

NATIVE COLOMBIA: CONTACT, CONQUEST AND COLONIAL POPULATIONS

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Los estudios que se han realizado sobre la historia demográfica de Colombia durante las tres últimas décadas se han visto influidos por las ideas, métodos y planteamientos de Woodrow Borah. Discutiremos tres aspectos que él y Sherburne Cook han tenido en cuenta a lo largo de sus trabajos sobre la demografía latinoamericana: el volumen de la población nativa en vísperas del contacto con los europeos; los efectos del clima y de la altitud en el declive de la intensidad demográfica de los diferentes grupos; y el impacto en la población nativa de las enfermedades procedentes del Viejo Mundo. Examinamos la información disponible en el altiplano y en la zona costera de Colombia y, en dicho contexto, valoramos cuestiones que han surgido recientemente con relación a los niveles de nutrición y salud de la población nativa antes de la conquista europea.

PALABRAS CLAVES: *Colombia, Woodrow Borah, población nativa, contacto europeo, descenso de población, nutrición, salud.*

Woodrow Borah's work and that which he did with Sherburne Cook demonstrated the potential for enhancing critical knowledge of Latin America's past by clarifying hypotheses and methods involved in reconstructing contact population numbers, and carefully tracing their trajectory through the colonial period, using many different sorts of pertinent administrative records. Borah advised full investigation of demographic data directing attention to employing:

... contemporary testimony of all kinds ... in archives and libraries ... historical evidence [that] requires ... the application in full of very elaborate and exacting techniques of verification, painstaking reading, interpretation in the

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light of close knowledge of administrative systems and units of measurement used at the time, and of cross comparison¹

We explore this guide and legacy with respect to Colombian data, and will also look into a question that Cook and Borah raised regarding whether different types of climate affected the impact of contact and conquest on native populations. To do so we have grouped the many diverse ecological zones into two broad categories – lowlands and highlands. It becomes quite clear from a broad multi-regional perspective that contrary to their suggestion (and our own expectation) Colombian native populations everywhere, no matter the altitude and climate, experienced severe decline in the first thirty years of European contact. We then examine whether the rapid decline can be attributed primarily to the impact of contact, conquest, and newly introduced disease, or—as another hypothesis under consideration by a number of scholars suggests—to such pervasive inadequate nutrition and poor health among natives when Europeans arrived that contact and subjugation were simply the final causes of their decimation. The evidence that we have from Colombia at this point, as we will discuss, gives more weight to the first rather than the second view. Borah has been a major guide in much of the contemporary scholarship that we draw on. His influence can be seen in many excellent studies that are cited here².

Colombian studies have not been directed toward answering specific questions typically associated with demographic research, such as fertility and mortality, mate selection, age at marriage, births, survival rates, or life expectancy. Population data at the core of works on New Granada are rich, but limited almost entirely to counts of adult males classified by Spanish conquistadores, officials and chroniclers as *tributarios* or *utiles*, individuals who could provide labor and pay head taxes, and to related documents on economic issues.

Two important methodological issues are raised by work on Colombian populations in the contact and colonial periods. The first has to do with units of study

¹ Woodrow BORAH, «The Historical Demography of Aboriginal and Colonial America: An Attempt at perspective», William DENEVAN, (ed.), *The Native Population of the Americas in 1492*, Madison, University of Wisconsin, 1976 pp. 24, p. 13-34.

² For example, German COLMENARES. *Encomienda y población en la Provincia de Pamplona (1549-1650)*, Bogotá, Universidad de los Andes (multilith), 1969; *La Provincia de Tunja en el Nuevo Reino de Granada (1539-1800)*, Bogotá, Universidad de los Andes (multilith), 1970; *Historia económica y social de Colombia 1537-1719*, Cali, Universidad del Valle, 1973. Hermes TOVAR PINZÓN, «Estado actual de los estudios de demografía histórica en Colombia», *Anuario Colombiano de Historia Social y de la Cultura*, Vol. 5, Bogotá, 1970, pp. 65-140; Hermes TOVAR PINZÓN, Hermes TOVAR M., Camilo TOVAR M. and Jorge TOVAR M., (eds.), *Convocatoria al poder del Número*, Bogotá, Archivo General de la Nación, 1995. Julián RUIZ RIVERA, *Encomienda y mito en Nueva Granada*, Sevilla, Escuela de Estudios Hispano-Americanos, 1975. María Angeles EUGENIO MARTINEZ, *Tributo y trabajo del Indio en Nueva Granada*, Sevilla, Escuela de Estudios Hispano-Americanos, 1977.

(on which historians and anthropologists tend to differ), and the second with limitations inherent in the data. Most historians have looked at native populations in the context of Spanish political divisions (*provincias*, *gubernaciones*) which often encompassed more than one ethnic group. Anthropologists and a few historians are more focused on natural regions, and on specific ethnic groups. In both cases analysis of the sixteenth century material is affected by factors emanating from the colonial condition as well as from traditional native practices. Ascertaining Chibcha numbers in the Cundi-Boyacense highlands before the 1590s was made very difficult by *encomenderos*' opposition and sometimes their intervention. Furthermore, Spanish surveys focusing on individual communities and assuming permanent residence within them gave the bias to patrilineal reckoning of descent and patrilocal residence, when in fact the Chibcha had matrilineal descent, virilocal marital residence, and eventual avunculocal preference. Men lived in their fathers' community until the latter's death at which time they returned to their mothers' community. Where to count people? They moved from community to community despite *encomendero* and government officials' opposition and threats. Patrilineality and patrilocality came to be more widely practiced in the late colonial period. There was also a great deal of movement within the region from the sixteenth century onward as people sought to escape local hardships and find better living conditions. Newcomers appear not to have been counted in their host communities. Chibcha who left the region appear to have been lost permanently to their *pueblos* of origin. The combined pressures of loss of land, tribute levies, and labor demands in agricultural, city and mining work steadily drove natives out of their communities from the end of the sixteenth century to the end of the colonial period³.

Researchers' use of tributary counts, the best records available, for reconstructing total population is similarly beset by pitfalls. Tributaries were counted for tax and labor purposes, and do not constitute a strictly defined demographic construct. In Santa Fe and Tunja tributaries were men between the ages of 17 and 54 years, in other regions between the ages of 14 and 45, or 14 and 50. Men exempted from tributary status (native officials and *reservados*, the ill, disabled, and a surprisingly large number of singers in the church) increased with time in the Sabana de Bogotá to the point where in many communities a significant proportion of tribute-age men were no longer counted as tributaries. In six communities in 1636/40 between 4.5% and 21.7% of all men were tribute-exempt, and in 1804/06 between 13.3% and 31%. The community with 4.5% of its men exempted in 1636/40 had 31% exempt in 1804/06. Furthermore Spaniards and Chibcha manipulated the tributary category for their own purposes in different ways at different times. Tributary counts can not

³ Juan VILLAMARÍN and Judith VILLAMARÍN, «Chibcha Settlement Under Spanish Rule 1537-1810», David J. ROBINSON, (ed.), *Social Fabric and Spatial Structure in Colonial Latin America*, Syracuse, Dellplain Latin American Studies, 1979, pp. 25-84; «Colonial Censuses and tributary lists of the Sabana de Bogotá Chibcha: Sources and Issues», ROBINSON, (ed.), *Studies in Spanish American Population History*, Boulder, Westview Press, 1981, pp. 45-92.

be assumed to be unchanging, consistent categories on which to reconstruct population via multipliers⁴, nor can multipliers themselves be taken as more than arbitrary until we have wider and more detailed sampling of household composition or averages⁵. Censuses taken in the sixteenth century, for example, should not be assumed to relate to nuclear families, as it is known that other kin as well as non-related people constituted the unit. The difficulty is less in the studies that reconstruct native figures and that clearly indicate what subtractions, additions, interpolations and other operations have been applied to extant counts, than in the use of results by other works where they tend to be treated as harder data than they are. The same can be said of reconstruction of other native groups' population in Colombian territory.

All these observations fall within the recommendations that Borah made regarding the need to put diligent care not only to numbers and categories but also to the socio-political, economic, and ecological frameworks within which numbers and rates can be interpreted. Further benefits might be gained, as McCaa has shown for México by shifting units of analysis from households to individuals including attention to age, a factor, he points out that followers of French family reconstitution and English household and family studies have ignored⁶. Unfortunately most visitas that we have seen were not carried out by visiting the different sections of a community, but by taking a declaration in a controlled place, and arranging information according to a nuclear family format. When ages were registered they were reported impressionistically. Investigators of parish records will not often find them complete or orderly but they are, nonetheless, useful with respect to information on age, marriages and deaths. The combining of local and regional demographic histories in a wider context of socio-cultural and economic conditions is what is needed, along with the inclusion of studies of colonial European, African and «mixed» populations.

Cook and Borah are considered maximalists, or high counters of populations at the time of European contact. They estimated that there were between 7 and 8 million people on Hispaniola, and that in Central Mexico there were more than 27.6 million at the time the first Europeans arrived. According to them one could consider between 18 million and 30 million a reasonable range⁷. Meticulous in

⁴ Jaime JARAMILLO URIBE, «La población indígena de Colombia en el momento de la conquista y sus posteriores transformaciones», *Anuario Colombiano de Historia Social y de la Cultura*, Bogotá, Vol. 2, 1964, pp. 239-293. Juan FRIEDE, «Algunas consideraciones sobre la evolución demográfica en la Provincia de Tunja», *Anuario Colombiano de Historia Social y de la Cultura*, Vol. 3, Bogotá Universidad Nacional, 1965, pp. 5-19. Robert MCCAA, «Families and Gender in México: A Methodological Critique and Research Challenge for the end of the Millennium», [Http://www.hist.umn.edu/~mccaa/Cartagen/cartagen.htm](http://www.hist.umn.edu/~mccaa/Cartagen/cartagen.htm). July 7, 2002, p. 20.

⁵ MCCAA [4].

⁶ *Idem*.

⁷ Sherburne F. COOK and Woodrow BORAH, *Essays in Population History: Mexico and the Caribbean*, Vol. I, Berkeley, University of California Press, 1971, pp. 40, 115. Henry Dobyns is

their work, they made their assumptions and sources clear, as well as their methods of calculation, and some discussion of the limitations of their estimates. Their figures have been praised, criticized and adjusted. Some commentators have been outspokenly hostile, as is Henige arguing that their work had no foundation. Others, like McCaa, appear to be skeptical of sources and particularly of calculations. But after discussing Cook and Borah's numbers and other authoritative estimates McCaa says, «It is clear that before the Spanish conquest the population of the Mexican subcontinent was large, certainly 5 million, probably 10, and perhaps 15 million, if not 20 to 25 million»⁸.

