		Border		
	Male	Female	Male	Female	Male	Female	
ATLANTICO	15	14	32	26	-	-	
BOLIVAR	45	35	105	139	22	28	
CORDOBA	25	12	3[illegible]	8	3	4	
MAGDALENA	10	8	3	8	2	3	
SUCRE	2	3	8	5	6	2	
ANTIOQUIA	48	43	52	48	11	21	
	145	115	203	234	44	58	(799)

SQUAMOUS CELL CARCINOMA REVERSE SMOKERS

	Tongue		Base		Border		
	Male	Female	Male	Female	Male	Female	
ATLANTICO	2	8	14	15	--	--	
BOLIVAR	8	7	29	67	5	1	
CORDOBA	1	6	2	7	1	3	
MAGDALENA	4	7	2	7	-	3	
SUCRE	1	2	4	4	2	-	
ANTIOQUIA	7	8	8	15	-	-	
	23	38	59	115	8	7	(250)

S M O K E R S

Traditional			Reverse		
Male	Female		Male	Female	
530	374	(904)	218	653	(871)
		34.2%			33.0%

Total Palate	Reverse Smoking
771 (29.0%)	466 (18.0%)

Total Tongue	Reverse Smoking
799 (30.2%)	250 (9.5%)

INCIDENCE OF ORAL CANCER IN ATLANTIC COAST
IN COLOMBIA

Year	Male	Female	Total
1.960	27	25	52
61	29	29	558
62	33	43	76
63	15	25	40
64	35	40	75
65	42	51	93
66	34	35	65
67	34	26	60
68	33	50	83
69	42	40	82
1.970	46	52	98
71	45	78	123
72	40	59	99
73	46	60	106
74	40	59	99
75	49	59	108
76=	68	71	139
77	45	57	102
78	43	40	83
79	44	39	83
1.980	66	55	121
81	46	47	93
82	61	71	132
88	55	62	117
84	36	45	81
85	49	50	99
86	29	33	62
87	10	12	22
88	15	16	31

DISCUSSION

The principals objectives of this study were to determine smoking habits on the region, it emphasizing in the custom of reverse smoking practiced in the Atlantic Coast of Colombia.

Motivaded by many reports that oral cancer in one of the most frequently encountered cancers in others parts of the world, with the same habit, also, to determine the most frequent lesions in the relationship to smoking habit and variables studies were Age, Sex, Habits, Location of Lesions, Geographical Zone.

First it was revised the files of Departments of Pathology of different states or provinces of the Caribbean or Atlantic Coast in Colombia. In these archives we found the prevalence and incidence of oral cancer and his relation with dates of tabacco habits.

The habit of tobacco smoking were strongly associated with precancerous and oral cancer lesions.

Specially on reverse smokers was found to be very high respect to palatal lesions and carcinoma of hard palate.

We also appears to very important, as noted in this phase, is the lateness with which the patients present themselves for medical consultation. Most patient seek medical help, only the disease is advanced.

We found also, that oral cancer patients coming the hospital from different State, provinces and rural area, constitute only a small group of all cancers in the population.

Population is not conscient of the oral problems relationed with tobacco besides of their low economical situation.

On the other hand, the health services atention in the officials centres, are only dental curative. Thus, patientes consultant only for pain or dentals problems.

Certainly lesions of the oral cavity should be and can be detected earlier by a preventive program, emphasising on educational aspects.

Since most oral cancers are preceded by precancerous

lesions, education on tobacco habits should be feasible and effective approach to primary prevention of oral cancer.

We are conscient of this, and thus, we projected the study for clinical aspects, upon basis of clinical mouth examination for to detected incipients lesions or stablished lesions and to can to guide to patient.

Follow up patients it is difficult and it is very expensive furthermore, there is not finances for do it.

For individuals with oral lesions, clinical information are included in his card. Some lesions which looked were biopsed or the patient were refered to Dentistry School or Hospital.

These results theredore represent the distribution of the disease in several pathology departments records, and not an incidence or prevalence study.

The most commontly involved site were palate and Tongue, corresponding to habits of region.

A 34.25 of all carcinomas involved the oral cavity were associated with traditional smoking habit, and a 33.0%

were associated to reverse smoking.

NEW PROJECT

Actually we are ejecutying a study with a Stereomicroscope for determine a method effective in early detection of oral Cancer.

Stereomicroscopic examination of the Uterine Cervix (colposcopy) is now a rutine procedure contributing to the detection of malignancy and premalignancy in that site.

We will have an opportunity to evaluate the rol of stereomicroscope in the examination of normal and abnormal oral tissues.

The stereomicroscope provides a non-invasive means of studying epihelial-mesenchymal interrelationships in patients by emphasising the pattern and distribution of the terminal vascular network. This is clearly seen in non-keratinised sites or in keratinised areas in which there are a minimum of epithelial cell layers between the apices of the conective tissue papillae and the surface.

The distribution and appearance of capillaries are altered in conditions effecting the normal architecture of the epithelial rate ridge an epitelial-connective tissue interface, thus making it possible to asses premalignant lesions in a similar manner to thatr in colposcopy clinics.

However, this method of examination is not an alternative to histological examination os such lessions.

Hypothesis:

- Stomatoscopy permits early detection of premalignant lesion of the oral cavity.

- Toluidine blue stained increase the sensityvity of the method.

- The method reduces both the frecuency of infiltrating squamous cell carcinoma at the ortal cavity and associated medical cost.

The patients will be examined and screening usin the following methods.

Simple oral examination. 2-stomatoscopy 3-Amplied stomatoscopy (use od Acetic Acid). 4-Toulidine blue

staining plus stomatoscopy.