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REVIEW

Population Movements and Gene Flow in the 18th and 19th Century-Cameroon: Synopsis of Cameroon's Demographic History

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ABSTRACT

Before and during the 18th century, there was no Cameroon as it is known today. What European traders and missionaries knew about the country was limited to the coastal region. The Arabs from North Africa knew only the northern region of the country. After the Berlin Colonial Conference of 1884–85, the boundaries of the country were arrived at. This followed separate agreements signed by the Germans and the British to the West and with the French to the South, East and North.

However, the peopling of Cameroonian territory took place in pre-historic times. However, the movement of populations from diverse directions began a few hundred years ago and continued through the 18th and 19th centuries until it reached its present stage of stabilization and organization. Written evidence indicates that the Pygmies are the oldest inhabitants of the territory, probably followed by the Sao, who established a civilization around the Lake Chad basin in the fifth century. The civilization is said to have attained its apogee in the 15th century. Apart from these two groups of people, there is almost no evidence of any settlements or large-scale movements of people into the area in pre-historic times. There are movements currently underway within the territory, but they are essentially an adjustment of people, moving from overpopulated and less prosperous regions to underpopulated and more prosperous ones.

In the course of the disorderly migrations, most of the groups underwent various social changes that broke them up into numerous subgroups inhabiting isolated geographical areas and developing linguistic, social, and economic lifestyles that were different from one another. However, because of economic and social development in recent years, different peoples have been able to come in contact with outsiders and have ceased to live in isolation. This paper has revealed that several factors necessitated population movements in the 18th and 19th century-Cameroon. Some of the factors were the search for fertile land, the search for trading opportunities, inter-tribal wars, the payment of tributes and others. The individuals who migrated and reproduced in their locations (settlement sites) contributed to the gene pool of their host populations.

Keywords: Bantu speaking, gene flow, mitochondrial DNA, Y chromosome.

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1. Introduction

The Republic of Cameroon is at the north-eastern end of the Gulf of Guinea. It lies between latitudes 8° and 16° east of the Greenwich Meridian and between Latitudes 2° and 13° north of the Equator (Neba, 1999). To the south, the country is bordered by Equatorial Guinea, Gabon, and Congo; to the West by Nigeria; to the east by the Central African Republic and Chad; and finally, to the north by a narrow portion of Lake Chad. The territory is shaped like a carelessly drawn rectangle about 7000 kilometers wide and 1,200 kilometers tall. Cameroon has a diverse geography, a wide variety of climates, and varying rainfall levels. There is a marked south-north gradation in climate. The south is

equatorial with two rainy seasons and two dry seasons, the middle belt experiences a savannah climate with one dry season and one rainy season, and the northern part has a semi-desert or Sahel climate with a short rainy season of about three months and a long dry season. Corresponding with the climatic zones is a south-north gradation of vegetation: dense forest, Guinea savannah, Sudan Savannah and thorn steppe. The main annual temperatures range from 36 °C in the equatorial forest region to 46 °C in the Sahelien north. Along the coast and in the mountains, annual rainfall is over 4000 mm, and it rains more than 220 days per year, with the highest intensity occurring between July and September (Fossung, 1983).

In the forest region, ferralitic soils predominate. These, although poor in mineral content as a result of leaching, support plantations of oil palms, rubber, coffee, and cocoa, especially if they are treated with fertilizers. Also found in the isolated areas in the forest region are brown soils of volcanic origin, common in the high-altitude areas of Fako, Meme, Menoua, Mifi and Nde divisions. The Savannah and Sahel regions are composed of ferruginous soils, which are characterized by underlying hard pans (Loung, 1973). Although the flood plains of Benue and Logone are rich alluvial deposits cultivated for groundnuts, cotton, millets, sorghums, and rice.

The Republic of Cameroon has a variety of ethnic groups that speak different languages. The southern forest is dominated by Bantu-speaking people such as the Mbo, Bakweri, Bakossi, Bakundu, Ballung, Bassa, Beti, Bakoko, Fang, Maka, and others. Within the southern forest region are pockets of Pygmies. To the north of the Bantu speakers are the semi-Bantu, locally known as Bamileke, Widekum, Bamum, Nso, Baya, Kom and others. In the northern region are the Sudanese, Negroes, Hamitic Fulani and Arab Shuwas (Fossung, 1983). These measure groups can further be broken down into Wawa, Moundang, Msaa, Tupuri, Doowaayo, Kapsiki, Guidar, Musgum, Kotoko, Pape and others.