What can we say about Colombian native population at the time of European contact? It was certainly 2 million, probably 3 million, perhaps 4 million, if not 8 or 9 million. Colmenares suggested 3 million people after a careful review of published and archival materials, among them the visitas carried out during the sixteenth century and a very important account by chronicler López de Velasco of adult male tributaries based on reports written in the 1550s and 1560s. Colmenares discusses limitations that the data impose on analysis, pointing out that counts were made only in areas under European control, and that there are problems in the accuracy of the ledgers. He is clear about his methods of estimating total population, and the assumptions that he makes in calculating rates of decline and population figures at the time of contact in the different regions of Colombia⁹. Colmenares acknowledges that the reevaluation of population figures on the basis of data from administrative and fiscal records was thrown open by the pioneering works of Borah and Cook. As he noted «hasta entonces se había desdénado el material».¹⁰ He found that working with such data enabled researchers to tackle problems that appeared previously «to be insoluble».

Tovar Pinzón, with two more decades of work in Colombian and European archives, as well as extensive reading of secondary sources, calculates that total population in Colombia was 8 million or more in 1500 AD. His classification of regions and their respective numbers are as follows:

also considered a high counter. See Henry DOBYNS, «Estimating Aboriginal American Population», *Current Anthropology*, Vol. 7, 1966, pp. 395-449.

⁸ Robert MCCAA, «The Peopling of Mexico from Origins to Revolution», Michael R. HAINES and Richard H. STECKEL, (eds.), *A Population History of North America*, Cambridge, Cambridge University Press, 2000, pp. 241-304, 257. David HENIGE, *Numbers from Nowhere The American Indian Contact Population Debate*, Norman, University of Oklahoma Press, 1998. Nicolás Sánchez-Albornoz gives a very good and balanced review, in SANCHEZ-ALBORNOZ, *La Población de América Latina. Desde los tiempos precolombinos al año 2000*, Madrid, Alianza Editorial, 1973, pp. 53-57.

⁹ COLMENARES [2] 1973, pp. 70, 71, 60-75. Juan LOPEZ DE VELASCO, *Geografía y Descripción Universal de las Indias*, Madrid, Atlas 1971 [1574], pp. 179-217.

¹⁰ COLMENARES [2], pp. 53, 59, 62, 69.

POPULATION

Caribbean	2.565,376
Eastern Andes	2.423,728
Western Andes	3.170,160
Magdalena River Valley	95,000
Total	8.254,264

Tovar Pinzón adds that if populations of the Llanos, Amazonia, the Pacific Lowlands and the area of present day Chocó were included in the tabulation, the total would be over nine million people. Although he documents his sources, he has not yet published his complete analysis including calculation methods, matters he addressed previously in a general manner¹¹.

Colmenares and Tovar Pinzón have not only reevaluated population figures but also perceptions that were previously held about pre-contact populations in Colombia. In a perspective that we share they found that many groups had quite complex socio-political organization and economies based on intensive agriculture that could yield sufficient goods to support large populations. Early narratives, documents and visitas provide information for inferring that very large, settled populations occupied many parts of today's Colombia. Upon further investigation one finds evidence for more than a hundred independent complex societies, chiefdoms, many of which had hereditary paramount chiefs and multiple levels of political hierarchy. Labor service and tribute were established, and there was bountiful production of food and products for exchange including gold, blankets, and precious stones. Extensive trade existed within and among regions¹².

Chiefdoms throughout Colombia and South America occupied a great range of environments – highland and lowland basins, marshlands, desert coasts, islands, lagoons, floodplains and piedmont. They appear to have been very efficient systems in their utilization of internal and external resources as well as in costs and benefits for the communities that composed them. A number of these polities were surprisingly stable, persisting for hundreds of years, some with populations of several hundred thousand. Population growth, fission and reorganization in response to internal and external factors reshaped them over long periods of time. Chiefdoms differ from states and empires such as those of Meso-

¹¹ Hermes TOVAR PINZÓN, «La Frontera del Nuevo Mundo y el poblamiento de la Nueva Granada», TOVAR PINZÓN, *et.al.*, [2], pp. 22, 17-59; [2] 1970.

¹² Juan VILLAMARÍN and Judith VILLAMARÍN, «Chiefdoms: The Prevalence and Persistence of 'Señorios Naturales' 1400 to European Conquest», Frank SALOMON and Stuart SCHWARTZ, (eds.), *The Cambridge History of the Native Peoples of the Americas. South America*, Vol. III, Part I, Cambridge, Cambridge University Press, 1999, pp. 577-667.

america and the Central Andes in that states place greater labor burdens on populations than do chiefdoms. In addition commoners' access to food and goods in states may have been reduced as a result of greater inequality between population sectors. Increasing centralization of power in the state required a managerial apparatus to move people and goods, enforce codified laws, support those who built monumental constructions, public works, art and made up armies. There were a great number of chiefdoms in pre-contact Colombia, but many disappeared during the first decades of confrontation with the Europeans. The demographic information that remains on them allows approximations only, not exact numbers¹³.

In the following pages we will consider the data available regarding Colombian populations at the time of conquest and afterward. We have organized the information very broadly with respect to two major ecological zones of habitation, lowlands and highlands, giving us a means of exploring Borah and Cook's questions regarding the effect of climate and elevation on population decline. They saw that data then available on particular areas of Colombia indicated that groups living in higher cooler regions experienced lower rates of decline than those in warmer ones¹⁴. Even though other factors may well have been involved, as they noted, their interpretation merits follow up through the data that we have at hand.

About three fourths of Colombia lie in lowlands at elevations of no more than 500 m. where rain averages between 1000 mm and 3000 mm annually, and temperatures generally are above 24° centigrade. In that category are the Eastern lowlands (Oronoquía and Amazonia), Pacific Lowlands, Caribbean, the Cauca-Patía basin, and the Magdalena River Valley. We draw on the classic geographic descriptions of Robert C. West and Ernesto Guhl to provide information on physical characteristics of each region¹⁵, and on the studies of historians, anthropologists and other scholars who have provided historical demographic data.

Very little is known of the native populations at contact or afterward in the Eastern two thirds of the country that encompasses lowland plains with tropical grassland vegetation (Orinoco Llanos) and rain forest (Amazonia). Groups first encountered by Europeans in the Llanos varied greatly in political complexity. Natives who came into direct contact with Spaniards eventually became encomienda Indians or were organized in church settlements, or missions. About 2.000 were in encomienda at the end of the sixteenth century. Their numbers declined through the seventeenth century. Close to 15.000 native-Americans were in missions in the eighteenth century. In 1778, 73% of the 20.892 inhabitants

¹³ *Idem*.

¹⁴ COOK and BORAH [7], pp. 411-429. The authors' focus was on the cooler higher provinces of Tunja and Pamplona (1800 m – 2800 m) in contrast to warmer regions such as Cartago (1000 m-2500 m.)

¹⁵ ROBERT C. WEST, «The Geography of Colombia», CURTIS WILGUS, (ed.), *Contemporary Colombia*, Gainesville, University of Florida Press, 1962, pp. 3-21; and ERNESTO GUHL, *Colombia: Bosquejo de su Geografía Tropical*, 2 Vols, Bogotá, Instituto Colombiano de Cultura, 1975-1976.

accounted for in the Llanos were mission Indians, 26.5% were white and mestizo, and 0.5% were slaves¹⁶. The demography of Amazonia remains to be done.

Historical demography of the Pacific lowlands is almost totally lacking. There has been some work on identification of 23 ethnic groups. Chocó had no populations so large as those on the coast or in Central and Southern Colombia. It is known that the smallpox epidemic of 1566-1567 wiped out entire native communities. Romoli suggests that by 1573 there were 3.000 tributaries and 20 years later in 1593, only 1.142¹⁷.

The Caribbean, the third major region of the lowlands, is low-lying with flat basins and undulating hills that rise to 300 m. An isolated triangular shaped mountain massif, the Sierra Nevada de Santa Marta, pierces the northeast section about 40 kilometers inland from the coast. Surrounded by tectonic depressions, and measuring about 150 k on each side, the massif has peaks that rise close to 5800 m above sea level. With the exception of the Sierra Nevada, the Caribbean region is hot, with average temperatures over 27° C. It has two well-defined seasons: one with rain (May to October), and the other humid but without rain (November to April). It includes the extensive savannas of Sinú, Bolivar, and the Lower Magdalena, with a number of annually flooded areas and marshes. There were complex societies in the region for several hundred years before European contact. Although a systematic treatment of the area's prehistory remains to be written, several hundred archeological sites have been established.

Documents tell us that Europeans found densely populated areas with very complex societies in the Caribbean region at first contact -- Cueva, Urabá, Tolú, Cenú (Cenú, Fincenú, Cenúfana), Malibú, «Tairona», Guanebucan, Chimila, Aruaco and Macongana¹⁸. Studies that focus on the social history of the region offer some population data, but postdate early periods of large native losses¹⁹ Most

¹⁶ Jane M. RAUSCH, *A Tropical Plains Frontier, The Llanos of Colombia 1531-1831*, Albuquerque, University of New Mexico Press, 1984, pp. 11, 8-11, 14-15, 17-20. The increase in numbers does not represent natural growth but European and missionaries' expansion into the area. Mariano USECHE LOSADA, *El proceso colonial en el alto Orinoco. Río Negro (siglos XVI a XVIII)*, Bogotá, Banco de la Republica, Fundación de Investigaciones Arqueológicas Nacionales, 1987.

¹⁷ Kathleen ROMOLI, «El Alto Chocó en el siglo XVI», *Revista Colombiana de Antropología*, Vol. 19, Bogotá, 1975, pp. 9-38; «El Alto Chocó en el siglo XVI, Parte II. Las gentes», *Revista Colombiana de Antropología*, Vol. 20, 1976, pp. 25-77; «Apuntes sobre los pueblos autóctonos del litoral colombiano del Pacífico en la época de la conquista española», *Revista Colombiana de Antropología*, Vol. 12, 1963/1965, pp. 259-292.

¹⁸ VILLAMARÍN and VILLAMARÍN [12], pp. 603-707. María del Carmen BORREGO PLA, *Cartagena de Indias en el siglo XVI*, Sevilla, Escuela de Estudios Hispano-Americanos, 1983. Borrego Plá (p. 48) misinterpreted the data on these populations. She wrote, «...eran de cultura poco avanzada, apenas usaban vestidos – los hombres cubrían sus genitales con unas bandas de algodón mientras las mujeres iban totalmente desnudas»

¹⁹ BORREGO PLÁ [18], pp. 48-54, 161-162, 171-181, 215-216. COLMENARES [2], 1973, pp. 70-71. A. MEISEL ROCA, «Esclavitud, mestizaje y haciendas en la provincia de Cartagena: 1533-1851»,

figures are global, with little information on regional development or on specific ethnic groups. For example in 1544 the local bishop stated that there were 40.000 Indians in the province between the Atrato and Magdalena Rivers, an area corresponding in large part to the Province of Cartagena²⁰.

Ruíz Rivera has studied the region, and found data in an incomplete document of the mid-1560s indicating that there were 5,345 tributaries in 123 settlements of Cartagena and Tolú. He estimates that prior to contact tributaries would have numbered more than 25.000, and the total population at least 100.000, decline having occurred since Europeans began incursions into the region in 1500²¹ Gómez Pérez also notes that even by 1533 native populations had been greatly affected by early Spanish encounters and epidemics, which together decimated a number of pueblos. Encounters with European expeditions, as well as indirect disease transmission through other native peoples who traded with the Spaniards took their toll. In the case of Cartagena in addition to disease and raids there also was a very disruptive traffic of Indian slaves that persisted into the 1530s. In May and June of 1536, for example, 179 men, women and children were sold²².

Numbers continued downward in Cartagena Province. In the Visita of 1610, 1.344 tributaries were reported (with a total population of 5.716). In 1633 there were 1.060; in 1663, 926; and in 1667, 894. In 1675 there was a slight increase, tributaries numbering 997, and total population 5.842. Ruíz Rivera is careful to point out that it is difficult to count all communities since some were gathered into Spanish-held estancias²³.

There is scant information on other populations, such as in the extensive savannas of the Sinú, Bolívar and the Lower Magdalena. Had the population of the Caribbean region in total been so large as that postulated by Tovar Pinzón — over 2 and one half million, or was it closer to one quarter of a million as Colmenares proposed? Tovar Pinzón points out that there is little information for the first fifty years of Spanish contact when coastal peoples suffered repeated incursions, violence, plunder and new diseases. Some populations declined very rapidly. The Cenú people almost disappeared within a short time of contact (1510-1535). They were described when first seen as having large numbers, some living in nucleated areas (particularly the Finzenú) with streets, plazas and well built houses. Abun-

Desarrollo y Sociedad, Vol. 4, Bogotá, pp. 229-277. Trinidad MIRANDA VÁZQUEZ, *La gobernación de Santa Marta (1570-1670)*, Sevilla, Escuela de Estudios Hispano-Americanos, 1976, pp. 17-47.

²⁰ Julián RUIZ RIVERA, *Los Indios de Cartagena bajo la administración Española en el siglo XVII*, Bogotá, Archivo General de la Nación, 1996, p. 59.

²¹ *Ibidem*, pp. 18-22, 60.

²² María del Carmen GÓMEZ PÉREZ, *Pedro de Heredia y Cartagena de Indias*, Sevilla, Escuela de Estudios Hispano-Americanos, 1984, pp. 213-259, 231-234.

²³ RUIZ RIVERA, [20], pp. 29-34, 49-50, 52-53, 59-81.

dant maize, beans, sweet manioc, sweet potatoes, and fruits had been observed, and it was reported that a variety of animals were hunted and fished²⁴.

Although there is convincing evidence that there were large populations in the region, all that remained in the second half of the sixteenth century in Cartagena, for example, were small, dispersed, and fragmented groups. In the province 35 out of 50 settlements had 40 or fewer tributaries. Some had 9 or less. In Tolú 42 of 73 settlements had fewer than 40 tributaries and five had 9 or less²⁵. Decrease was intensified as time passed by natives' loss of access to resources, and by the exploitation of their labor. From a minimalist perspective population probably was over 1 million at contact. The region's large toll was no doubt affected by its being a long corridor from Urabá to La Guajira connecting the Caribbean and the interior. It was also a place where long after contact Europeans continued their search for gold, pearls other treasures, and through which they transported goods and people.

The Cauca-Patía basin, the fourth major region of the lowlands, is located between the western and central cordilleras. The northern section of the Cauca River (1.015 k long) contains a narrow, deep and highly dissected area stretching for 300 k and extending into the Caribbean lowlands. In it there are very small, level areas. Average temperatures are between 20°C and 40°C depending on elevation. The Cañon del Cauca and middle Cauca regions have soils enriched by volcanic ash, wide variations in relief and in temperatures, rain and vegetation. El Valle del Cauca in the middle of the depression has very rich alluvial soils. It measures between 16 k and 25 k wide, and is between 200 and 225 k long from Cali to Cartago. Average temperatures are 22°C – 23° C and rainfall is between 900 and 1110 mm annually.

Complex societies in the northern section included the Norisco, Pequí, Buriticá, Hevéjico, Curome, Torvura, Pueblo Llano, Murgia, Iraca, Cori, Cartarma Caramanta, Anserma, Arma, Paucura, Pozo, Picara, Carrapa and Quimbaya. Of these only the Quimbaya in the Province of Cartago have been studied in any detail. Friede estimated that tributaries numbered 15.000 at the time of conquest. Tovar Pinzón reviewed Quimbaya population figures, and estimated that there were 26,516. By 1628 only 69 tributaries remained, and Quimbaya numbers included remains of other populations such as the Carrapa and Cacena-coa²⁶. Rapid decline was characteristic of peoples along the northern section of the Cauca River. Between 1552/60 and 1606/08 their numbers dropped precipi-

²⁴ TOVAR PINZÓN, «El Caribe Colombiano en la Historia del Siglo XVI», Hermes TOVAR PINZÓN, (ed.), *Relaciones y visitas a los Andes. Siglo XVI*, Vol. 2, Región del Caribe, Bogotá, Biblioteca Nacional, 1993, pp. 17-80; TOVAR PINZÓN, *La estación del miedo o la desolación dispersa. El Caribe Colombiano en el Siglo XVI*, Bogotá, Editorial Ariél, 1997, pp. 51-135.

²⁵ RUIZ RIVERA, [20], pp. 19-22.

²⁶ Juan FRIEDE, *Los Quimbaya bajo la dominación española. Estudio documental (1539-1810)*, Bogotá, Banco de la República, 1963, pp. 20, 62-63, 96-98, 123-124, 127, 175-176, 180-181, 184, 252-253. TOVAR PINZÓN [2], pp. 80, 78-91. COOK and BORAH, [7].

tously in areas where cities had been founded – in Anserma by 92%, in Arma by 94%, and in Almaguer by 97%²⁷.

The middle valley of the Cauca River was inhabited by Lile who lived where the city of Cali is now located. They lost a great many people in resisting the Spaniards, and many starved as a result of deliberately not planting crops so as to withhold food and force the Europeans out. Invading mountain groups delivered the final blows to Lile society in a graphic example of how Spanish contact altered the indigenous balance of power. Tovar Pinzón writes that Cali's native population numbered 30.000 in 1536, and only 2.000 by 1582²⁸. Other peoples of the middle valley have yet to be studied.

Tovar Pinzón has reported tributary population in such a way that we can separate numbers of Indians in the Cauca-Patía depression from his category «Western Andes». Tributaries in the Cauca-Patía depression numbered 440.520 in 1536, declined to 46.877 in 1559 and to 17.900 in 1582. Between 1536 and 1582 there was a probable total decrease of 96%²⁹. At the time of contact people in different areas of the region were at war with other indigenous groups. Warfare was exacerbated by the presence of Europeans and the confrontation with them in addition to their traditional enemies. Epidemics and hunger worsened the situation³⁰. Cartago's fertile soils made it very attractive for Spanish settlement and colonization. As a result native people were overworked in agriculture and in gold mining, contributing to their particularly rapid decline. In other regions as well Indians were worked excessively in gold mining. Along with unhealthy conditions and inadequacy of food supplies this labor was a major cause of rapid decline³¹.

The Cauca depression corresponds to a large section of Tovar Pinzón's Western Andes, which he calculates to have had 3.1 million people at contact. Colmenares estimated the number at between 1.352.000 and 1.396.000. Population at contact probably was within the range set by the two³².

The last tropical region to be discussed here is the Magdalena River Valley. As the river enters the flat, broad valley of Garzón it drops from 1000m to 500 m. Humidity decreases and temperatures increase, averaging 24° C. The area is highly eroded and dissected. Except along river banks its agricultural potential is limited. The valley extends more than 100 k, almost until Neiva, where it drops to 500 – 300 m above sea level. This part of the valley is arid and hot (24° C to 30° C), and also highly eroded. Elevations decline continuously from the Saldaña

²⁷ Silvia PADILLA, M. L. LOPEZ-ARELLANO and A. GONZÁLEZ, *La encomienda en Popayán. Tres estudios*, Sevilla, Escuela de Estudios Hispano-Americanos, 1977, pp. 47, 49, 50.

²⁸ TOVAR PINZÓN, [24], p. 72. Also by Tovar Pinzón, [2], p. 80.

²⁹ TOVAR PINZÓN, [24], p. 72

³⁰ VILLAMARÍN and VILLAMARÍN [12], pp. 601-602. TOVAR PINZÓN [2], pp. 88-91.

³¹ Zamira DÍAZ LÓPEZ, *Oro, sociedad y economía. El sistema colonial en la gobernación de Popayán: 1533-1733*, Bogotá, Banco de la República, 1994, pp. 183, 155-164.

³² TOVAR PINZÓN, *et al.*, [2], p. 22. COLMENARES, [2], 1973, pp. 69-70.

River to the Doña Juana, until at the port of La Dorada they descend to an altitude of 180 m. The region, about 250 km long has higher temperatures and greater rainfall than to the south. At Honda the average temperature is 29.5° C, and rainfall about 1850 mm a year. Vegetation changes from low scrub and grassland to humid rain forest. Soils are fertile with good agricultural potential.

Large indigenous groups lived along the Magdalena River, the primary passageway between the coast and the interior. Very little is known about these people who were forced to supply large numbers of rowers to the Europeans. The Lower Magdalena region was inhabited by complex Malibú chiefdoms, some of which were beginning to settle in the Caribbean lowlands at the time of European arrival. To the south in the Cundi-Tolimense and Huilense regions were various semi-independent or interdependent political units whom Spaniards called «Panches» and «Pijaos». Pijaos resisted the Europeans from 1538 to 1618. Their defeat was at the cost of a large segment of their population, to the point that in 1618 when the president wrote to the king he said, «de indios Pijao no hay memoria»³³.