The land of Cameroon is as old as the rest of the world, but when we talk of Cameroon in terms of a geopolitical entity, one may say that Cameroon did not exist before the arrival of the Germans in July 1884. In ancient times, Hanno, the Carthaginian navigator, saw Mount Cameroon and called it the 'Chariot of the gods.' It was presumably the Cameroon Mountain in the throes of a serious volcanic eruption, for he wrote, 'We saw at night a land full of fire. In the middle was a lofty fire larger than all the rest that seemed to touch the stars' (Neba, 1999).

In 1472, the Portuguese navigator Fernando Po arrived on an island situated some 35 kilometers off the coast of Limbe (former Victoria) and gave his name to it. More Portuguese arrived and settled there with him. As time went by, and especially during the second half of the sixteenth century, Portuguese traders who had come up the Wouri estuary found a great variety of prawns in the river and named the river Rio dos Cameroes, meaning the River of Prawns. The Spanish version of Cameroes is Camerones, which later gave rise to the name Cameroons. It is from this Spanish version that other spellings were derived, depending on which colonial power was involved. The Germans spelled it Kamerun, the French Cameroun, and the English spelt it Cameroon. Today, there are two official forms: Cameroon and Cameroun, used in English and French, respectively.

During the scramble for Africa in the nineteenth and twentieth centuries, Cameroon became a German protectorate when the coastal chiefs of Cameroon signed the Germano-Duala Treaty with German traders in July 1884. A German administration was then set up and headed by a governor, who had the powers of levying and collecting taxes, lawmaking, administering the court system, and directing military operations. To facilitate the activities of the governor, the territory was divided into districts headed by military commanders who performed the duties of the governor in their districts (Fossung, 1983).

During the First World War in 1916, the Germans were attacked and defeated in Cameroon by the combined forces of Britain and France. Following that defeat, Cameroon was partitioned into British and French spheres of influence, given formal recognition by the League of Nations in 1922, when these territories became the League of Nations mandates under the administration of Britain and France. Britain had about one-fifth of the territory, consisting of two separate narrow strips of land to the east of Nigeria. The British administered their own part of Cameroon with Nigeria. Northern Cameroon was administered with Northern Nigeria, while Southern Cameroons were administered as an integral part of Eastern Nigeria. The British colonial policy of indirect rule was applied, and the Northern and Southern Cameroons were divided into districts and sub-districts headed by district officers and local officers, respectively.

French Cameroon was administered as part of Equatorial French Africa and was considered a French overseas territory. All economic, political and social developments in the territory were directly linked with French Equatorial Africa in general and France in particular. The United Nations granted autonomy to French Cameroon in 1958, and the French formally ended their control in 1960. In the British Cameroons, the United Nations supervised a plebiscite in which the people had to decide whether to continue as part of Nigeria or join the French Cameroon. The people of Northern British Cameroon opted to continue as part of Nigeria, while British Southern Cameroon joined the former

French Cameroon. In October 1961, there was an official reunification between former Southern British Cameroons and former French Cameroons, who formed the Federation of Cameroons. The former French Cameroon was named the state of East Cameroon, and the former British Cameroon was named West Cameroon.

From 1961 to 1972, East and West Cameroon were governed as two federated states. In West Cameroon, the main decision-making institutions were the West Cameroon House of Assembly, the West Cameroon House of Chiefs and the Government of West Cameroon, while in East Cameroon, there was the East Cameroon House of Assembly and the State Government. However, in 1972, the federal system was replaced by the unitary system–The United Republic of Cameroon. In 1984, the word united was dropped. The reason advanced was that from the time the name Kamerun was applied to the territory in 1884, Cameroon has always been one nation, and the division of East and West was an arbitrary undertaking by foreign imperialist nations at a meeting in which Cameroonians were never represented, and their consent was not even sought (Neba, 1999). The intent of this paper is to prove that in this country that has a striking geographical diversity and a complex triple historical heritage, population movements in the 18th and 19th centuries were necessitated by a good number of factors. Those individuals who moved into new regions and were biologically reproductive influenced the gene pool of their host populations. Those who were not reproductive died, and their sex-specific or sex-determinant genes were lost to history.

2. Results and Discussion

2.1. Fundamental Causes of Population Movements in the 18th and 19th Century Cameroon

The recurrent movements of both major and minor ethnic groups were caused in Cameroon by multiple factors. It might be plausible to commence the discussion with the Fulani Jihads of the early 20th century. The Jihads, or holy wars, which were launched from Nigeria by Uthman dan Fodio, had a destabilizing influence on several ethnic groups in Cameroon. Uthman (Osuman, Usuman) dan Fodio, a fanatical and fearless Muslim convert, wanted to establish a great Muslim caliphate with headquarters at Sokoto in Northern Nigeria. The effect of the spread of Islam through wars and the whole movement of discontented people led to the establishment of important Islamic theocratic states such as Ngaoundere, Garoua, Rey Bouba, Banyo, Maroua, Yagoua and others. It also led to the extension of the map of the Islamic region as far south as the Nso and the Bamum country. The emergence of disagreement between these theocratic states further led to the establishment of significant Islamic polities. The holy wars led to the movement of some Cameroonians into Chad, Nigeria and other areas.