Honda, Chapaima, Calamoyma, Coyaima, Natagaima, Páez, Guanaca, Es-misa, Yalcones and Timaná among many other native peoples inhabited the region. Unfortunately very little is known about them. Documents that focus on European expansion into the Cundi-Tolimense area give indication of indigenous rebellion and decline in the sixteenth century. A document of 1560 reported that in Ibagué there were 2.701 tributaries in 46 settlements, about half of which had 51 or fewer tributaries. In Mariquita there were 2.038 tributaries in 33 settlements, fourteen of which had 51 or fewer, and it was reported that 3.200 Indians were in a state of rebellion («alzados»). Tocaima had 3.201 tributaries, composed of 41 groups, 16 of which had 50 or fewer tributaries³⁴. A visita carried out in 1627 found that there were 141 tributaries in Ibagué, 144 in Mariquita, and 245 in Tocaima, a decline of 92% or more in these regions, with the steepest decline that of Ibagué (95%)³⁵. The account of 1560 reported displacement and emigration from Indians communities, with three regions in rebellion against Spaniards. Natives in all the territories were employed in mining or placer mining of gold, a factor contributing to their decline. Tovar Pinzón offers a very conservative estimate of 95.000 inhabitants at the time of contact³⁶.

³³ Manuel LUCENA SALMORAL, *Nuevo Reino de Granada. Real audiencia y presidentes. Presidentes de capa y espada (1605-1628)*, Bogotá, Ediciones Lerner, 1965, pp. 237, 93-249.

³⁴ ANONYMOUS, «Visita de 1560», Hermes TOVAR PINZÓN, (ed.), *No hay caciques ni señores*, Barcelona, Sendai 1988 (1560), pp. 61-62, 66-67, 71-72. Also see Hermes TOVAR PINZÓN, «Las lenguas hablaron y dijeron que decían», TOVAR PINZÓN, ed, *Relaciones y visitas a los Andes. Siglo XVI. Vol. 4. Regin del alto Magdalena*, Bogotá, Biblioteca Nacional, 1996?, pp. 45-46. The visita of 1559 in Mariquita reports 14 possible ethnic groups that altogether have 875 tributaries (married and single men) and a total population of 1.997 including the tributaries. Numbers in the 1560 document are higher, and refer to a time before the visita.

³⁵ RUIZ RIVERA [2], p. 77.

³⁶ TOVAR PINZÓN *et al.*, [2], p. 22.

The pattern of decline in the Magdalena region appears to be similar to that in the Cauca-Patía depression. As Cook and Borah observed in the case of Quimbaya people in Cartago, there was massive attrition between the time of contact in the 1530s and 1559. Further marked decline continued through the 1600s. Such was also the case on the Caribbean Coast. Unfortunately the history of disease is unknown there. It is possible that pathogenic complexes thrived in the hot and wet lowlands. There is, however, also a clear pattern of rapid decline in all the highland areas as well within twenty to thirty years of European contact and conquest. The one exception is Chibcha population in the highlands of the Cordillera Oriental. Although their numbers decreased throughout the colonial period they continued to exist, as we will see next, while groups in other areas had come to extinction.

Moving from tropical lowlands to areas at greater elevation, we explore five distinct highland regions —The Sierra Nevada de Santa Marta, Popayán, and the Cordilleras Occidental, Central and Oriental— all of which were inhabited in the 1500s by densely populated complex polities. We will go through these regions from north to south-southwest starting with the Sierra Nevada de Santa Marta. The Sierra is about forty kilometers inland from the Atlantic Coast. An isolated high mountain mass, it covers nearly 17.000 km². Its complex geomorphology includes gentle slopes, terraces, basins, escarpments and high snow-capped peaks, as well as steep hills at differing altitudes. Soils are fairly well drained by seasonal streams and permanent rivers. Precipitation varies from as much as 4000 mm annually in the north, to between 985 mm and 1300 mm yearly in the west, and to between 500 mm and 1500 mm in the east and southeast. Variations in rain and elevation result in diverse vegetation zones, including thorn, cactus, humid savanna and dry, humid, tropical, and cloud forests. Complex societies had occupied the region for several hundred years before European contact. Although a systematic treatment of the region's prehistory remains to be written, several hundred archeological sites have been established. One, Buritacá 200 (AD 900 – 1500), has clear indications of extensive human modifications to the rugged topography.

The Sierra Nevada was a major center of gold manufacture and home to several ethnic groups whom the Spaniards called «Tairona». The term has subsequently been used for archeological remains and as a rubric for several different groups that, in fact differed from each other linguistically and culturally, and inhabited the northern sierra between Río Frío in the west and Río Ancho in the east. The region had formed part of an indigenous interactive zone with the Caribbean and other regions long before Europeans arrived³⁷. Although earliest Spanish contact was established in 1501, it was nearly a century before Europeans gained control of the region. During the first quarter of that time Europeans obtained gold and slaves³⁸. Once the city of Santa Marta was founded in 1526 Spaniards

³⁷ VILLAMARÍN and VILLAMARÍN [12], pp. 605-606.

³⁸ TOVAR PINZÓN [24], Vol. 2, pp. 52-53.

conducted eight military campaigns against «Tairona», but were unable to subdue them. There were at least five native uprisings, none of which encompassed the whole area. Some groups were friendly at times with the Europeans while others never were. One of the consequences of the Indians' retaining a degree of independence is that there is little documentation on them from that period. In 1571 there were 20.000 tributaries reported in Santa Marta and Buriticá. By the 1620s only about 2.100 had survived³⁹, indicating a pattern of decline similar to the rest of the Caribbean Coast⁴⁰.

Popayán, the second highland region, lies to the south of El Valle, and is the highest zone of the Cauca-Patía depression, measuring about 30 k wide and 75 k in length. At an altitude of 1500 m to 1700 m, it has average temperatures of 19⁰ to 20⁰ C, and rainfall of 1800 mm to 2000 mm a year. Volcanoes in the Cordillera Central have filled the depression with ash and lava. Alluvial deposits have been left by rivers that cross the region. Humid forest and grasslands predominate. Popayán has been inhabited for several thousand years. Complex societies have considerable time depth there, but as yet there has been no comprehensive archaeological or ethnohistorical accounting. Known chiefdoms include Popayán, Guanza, Maluasa, Polindara, Palace, Tembío, Colaza Cocomuco and Zotara.

At the time of conquest in 1536, ascertains Tovar Pinzón, tributaries numbered 79.989. By 1559 there were only 8.659, a decrease of 89%. Between 1559 and 1606/07 there was a further 68% decline in Popayán proper, according to Padilla, from 8,341 to 2,564 tributaries, and by 1668 a drop of almost 70% to 800 tributaries⁴¹. Here too the twenty odd years of early contact brought great population decline. The trend is much like that of chiefdoms in the northern Cauca-Patía depression with whom they had a great deal of interaction. Colmenares and Tovar Pinzón include this region in the category, Western Andes

The western cordillera, the third highland zone, is the lowest but most rugged of Colombia's three major mountain ranges. Numerous transverse branches are sometimes higher than the main section, although in a few places it rises above 4000 m. The cordillera has narrow valleys, but few basins or plateaus. Its steep sides are covered with dense forest. Complex societies were located in the northwestern region, the area now known as the Departamento of Antioquia, between the Cauca River in the East and the Ríos Sucio and Penderisco in the west and southwest. In that area temperatures average between 12⁰ C and 20⁰ C, and rainfall varies between 1000 mm and 5000 mm a year. Little information remains on the demographic history of the Cordillera Occidental even in sections where major prehispanic centers of trade and gold-mining flourished, and where

³⁹ MIRANDA VAZQUEZ, [19], pp. 43-45.

⁴⁰ COLMENARES [2] 1973. TOVAR PINZÓN *et. al.*, [2].

⁴¹ TOVAR PINZÓN [24] Vol. 1, p. 72. PADILLA *et al.*, [27], pp. 42, 159. Here 8.341 tributaries are counted for 1559.

important chiefdoms such as the Catío, Dabeiba, Guaca, Guacueco, Ituangoi, Nore, Penco and Sierra de Abibe were settled at the time of European contact. Prior to conquest it is likely that there was considerable interaction among people of the Cordillera Occidental and the Cauca-Patía Valley, given the intensive long distance trade that is known to have extended through both regions⁴². A series of native rebellions and repression occurred between 1546 and 1580. Native population declined very rapidly from a probable several hundred thousand in 1530 to a few thousand in 1580, and a few hundred by 1616⁴³.

Two major natural highland regions, the Antioquia Massif and the Pasto Plateau, are located in the Cordillera Central. The Massif, in almost the northernmost part of the mountain range is a weathered batholith that forms a plateau with average elevations between 2150 m and 2450 m. It is split in the middle by a deep gorge that the Rio Porce (Medellín) has carved through it. In the northern part is the Santa Rosa de Osos Plateau, and in the south, the Rionegro Plateau. There is an alluvial basin at the head of the Porce Gorge, the small Valley of Aburrá. The northern plateau is cold, and is covered by wet, low, mountain forest. The Rionegro Plateau is a region of cold to temperate climate (14⁰ – 18⁰ C) and is covered by low mountain and wet pre-montane forest. Within and around the batholith are abundant gold-bearing quartz veins, a resource that has figured strongly in the region's history. The little that there is of regional archeology and ethnohistory indicates that native populations included Aburrá, Nutaves, Guarcama and Tahumies, all of whom appear to have had chiefdom socio-political organization and dense populations. By the 1580s it was reported that native numbers had declined precipitously with population nearing extinction⁴⁴.

Where the three cordilleras join, south of the Páramo of the Gran Macizo de Colombia is a fourth natural highland region, the Pasto Plateau. Between the Cordilleras Occidental and Centro-oriental, at altitudes between 2500 m and 3000 m, the plateau is surrounded by volcanoes and covered with volcanic material. Differential weathering has created subsections – the altiplanicies of Ipiales, Tuquerres and Pasto. The plateau itself has a cold climate, with temperatures between 9⁰ C and 16⁰ C, and relatively low rainfall (between 600 mm and 1100 mm a year). Dry and wet mountain forests, most of which no longer exist, covered the region.

Some demographic work has been done on populations of the Pasto plateau and surroundings where the politically complex Pasto, Quillacinga and the less

⁴² VILLAMARÍN and VILLAMARÍN, [12], pp. 598-599.

⁴³ Jorge Orlando MELO, «La conquista. 1500-1580», Jorge Orlando MELO (ed.), *Historia de Antioquía*, Suramericana de Seguros, Colombia, 1991, pp. 41-52. Rodrigo ZAPATA, (Transcription of Alvaro González) «Encomiendas, Encomenderos e Indígenas tributarios del Nuevo Reino de Granada en la primera mitad del siglo XVII (por el escribano de visita Rodrigo Zapata)», *Anuario Colombiano de Historia Social y de la Cultura*, no. 2, Bogotá, 1964 (1653), pp. 520-522 (410-530).

⁴⁴ MELO [43], pp. 50-51.

centralized Abades lived. Pasto groups strongly resisted Inka advances and remained independent until European arrival. Archeological research indicates that their population increased between 1250 AD and 1500 AD, then declined prior to Spanish arrival, possibly as a result of war and/or disease introduced into the region via long distance trade⁴⁵. As Cieza de León stated:

...antiguamente devió ser más poblada: porque es cosa admirable de ver, que con tener grandes términos de muchas vegas y riberas de ríos y sierras y altas montañas: no se andará por parte (aunque más fragosa y dificultosa sea) que no se vea y parezca aver sido poblado y labrado del tiempo que digo⁴⁶.

Calero has studied trends in Pasto populations from 1558 to the late seventeenth century. In 1558, about 23 years after Spanish arrival, there were 10,366 Pasto tributaries and in 1590 about 3,949, a decline of almost 62%. A further drop of 52% occurred between 1590 and 1691. Between 1558 and 1590 Quillacinga tributaries declined by 66%, from 8,629 to 2,931, and Abades tributaries by 87%, from 2,772 to 357. A 1691 report on Abades and Quillacinga gives a total of 582 tributaries, in contrast to 3,288 in 1590. The precipitous drop in numbers over the first decades of contact and conquest was followed by further decline. By 1690 tributary numbers had fallen by another 66.3%. Tovar Pinzón calculated that the contact tributary population of the Pasto, Quillacinga and Abades was 215,831 in 1536, and by 1559 had fallen to 23,364 tributaries (1,597 more than Calero's figure), indicating a decrease of 89% within the first 23 years of conquest⁴⁷.

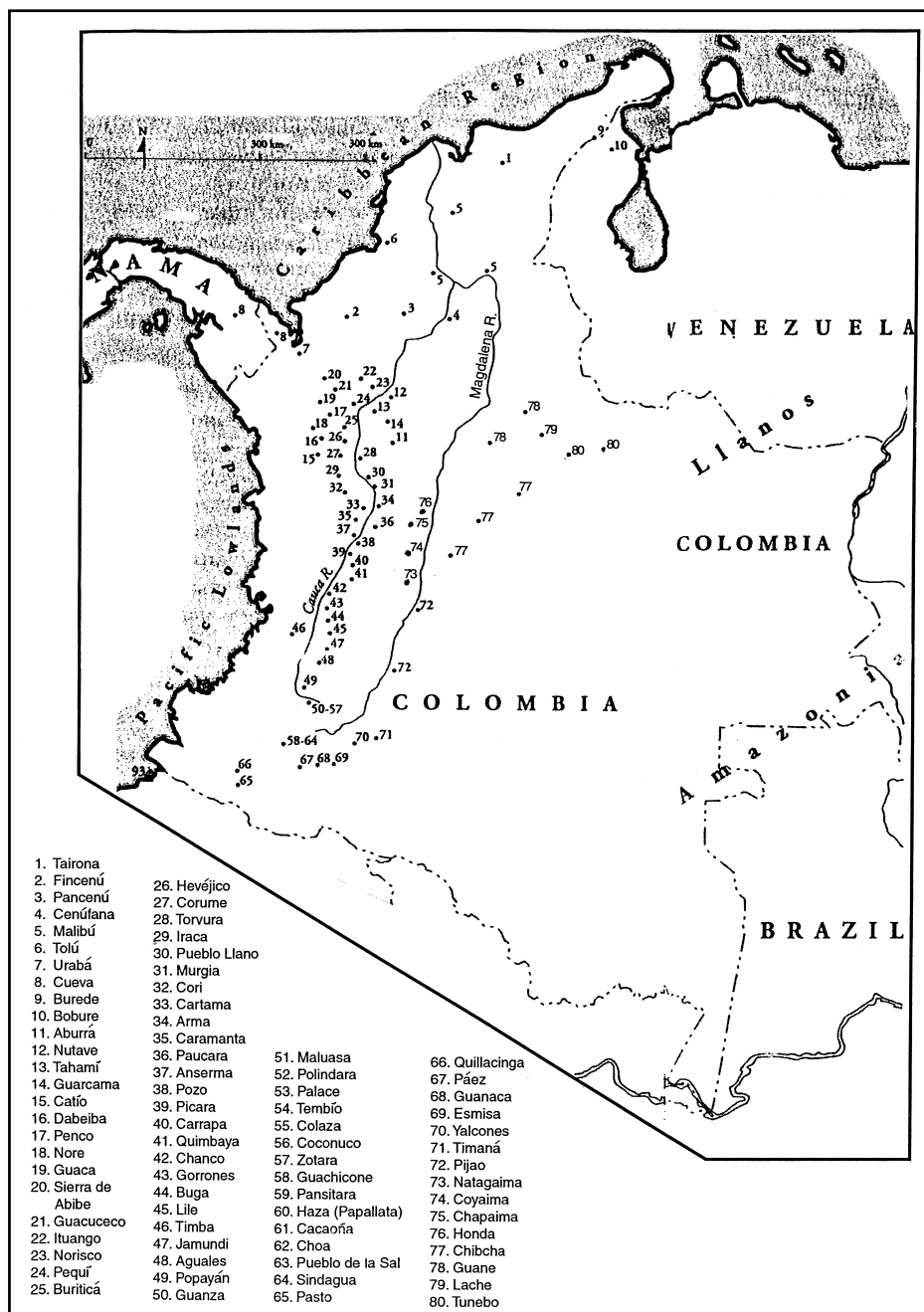
⁴⁵ María Victoria URIBE, «Asentamientos prehispánicos en el altiplano de Ipiales», *Revista Colombiana de Antropología*, Vol. 21, Bogotá, 1977/1978, pp. 57-195; «Etnohistoria de las comunidades andinas prehispánicas del sur de Colombia», *Anuario Colombiano de Historia social y de la cultura*, Bogotá, Vol. 13/14, 1985/1986, pp. 5-40. URIBE and Roberto LLERAS, «Excavaciones en los cementerios Protopasto y Miraflores, Nariño», *Revista Colombiana de Antropología*, Vol. 24, 1982-83, pp. 335-379. URIBE and Santiago MORA, «Colombia Prehispánica», *Gran Enciclopedia de Colombia*, Bogotá, Circuito de Lectores, Vol. I, 1991, pp. 1-38. Ana María GROOT DE MAHECHA, «El Macizo Andino del sur», Alvaro BOTIVA CONTRERAS, Gilberto CADAVID, Leonor HERRERA, Ana María GROOT DE MAHECHA and Santiago MORA, *Colombia Prehispánica. Regiones Arqueológicas*, Bogotá, Instituto Colombiano de Antropología, 1989, pp. 181-188.

⁴⁶ Pedro CIEZA DE LEÓN, *Crónica del Perú*, Vol. 1, Lima, Pontificia Universidad Católica del Perú, 1986-1989 (1550s), pp. 110-111.

⁴⁷ Luis F. CALERO, *Chiefdoms Under Siege. Spain's Rule and Native Adaptation in the Southern Colombian Andes 1537-1700*, Albuquerque, University of New Mexico Press, 1997, pp. 86,88, 177-179, 183-186; CALERO, *Pastos, Quillacingas y Abades, 1535-1700*, Bogotá, Biblioteca Banco Popular, 1991, pp. 215-217. TOVAR PINZÓN [24], Vol. 1, p. 72. Small differences are also found in sixteenth century tributary counts in Kathleen ROMOLI, «Las tribus de la antigua jurisdicción de Pasto en el siglo XVI», *Revista Colombiana de Antropología*, Vol. 21, Bogotá, 1977-1978, pp. 11-55; and in PADILLA *et al.*, [27], p. 40.



Map. I. Natural regions of Colombia.



Map. II. Native colombian ethnic groups C.A. 1500.

The Cordillera Oriental is the longest and widest of the three Andean ranges in Colombia. Some peaks ascend to 3000 m but most are below that. The mean temperature is 13.5⁰ C, and average rainfall between 850 mm and 900 mm a year. There are four smaller natural regions toward the center and north of it. The first, the Altiplano, contains some fourteen highland basins that extend north of Bogotá for about 240 k at elevations between 2500 m and 2800 m within the modern departments of Cundinamarca, Boyacá and Santander. Pleistocene lakes, some quite deep have covered the area as have swamps and marshes. During the past several hundred years native Americans and European colonizers have tried to control floods over the very fertile lacustrine soils of the basins. The Sabana de Bogotá is the first and largest of the basins north of the Páramo of Sumapaz. Small transverse ranges rim basins north of the Sabana such as Ubaté, Chiquinquirá, Tunja, Santa Rosa and Sogamoso. These and the Sabana were the primary territory of the Chibcha, an agricultural people with complex politics and very large populations living in dispersed settlements. At the time of contact Chibcha communities had ranked political hierarchies that were in a process of regional alliance, competition, and integration suggestive of the beginnings of state formation. The two major supra-local political divisions, Bogotá and Tunja, were mirrored in the Spanish post-conquest provincial divisions of Santa Fe and Tunja (although both provinces were larger and more inclusive containing non-Chibcha as well as Chibcha populations)⁴⁸. A great number of works have been published on Santa Fe and Tunja⁴⁹. Estimates of Chibcha population at the time of European arrival in 1537 range from the conservative 300.000-400.000 to 1 million. Figures are hard to pin down partly because of the nature of data left to us. In Santa Fe

⁴⁸ VILLAMARÍN and VILLAMARÍN [12], pp. 584-595.