Intertribal wars were also very common during the nineteenth century. Several factors contributed to this state of affairs. Powerful Cameroonian polities were determined to raid and subjugate their neighbours. For instance, when the Bafut subjugated the Tingoh, Obang, Mbakong and Ndung people, they crossed rivers Menchum and Muteh to subjugate the Bu of Menchum Division. When the Nso settled after their migration from Rifum, they launched wars against their neighbours, such as the Nkars, defeated them and imposed rulers on them. More so, powerful kingdoms fought with one another as a manifestation of strength. This was also done to occupy enough land for the purpose of agriculture. Inter-tribal wars were caused by the trade in slaves. The slaves, once captured, were sold to European merchants who were stationed along the coast. This trade forced many groups of people to escape from the slave raiders. Fairly large kingdoms like the Bali captured slaves from other villages and sold them to the middlemen from the coast. In some cases, the Germans instigated some *fondoms* to fight against others. They did this because they discovered that the people were not friendly. The Balis were used by the Germans to fight against the Bafut and the Mankon. These wars led to significant population displacements in different parts of Cameroon.

Before 1870 and 1871, when Italy and Germany achieved their unification, the economic situation was different in these countries. The several mini German and Italian states acted as markets for the manufacturers of industrial countries in Europe, notably Britain. There was no protective trade. After 1871, the story became different. As new states, Germany and Italy erected protective barriers in order to encourage the growth of their infant industries, Britain and other industrial countries followed suit. The ambition of Germany was to become an industrial power comparable only to Britain. In order to realize this dream, light and heavy industries were set up. Germany was also to make use of her colonies. Through the influence of businessmen and the colonial society, Germany was forced into the race for the acquisition of colonies. The Germans then embarked on the establishment of plantations in Africa, especially in Cameroon. The effect was that it led to the emergence of new patterns of labour migration from the hinterlands (like Mbo) to the coast (like in the Bakweriland). The Bamileke, an enterprising business group, were encouraged by the Germans to migrate to the coast in order to work

in the German plantations. The Germans established friendly ties with some fondoms, such as Bali, in order to have a steady supply of labour.

The presence of the Dutch, French and British traders along the coast of Cameroon significantly contributed to the movement of different populations. Migration on a large scale began with the trade in slaves, who were needed to augment the labour force on European plantations in the Americas. This went on for a very long time under inhumane conditions until 1815, when Britain decided to bring a final end to it. The trade in slaves continued clandestinely with efforts by Britain to stop the transhipment of slaves along the coast. The trade in slaves finally gave way to the trade in 'legitimate' items. This trade further increased the volume of migration, especially with the increase in the number of middlemen in the process (Dong-Mougnol, 2005).

Furthermore, there arose trade between the Grassfields and the southeastern Nigeria and between the Fulani of Northern Cameroon and Northern Nigeria. Some of the items traded included embroidery products and kolanuts. Traders from Cameroon went as far as the present-day Kano, Sokoto, Maiduguri and other Nigerian towns. Trade in commodities also took place between the coastal people and Southern Nigeria, which was an important business region. This was because the British were already settled in the Lagos Colony by 1861. Many coastal regional inhabitants, therefore, migrated to Nigeria in order to sell and buy goods of different kinds. The payment of tribute to stronger groups also contributed to population movements in Cameroon.

The most powerful *lamidats, fondoms*, and chiefdoms used their influence to subjugate weaker neighbours and force them to pay tributes. The Bafut, for instance, succeeded in obtaining tributes from the people of Mundum, Tingoh, Obang and Ndung. They were unsuccessful when they confronted the people of Bu (a village in Menchum that shares boundaries with the Boyo and Mezam divisions). What they succeeded in was that they contributed to the migration of the people from their former site, Kulinaiwile (the old town hill), to the present site where they are settled. Some large polities, on the other hand, launched raids against others in order to obtain tribute, which was in turn paid to a more powerful polity. The Fulani, for example, raided the Gbaya region for slaves who were taken to Ngaoundere and then sent to the Emir of Yola, Adama or his successors as tribute. In some cases, they entered into alliances with the Gbaya, captured slaves and seized ivory from the surrounding regions. In effect, the Fulani created great terror in northern Cameroon. In the course of these raids, the Gbaya and their neighbours were displaced. Some of them migrated northwards, others southwards and some eastward. Besides, the established powerful chiefdoms of the southern region (Bakweris, Dualas, for instance) succeeded in imposing their suzerainty over relatively weak neighbours such as Ballung (Balong), Bafaw and others.