⁴⁹ They include COLMENARES [2] 1970, 1973; COOK and BORAH [7]; EUGENIO MARTINEZ [2]; FRIEDE [4]; Hernando GOMEZ BUENDIA, «Análisis demográfico y social de 7 poblaciones de la Provincia de Tunja en el siglo XVIII», *Anuario Colombiano de Historia Social y de la Cultura*, Vol. 5, 1970, pp. 5-52; Martha HERRERA ANGEL, *Poder local, población y ordenamiento territorial en la Nueva Granada – Siglo XVIII*, Bogotá, Archivo General de la Nación, 1996; JARAMILLO URIBE [4], *La personalidad histórica de Colombia y otros ensayos*, Bogotá, Instituto Colombiano de Cultura, 1977, pp. 167-179; María Teresa MOLINO GARCIA, *La encomienda en el Nuevo Reino de Granada durante el siglo XVIII*, Sevilla, Escuela de Estudios Hispano-Americanos, 1976; F. A. MORENO Y ESCANDON, *Indios y mestizos de la Nueva Granada a finales del siglo XVIII*, Bogotá, Biblioteca Banco Popular, 1985 (1772-1778); Magnus MORNER, «Las comunidades de indígenas y la legislación segregacionista en el Nuevo Reino de Granada», *Anuario Colombiano de Historia Social y de la Cultura*, Vol. 1, 1963, pp. 63-88; RUIZ RIVERA [2] and *Fuentes para la demografía histórica de Nueva Granada*, Sevilla, Escuela de Estudios Hispano-Americanos, 1972; TOVAR PINZÓN [2]; Andrés VERDUGO Y OQUENDO, «Informe del visitador real don Andrés Berdugo y Oquendo sobre el estado social y económico de la población indígena, blanca y mestiza de las Provincias de Tunja y Vélez a mediados del siglo XVIII», *Anuario Colombiano de Historia Social y de la Cultura*, Vol. 1, 1963, pp. 131-196; Juan A. VILLAMARÍN, «Haciendas en la Sabana de Bogotá, Colombia, en la época colonial (1539-1810), Enrique FLORESCANO, (ed.), *Haciendas, Latifundios y Plantaciones en America Latina*, México, Siglo XXI, 1975, pp. 327-345; VILLAMARÍN and VILLAMARÍN [3], 1979, 1981.

encomendero opposition to formal censuses blocked systematic enumeration until the 1590s. Some partial early counts and an estimate for the 1550s remain⁵⁰.

Information on Tunja consists of partial counts reported in 1562 and 1572. Colmenares used these as core data on which to reconstruct population figures. Working back from a 1635/36 baseline of 115 pueblos he added a hypothetical one third more pueblos to the 1562 count, half again as many to those enumerated in 1572, and another fifty percent to the numbers reported in 1602. Colmenares then calculated that tributary population declined by 69% between 1562 and 1602, from 53,465 tributaries to 16,348. Eugenio Martínez supplemented the 1562 and 1572 counts with other data, and calculated a decline of 42%, from 36,235 to 20,843 in the same period. According to a document dated 1560 Tunja's tributary population then was 52,647, a figure that is close to the one that Colmenares proposed. Colmenares estimated that Tunja's tributary population dropped by 47% between 1602 and 1636, falling to 8,610. Ruíz Rivera, using an adjusted figure, found a decline of 49% (from 20,416 to 10,429) for the same span of time, and a further decrease of 26% by 1690⁵¹.

There are no studies of eighteenth century population with the same breadth as those by Colmenares, Eugenio Martínez and Ruíz Rivera. Nonetheless some important trends emerge regarding persistent Indian decline and steady increases of non-Indians. Molino García finds that from 1635/36 to 1755/56 native population fell between 7% and 85% in a number of Tunja's communities. By mid-eighteenth century whites, mestizos and others in Indian reservations and surrounding areas had increased, forcing Indians off their own lands⁵². For lack of adequate information neither Colmenares nor Eugenio Martínez projected their Tunja figures back to the time of contact. Friede does calculate the population for that period at 232,407, and Cook and Borah at 283,000, numbers that in the light of recent work on population reconstruction, appear to be on the very low side⁵³.

Santa Fe's socio-economic and population history parallels that of Tunja⁵⁴. In the 1550s Santa Fe was reported to have an estimated 36,550 tributaries, a low figure in our judgement. In the 1590s there were 19,161 tributaries on visita lists, a decline of at least 47.6%. In 1636-1640 there were 10,178 tributaries, and in 1690 6,924 according to Ruíz Rivera's careful reconstruction⁵⁵. There was, then, a tribu-

⁵⁰ ANONYMOUS [34], pp. 21-120.

⁵¹ COLMENARES [2], 1973, pp. 63, 58-69. His number for 1602 is 16,348 ([2] 1970, p. 61). In 1973 he uses 18,572. EUGENIO MARTÍNEZ [2], pp. 212, 213, 187-223 In 74 pueblos for which she had 1562 and 1602 figures she found a 54.5% decrease. ANONYMOUS [34]. RUIZ RIVERA [2], p. 95.

⁵² MOLINO GARCÍA [49], pp. 78-82. See also in [49] GÓMEZ BUENDÍA, MORENO y ESCANDON, and VERDUGO Y OQUENDO.

⁵³ FRIEDE [4], p. 13. COOK and BORAH [7], p. 417.

⁵⁴ VILLAMARÍN and VILLAMARÍN [3], 1981. EUGENIO MARTÍNEZ [2], pp. 204-223, RUIZ RIVERA [2], pp. 94-112.

⁵⁵ ANONYMOUS [34], RUIZ RIVERA [49], pp. 23-33 and [2], pp. 95, 97.

tary decline of 46.9% between 1590 and 1636, and a cumulative decline of 63.9% between 1590 and 1690. Tributary lists provide a general guide to population in the seventeenth and eighteenth century as well, although as we have discussed above, they need to be used guardedly. There is an almost complete series of tributary counts for thirty-four Sabana de Bogotá communities between 1660 and the early 1800s. There was a 51.4% decline in tributaries from 3,453 in 1673 to 1,678 in 1802/03. A drop of about 30% between 1687 and 1694 is largely attributable to the epidemics of measles in 1692 and smallpox in 1693⁵⁶. By the late eighteenth century and early nineteenth century in Cundinamarca and Boyacá, Chibcha numbers accounted for less than half of total population in the region. Although individual communities experienced some growth at one time or another, a steady overall decline began in the sixteenth century and persisted through the colonial period, a notably different population trajectory from that in other areas such as Mexico. Viewed from the perspective of Tovar's estimate for the entire eastern cordillera of 2.4 million, it is possible that population in the provinces of Santa Fe and Tunja could have numbered from 1 million to 1.5 million or more at European contact⁵⁷.

North of the Altiplano are three other major natural sub-regions — the Santander Highlands, Suárez Basin and Western Versant. At the time of conquest Guane chiefdoms, among others, inhabited all three sub-regions, and had substantial time depth there. One section of the Guane people in the Province of Vélez has been studied, but information on their numbers is uncertain⁵⁸. Tovar Pinzón's total contact period population of 256,728 is high given his own data, as well as that of Fajardo and a contemporary document containing figures for the 1550s. In 1617 there were 5,386 Indians of all ages in a portion of the province, and in 1643 in the same area there were 2,085⁵⁹. Other sections of Guane as well as complex societies of the northern portion of the Cordillera Oriental, such as the Tunebo in the eastern Sierra Nevada del Cocuy and the Llanos, and the Laches of the western Sierra Nevada del Cocuy and Chicamocha River region require further research.

Data on less politically complex, linguistically related but culturally distinct groups in the Santander highlands, called «Chitarreros» by the Spaniards, has been explored. Colmenares, using Pamplona Province as his unit of study, reconstructed total population figures, and estimated that there were about 32,000 natives in the 1550s, 8,500 in the 1590s, 4,526 in the 1640s, and about 3,000 in the

⁵⁶ VILLAMARÍN and VILLAMARÍN [3], 1981.

⁵⁷ VILLAMARÍN and VILLAMARÍN [3], 1979. HERRERA ANGEL [49]. TOVAR PINZÓN *et. al.*, [2], p. 22 and *passim*.

⁵⁸ DARIO FAJARDO, *El régimen de la encomienda en la Provincia de Vélez (Población indígena y economía)*, Bogotá, Universidad de los Andes (multilith), 1969. Numbers vary slightly in the text. TOVAR PINZÓN [2], pp. 97-99, 119-120.

⁵⁹ ANONYMOUS [34], pp. 92-97. FAJARDO [58], pp 33, 39, 47-51.

1770s⁶⁰. Cook and Borah calculated that contact «Chitarrero» population was at a minimum 60.000. Tovar Pinzón proposed totals of between 140.000 and 210.000 and in a recent very detailed study has raised the estimate to 270.000. By 1600, he says, there were only a few thousand Indians⁶¹. If we accept Tovar Pinzón's figures then the Chitarrero decline is similar to that of the Quimbaya. Santa Fe and Tunja stand apart in their slower decline.

It becomes quite clear in a broad multi-regional perspective throughout Colombia that there was a great drop of population everywhere —highlands and lowlands— within the first thirty years of European contact. The decline continued among those who survived the initial ravages. Disease, conquest and colonial rule exacted great tolls, as did the disruption of traditional subsistence modes and economic networks. The many polities that occupied territory within Colombia were linked in interactive networks of social and economic relations through a complex grid of markets that extended over considerable geographic distances. It is highly likely that individuals in contact with Europeans in Caribbean regions where newly introduced disease began to appear in the 1490s could have carried them to other areas along trade routes⁶². The Colombian coast was an area where Europeans replenished their supplies and appropriated both goods and humans to serve or sell as slaves for several decades before settlement. At the same time native people exchanged goods along the Coast to Panama and Central America and the Sierra Nevada, Venezuela and the Antilles. Gold and gold objects acquired from the Cauca-Patía depression moved northward while slaves, fish, peccary, salt, cotton textiles and some special gold objects moved west and south. They then continued south along the Cauca-Patía depression and eastward to the Magdalena River where Chibcha salt, cloth (mantas) and emeralds were exchanged for gold. In addition to these main routes other interconnecting ones brought peoples and regions together⁶³. It is quite possible, but not certain that epidemics occurred prior to direct contact with Europeans.

In the post-contact period disease was rampant, and continued long after the initial period of contact to affect native population dramatically⁶⁴. One of the first steps in convincingly attributing population decline to disease is ascertaining what epidemics actually occurred. An account of major epidemics in Santa Fe and the

⁶⁰ COLMENARES [2], 1969, pp. 47, 41-68.

⁶¹ COOK and BORAH [7], p. 426. TOVAR PINZÓN, [2], pp. 99, 99-103; Hermes TOVAR PINZÓN, Luis Enrique RODRÍGUEZ and Marta HERRERA ÁNGEL, (eds.), *Territorio, población y trabajo indígena. Provincia de Pamplona, siglo XVI*, Bogotá, Instituto Colombiano de Cultura Hispánica, 1998, pp. 73, 70-75.

⁶² TOVAR PINZÓN [24], 1997, pp. 51-154. VILLAMARÍN and VILLAMARÍN [12], pp. 603-607. Noble David COOK, *Born to Die. Disease and New World Conquest, 1492-1650*, Cambridge, Cambridge University Press, 1998, pp. 15-59, 132.

⁶³ VILLAMARÍN and VILLAMARÍN [12], pp. 599-600.

⁶⁴ Noble David COOK and W. George LOVELL, (eds.), *Juicios secretos de Dios*, Quito, Abya-Yala, 2000.

Sabana de Bogotá during the colonial period finds that there were at least nine documented outbreaks of smallpox, three of measles, one of typhus and one unidentified epidemic. Other epidemics are mentioned but documentation regarding them is lacking⁶⁵. Five of the nine known smallpox epidemics also occurred in other regions of New Granada - those of 1558, 1588, 1651, 1692-1693, and 1781- 1783. The first four were Pan-Andean, with reports of them from Ecuador, Perú, and Bolivia. The fifth one struck other areas outside New Granada, such as Ecuador.

Smallpox epidemics broke out in the Sabana in 1621, 1667-1668, 1756, and 1801-1803. Unlike the five epidemics noted above, there is no information yet on their occurrence outside the Sabana region. All three measles epidemics (1617-1618, 1692-1693, 1729) befell other sections of New Granada as well. The first and second were Pan Andean, while the third was reported in Ecuador. The typhus epidemic of 1630-1633 was general throughout the Americas. There was an unidentified epidemic, perhaps influenza, in the Sabana in 1568 and 1569. The Sabana was spared some of the major epidemics in New Granada and beyond, such as the unidentified epidemic of 1546 that struck Quimbaya populations and Spaniards in the Cauca-Patía depression, and had a heavy death toll among the natives. The Pan Andean epidemic of measles in 1597, and of measles, typhus and mumps in 1611-1614 also are not documented in the Sabana region⁶⁶. The first known global population figure documented for Santa Fe does not come until the 1550s, and gives an estimate of 36.550 male tributaries⁶⁷. The second is based on visitas made in the 1590s, when 19.161 tributaries are reported. The three epidemics that occurred between 1555 and the 1590s were critical factors in the 47.6% decline during that time. Chroniclers and eyewitnesses reported heavy losses in European and native communities⁶⁸. In our view the reported decrease is on the low side and represents undercounting in this area during the sixteenth century.

Between the 1590s and 1636/1640 tributaries numbers fell by another 46.9% (figured by reports from visitas, rather than estimates), with three severe epidemics occurring during the interval. Chronicler Simón wrote in 1626 about the first, the measles epidemic of 1617-1618, saying that more than one fifth of the

⁶⁵ VILLAMARÍN and VILLAMARÍN, «Epidemias y despoblación en la Sabana de Bogotá. 1536-1810», COOK and LOVELL, (eds.), [64], pp. 141-166.

⁶⁶ COOK [62]; See in COOK and LOVELL [64]: Linda NEWSON, «Epidemias del viejo mundo en Ecuador, 1524-1618», pp. 119-140; and Suzanne ALCHON AUSTIN, «Enfermedad, población y salud pública en Quito durante el siglo XVIII», pp. 183-202. VILLAMARÍN and VILLAMARÍN [12] and [65]. Henry DOBYNS, «An Outline of Andean Epidemic History to 1720», *Bulletin of the History of Medicine*, 37, 1963, pp. 493-515.

⁶⁷ ANONYMOUS [34], pp. 78-81. EUGENIO MARTÍNEZ [2], pp. 205-207, 215-216. Eugenio Martínez reported a document of 1556 written by religious personnel that mentions 38 *pueblos* with 13.230 *tributarios*. On that basis she calculates a total province-wide tributary population of 22.604 at that time. She notes that López de Velasco reported tributaries as being between 40.000 and 50.000. In 1572 the fiscal of the Real Audiencia wrote that there were 17.000 tributaries.

⁶⁸ VILLAMARÍN and VILLAMARÍN [65], pp. 142, 146-147; and [3].

Indians died in it. President Borja in 1625 also wrote that one fifth of the population was lost, but included in his calculation losses caused by the smallpox epidemic in 1621. Typhus, *tobardillo*, was the third epidemic. It occurred during 1630-1633, and was an epoch making event. The cabildo of Santa Fe wrote to the Crown that the disease had killed about one third of the natives. No doubt the three epidemics were a crucial factor in almost halving the tributary and total population in a forty-year period. All three epidemics were associated with crop failures, hunger and the population being so sick that people could not care for one another⁶⁹.

Counts done in visitas show that between the 1640s and 1690 there was a further 31.9% decline of tributaries, again in large part, as we see it, a result of the impact of epidemics, this time two of smallpox. Between 1690 and 1810 there were six more epidemics, two of smallpox and four of measles. Because visitas were not carried out on a regular basis during that time, it is difficult to sort out trends for the entire Sabana. But in 34 communities on which we have information there was a decline of 51.4% between 1673 and 1803. The decline reflects not only effects of disease, but also the greater manipulation by Spaniards and Indians of the category, tributary. Nonetheless between 1687 and 1694 there was a 30% decrease, which can be correlated in this period with the measles epidemic in 1692 and smallpox in 1693⁷⁰.

The smallpox epidemic of 1781-83 was severe. In the city of Santa Fe it was reported to have killed between 5.000 and 7.000 people, a very large toll in a municipality where only 15.326 adults had been counted in the 1778 census⁷¹. Serious losses were also reported in individual native Sabana communities. In addition crop failure and food scarcity were documented once again. Epidemics had widespread effects on young and old, taking individuals out of subsistence production or caring for others. Parish records show that their intensity varied from place to place, and that there were also localized outbreaks of unidentified illnesses that were not reported regionally. The fragmentary data from other regions of Colombia indicate that epidemics accounted for heavy population losses during the colonial period.

We concur with Cook and Borah that epidemics were an essential cause of population decline. But there were other factors contributing to native attrition, in very large measure related to the socio-political and economic exigencies of conquest and colonial rule. From the time of European arrival there were critical disruptions of native economy and traditional support systems. Expeditionaries conscripted considerable numbers of people to serve as carriers as well as to work in other sorts of labor which were theoretically illegal, but widely em-

⁶⁹ VILLAMARÍN and VILLAMARÍN [65], pp. 142-143, 147-148, 161-163.

⁷⁰ *Ibidem*, pp. 143, 148-156, and [3].

⁷¹ VILLAMARÍN and VILLAMARÍN [65], pp. 143, 149-151, 164.

ployed. Even after Crown control was established, not only men but women and children were drawn into city and mining drafts to support the men while they were away from their communities. Women were often illegally retained in towns and cities, and losses were incurred in mining through work and journey related deaths. In later periods, population loss accrued as workers emigrated from their communities of origin where they were subject to tribute⁷².

The great dispossession of land and resources brought about by conquest was heightened by forced resettlements enacted by crown officials with great vigor in the 1590s and early 1600s. Dispersed Chibcha communities were relocated in nucleated settlements which they were forced to build themselves. In the process of carrying out relocation officials assigned most of the land to settlers and the Crown, leaving only 5% in the Sabana to the 19.161 tributaries present at the time and their families (reported to be another 42.224 people), or about half a hectare per person. With this loss and the officials' concurrent establishment of formal forced labor systems in agriculture, mines and the city (construction, service and other jobs), very little means or time was left for workers to provide for their subsistence needs⁷³. Were there also other aspects of the native population situation that in the past have not been accounted for but need to be looked at, such as their nutrition and health at the time of contact? Recent discussions have focused on issues of populations' well being, their levels of nutrition, health and disease. Data are based on skeletal remains, but again there is the nagging problem of numbers, this time of moving from results on a sampling that appears to us inadequate for the large populations they are understood to represent, and the generalizations made about them. In 1994 McCaa painted a very dark picture of the state of native contact populations:

Skeletal remains from the pre-Columbian era tell of omnipresent nutritional stress; life-sapping insults from vitamin, mineral and protein deficiencies; tuberculosis; arthritis; syphilis-like treponoma; death-inflicting dental caries; debilitating parasites, famine; appalling infant mortality, and much more⁷⁴.

In 1996 McCaa wrote, «Although in the popular imagination ancient America is often seen as a paradise 'demographic hell' may be a more accurate characteri-

⁷² VILLAMARÍN and VILLAMARÍN [65]; «El trabajo indígena, su papel en la organización social y política prehispánica y colonial», Marcello CARMAGNANI, Alicia HERNÁNDEZ CHAVEZ and Ruggiero ROMANO, (eds.), *Para una historia de América*. Vol. III, 2, México, El Colegio de México, 1999, pp. 13-72.

⁷³ VILLAMARÍN [49] and [3].

⁷⁴ Robert MCCAA, «Latin American Demography», Peter N. STEARNS, (ed.), *Encyclopedia of Social History*, New York, Garland, 1994, p. 394.

zation». This may be the case, he says, of most ancient people. They «were fragile, weakened by stress, poor nutrition and ill health»⁷⁵.

The culprit everywhere was dependency on agriculture as a subsistence means, one characteristic of a large segment of South American populations in pre-contact and contact periods. A perspective on agriculture presented by Mark Cohen suggests that depletion of foraging ranges by hunters and gatherers along with population growth spurred on the development of agriculture. The shift to plant cultivation as a primary source of subsistence, however, had a negative impact on human nutrition. Despite the increased caloric intake that agriculture provided it also led to a decrease in variety and supply of amino acids, protein, vitamins and minerals. Poor diet, it is argued, promoted increased morbidity. Infections and disease rose as a result of changed living conditions, from a mobile to a sedentary life. High population densities provided hosts for increasing numbers of parasites, and permitted rapid spread of contagious diseases by inhalation, contact, and contamination of food or water. Expansion into new areas brought about landscape disturbances and encounters with new pathogens⁷⁶.

Cohen surmises further that with increasing political complexity there was a decline in the average individuals' health and quality of life as a consequence of inequalities in access to food and goods. His proposals are in the process of being tested. A recently published study of the Americas based on a re-interpretation of analysis done on 12,520 skeletons from 218 archaeological sites give support to Cohen's hypothesis. The sample for Middle America is a relatively small 1,173 individuals, as is that of 2,181 for South America, in which, Perú, Chile and Brazil are covered over the long span of 1000 BC to 1749 AD, and Ecuador to 1940⁷⁷. The investigators have constructed a health index with two components: length of life and health quality of life. There are limitations on the first category, they note, because information is not uniform throughout the samples. Consequently their estimates are «heavily qualified». They emphasize that the second component is «... tied to age specific rates of many types of skeletal lesions», among them lesions

⁷⁵ Robert MCCA, «Population History of Spanish America», Bárbara TENEBBAUM, (ed.), *Encyclopedia of Latin American History*, New York, Scribner, 1996, Vol. 4, pp. 435-439, p. 435; and MCCA [4], p. 246. This may have been the situation worldwide until quite late according to anthropologist Sidney Mintz. He says, «as recently as a century ago, the combination diet of a single starch supplemented by a variety of other foods and the constant possibility of widespread hunger—sometimes famine—would have characterized something like 85 percent of the world's population». MINTZ, *Sweetness and Power*, New York, Viking, 1985, pp. 13-14.

⁷⁶ Mark N. COHEN, *The Food Crisis in Prehistory*, New Haven, Yale University Press, 1977; Mark N. COHEN and George ARMELAGOS, (eds.), *Paleopathology at the Origins of Agriculture*, New York, The Academic Press, 1984.

⁷⁷ Richard H. STECKEL, Jerome C. ROSE, Clark S. LARSEN, and Philip L. WALTER, «Skeletal Health in the Western Hemisphere from 4000 B.C. to the Present», *Evolutionary Anthropology*, Vol. 11, 2002, pp 142-155.p. 143; STECKEL and Jerome ROSE, eds., *The Backbone of History. Health and Nutrition in the Western Hemisphere*, Cambridge, Cambridge University Press, 2002.

indicating dental pathology, disrupted dental development, anemia, degenerative joint disease, skeletal infections, trauma, and nutritional or health deficiencies that manifest in short stature. Although the editors' statements are tempered by limitations that they acknowledge, they contend that, «the poor quality of life of native populations brought about by deteriorating quality of diet, sedentism and population aggregation». was a major contributor to the success of European conquest⁷⁸.

There appear to have been marked variations in health status. For example, Classic Maya populations in Mesoamerica fared worse than people in other parts of the Americas⁷⁹. In Ecuador nutrition levels and health deteriorated as dependency on agriculture increased. However, samples from the highland areas had less evidence of morbidity than did the coastal areas. In the coastal areas too there are differences with respect to the natural environment⁸⁰. Specimens from the northern coast of the state of Santa Catarina (Southern Brazil) between 5000 BP and AD 1000 are considered to be among the healthiest of all samples. The authors relate this finding to the nutrient-rich environment of the estuary zones, productivity of fauna, and a natural system of waste removal associated with tide cycles. The hemispheric project is a more systematic approach to study than earlier comparative studies of paleopathology, correcting problems of interpretation of the data, and of different coding schemes⁸¹.

In Colombia (not included in the hemispheric project) there are only two evaluations of skeletal materials from the Chibcha area with indications of some health problems in pre-contact populations. José Vicente Rodríguez, a physical anthropologist, has done an analysis of between 68 and 135 skeletons in Soacha, in the Sabana de Bogotá, dated between 1035 +/-115 AD and 1230 +/-110 AD. His work has provoked discussion and disagreement among Colombian anthropologists. Rodríguez reports the occurrence in some specimens of dental pathology, tuberculosis of the bones and joints, and degenerative joint diseases⁸². Cárdenas Arroyo questioned the methodology, the findings and the inferences of

⁷⁸ STECKEL, ROSE, LARSEN and WALTER [77], p. 153.

⁷⁹ Lourdes MÁRQUEZ MORFIN, Robert MCCAA, Rebecca STOREY, and Andrés DEL ANGEL, «Health and Nutrition in Pre-Hispanic Mesoamerica», STECKEL and ROSE [77], pp. 307-338; Rebecca STOREY, Lourdes MÁRQUEZ MORFIN and Vernon SMITH, «Social Disruption and the Maya Civilization of Mesoamerica. A Study of Health and Economy of the last Thousand Years», STECKEL and ROSE [77], pp. 283-306.

⁸⁰ Douglas H. UBELAKER and Linda A. NEWSON, «Patterns of Health and Nutrition in Prehistoric and Historic Ecuador», STECKEL and ROSE [77], 343-375.

⁸¹ Walter NEVES, and Véronica WESOŁOWSKI, «Economy, Nutrition and Disease in Prehistoric Coastal Brazil: A case study from the state of Santa Catarina», STECKEL, ROSE, LARSEN, and WALTER [77], 376-400.

⁸² José Vicente RODRÍGUEZ, *Los Chibchas: pobladores antiguos de los Andes orientales*, Bogotá, Universidad Nacional de Colombia, <http://www.Colciencias.gov.co/seiaal/documentos/URC04.htm>. 5/17/01 (1999). Alvaro BOTIVA CONTRERAS, «La Altiplanicie CundiBoyacense», BOTIVA CONTRERAS, *et al.*, [45], pp. 100-102, 77-115.

poor nutrition with marked gender differences that Rodríguez claims to have found, as well as the non-physical deductions regarding type of marriage and residence⁸³. Boada, in a comment on Cárdenas' article gives some support to the poor nutrition view in a work that she carried out at the site of Marín in the Valley of Samacá (Boyacá province). In a sample of 37 skeletons dated between the 13th and 14th century AD, she found signs of disrupted dental development and pathology, anemia, and osteoporosis⁸⁴. In contrast, in a group of 31 skeletons from Tunja dated to the Muisca Period (400 AD-1800 AD) Padilla Rueda reported, «un alto porcentaje de dientes sanos»⁸⁵. Cárdenas Arroyo using stable isotope ratio analysis on 18 bone samples of women and children from a site in the city of Bogotá dated between the 8th and 10th century AD, reports a high consumption of meat. In 1996 in a more general view he reports that Chibcha nutrition was varied with vegetable and animal foods, and that there were very few differences in diet between the sexes⁸⁶.

Colombian archeological skeletal data are sparse and have not yet been arranged in systematic indices, time sequences, or regional distribution. This is the case even in the area most explored, the eastern cordillera where Chibcha ancestors had a history reaching back to the eighth century AD if not earlier. Studies of remains dating from the eighth to the fourteenth century or before are useful but inadequate for creating a basis on which we can generalize about the health of Chibcha ancestors or about the well-being of the contact population. Chroniclers and sixteenth century documents, however, give no indication of pervasive illness or malnourished populations in Chibcha territory. To the contrary, emphases are on abundance of goods and people, great numbers of whom Europeans conscripted into labor for them. Documentation also exists describing resistance movements in Chibcha territory through the conquest period. Admittedly we have only indirect data on pre-contact nutrition and health. Clearly further explo-

⁸³ Felipe CÁRDENAS ARROYO, «Mitos y verdades sobre la desnutrición entre los muiscas: una visión crítica», *Revista de Antropología y Arqueología*, 6, 1, Bogotá, 1990, pp. 129-139.

⁸⁴ Ana María BOADA, «Las patologías óseas en la poblaciones de Marín», *Boletín de Arqueología*, 3 (1) Bogotá, 1988, pp. 3-24; «Hay desnutrición entre 'Los Muiscas' ... o en los modelos?», *Revista de Antropología y Arqueología* 6 (1), Bogotá, 1990, pp. 161-162; «Variabilidad mortuoria y organización social muisca en el sur de la Sabana de Bogotá», Braida ENCISO and Monika THE-RIEN, eds., *Sociedades complejas en la Sabana de Bogotá: siglos VIII al XVI D.C.*, Bogotá, Instituto Colombiano de Antropología e Historia, Vol. 3, 2000, pp. 21-58.

⁸⁵ Helena PADILLA RUEDA, Germán VILLATE SANTANDER and Francisco ORTIZ GÓMEZ, «Arqueología del Cercado grande de los santuarios», *Boletín Museo del Oro*, Bogotá, 1992, N° 32-33, pp. 84, 20-147.

⁸⁶ Felipe CÁRDENAS ARROYO, «Paleodieta y Paleodemografía en poblaciones arqueológicas muiscas (sitio Las Delicias y Candelaria)», *Revista Colombiana de Antropología*, 30, Bogotá, 1993, pp. 129-148; CÁRDENAS ARROYO, «La dieta prehispánica en poblaciones arqueológicas muiscas», *Antropología de La Sabana de Bogotá: Siglos VIII al XVI D.C.*, Bogotá, Colcultura, Instituto Colombiano de Antropología, Vol. 2, 1996, pp. 85-109, 104-105.

ration of health status issues should prove of great interest for this area as well as others in Colombian territory.

Methods elucidated by Borah and Cook have proved productive in using documentary data to extract demographic information and place it in context. We would judge that given Colombia's rich and varied environments and the great number of complex ethnic groups living there at the time of Spanish contact, there were certainly upward of 3 million, probably 3.5 million, and perhaps 4 million people. The figures and descriptions contributing to assessment come from early estimates and counts that are far from being perfect or complete. Like archaeologists pondering data at their sites or paleo-demographers dealing with interpretation of skeletal material, we find salvageable documentary material from which we can make inferences. Exact numbers are not possible, but useful approximations or ranges are, and have been pursued thoroughly and advantageously by several scholars. In the process in Colombia many distinct prehispanic peoples previously hidden within the amorphous category, «Indian», have been identified. The history of some can be better sketched than others, as the uneven data unfold under ethno-historic and archaeological scrutiny, but we are able to discern demographic patterns following contact, conquest and European settlement, as well as to ask better informed questions about their pre-conquest status.

In this essay we have looked at very broad categories corresponding to the two most comprehensive ecological zones in Colombia, lowlands and highlands, in response to questions raised by Borah and Cook regarding the impact climate and elevation had on native mortality during and after contact and conquest. We find in probing currently available information region by region that there was substantial attrition everywhere within the first thirty years of contact. Afterward the Chibcha were the one people who, although greatly diminished, still had significant numbers—in the thousands—up through the eighteenth century. Unlike native-Americans in Mexico, their numbers did not then increase. Other populations disappeared entirely or became very small, and often dispersed. Although Chibcha were employed in very large numbers by the Europeans at very hard labor it is possible that others particularly in the regions where gold mining was done were used even more harshly. Concern for such workers was mentioned frequently during the sixteenth century. López de Velasco voiced this alarm when he observed that Indians in tierra caliente had been numerous, but were diminishing day by day because of the work that they did in the mines⁸⁷. While disease had a great deal to do with native decline, the losses had economic, social and political causes as well. It is hoped that in the future we can create some sort of index of stress in colonial systems correlated to the health and quality of life of different native peoples, American, European, Asian, and African, that is to say the human cost of empire building.

⁸⁷ LÓPEZ DE VELASCO [9], p. 180.

Studies done on Colombia's population history during the last three decades have been influenced by the ideas, methods and approaches of Woodrow Borah. We will discuss three issues that he and Sherburne Cook considered in the course of their work on Latin American demography – probable size of native populations on the eve of European contact; the effects of climate and elevation on the intensity of different groups' decline; and the impact on native populations of diseases brought from the Old World to the New. We examine the information available on Colombia's diverse highland and lowland regions, and in that context explore questions that have arisen recently regarding nutrition and health levels of native people prior to European conquest.

KEY WORDS: *Colombia, Woodrow Borah, Native population, European contact, population decline, nutrition, health.*