After the annexation of Cameroon in 1884, the Germans embarked on wars of penetration and subjugation. This was intended to accomplish the prime purpose of economic exploitation. Fierce resistance to German penetration and administration came from all over the Cameroonian territory. Some of these people who resisted the Germans included the Bulu, Ewondos, Dualas, Bakweris, Banyang, Bangwa, Bafut and Nso. After containing these uprisings against them with superior weapons, some of the leaders were exiled, and those who resisted defeat migrated with their followers to new grounds. Population movements of this nature were most ramifying because of many other movements which took place afterwards.

The Fulani introduced cattle to Cameroon. One factor that contributed to their migratory tendency was the search for grazing land for their cattle. Many of them kept migrating outwards in search of enough grazing land. When they secured land, some of them became settled people as long as they were not disturbed by the indigenous populations and incoming invaders. When disturbed by incoming people, they moved away from the mountain regions into the valleys. The presence of annual grass kept them there as long as there was no flooding. During the wetter part of the year, they left the valleys and went back to the hills (this is rampant in the Wum area in the North West Region of Cameroon). The newfound religion also brought about differences between believers and non-believers. Non-believers congregated somewhere, and believers settled together. Such a situation promoted the constant movement of people as the non-believers were looked upon by the Islamic converts as pagans or infidels. The search for grazing land took many of them further south into the present-day North West and Western Regions.

Before the active presence of European traders along the coast of the Cameroonian coast, there was migration of restricted nature. An increase in the volume of trade led to an improvement in water transport. Sea-going vessels could carry people from one point to another along the coast, especially in Douala, Victoria Limbe and Kribi. Movements of people from the coast of Victoria (Limbe) to Douala and then to Kribi and from Kribi increased considerably. This interchange of population within the coastal peoples accelerated as the volume of trade increased tremendously. This was especially so in the last quarter of the 19th century. Tracks of roads were equally developed along the coast to facilitate population movements.

Some groups of people who could not withstand constant raids from warriors and wandering people decided to migrate elsewhere. The raids from the Fulani into the Gbaya region forced them to seek peace elsewhere. All over the country, weaker people had to escape from stronger neighbours for peace elsewhere. As mentioned earlier, some powerful fondoms, such as Bali, were aided by the German authorities. This search for peace was an ongoing process because people were constantly moving from one geographic region to another. There was the usual intermixing of people of a common descent and who shared common customs. The Banyang and Keyaka are known to have been migratory people during the past two centuries. Many of them migrated to southeastern Nigeria to meet the Ekoi stock with whom they share cultural traits. There was the intermingling of the Dualas and the Bakweris partly because of their common culture and linguistic similarity. The Fulani of North Cameroon, Chad and Nigeria moved across frontiers and easily co-habited with the Hauasas from Northern Nigeria because of cultural similarities.

In the 18th and 19th centuries, nature was a determining factor in population settlement. Since Cameroonians could not readily improve the fertility of the soil due to the prevailing low technology, they had to migrate to the areas that were blessed with fertile land. The search for fertile land for agricultural purposes, therefore, became the order of the day in some Cameroonian polities. The Bamileke who wandered in search of fertile land for agriculture are currently numerous in Mbo towns such as Santchou, Melong, Nkongsamba and others. Some of them who migrated to the West found solace when they met the Mbo, who were very welcoming.

2.2. Migration of Bantu-Seaking People across Cameroon

The appellation Bantu originally means 'men,' and the singular is Muntu (Downie, 1938). Bantu is a linguistic term applied since 1862 to a particular group of languages spoken by Black Africans south of a line running east from Northern Cameroon to Southern Somalia. Since the second decade of the twentieth century, conflicting theories have been advanced by several scholars concerning the origin and spread of Bantu speakers to areas they now occupy on the African continent. Scholars were able to deduce from studies of African languages that Bantu speakers must have had a common cradleland from where they quickly spread to occupy a vast area of Africa. Cameroon has been closely associated with some of the theories of Bantu origin and migration (Fanso, 1989).

The next attempt to trace the origin of the Bantu speakers was made by Joseph H. Greenberg. Greenberg classified the Bantu languages as a subgroup of a larger and geographically extensive subfamily known as Niger-Congo. He argued, from this, that the original home of the Bantu speakers was in the central Benue Valley along the present-day Cameroon-Nigeria border (Greenberg, 1978). Fanso suggests that Malcolm Guthrie used evidence of sound shifts from many Bantu languages to identify the source area for the Bantu in the savannah country of Central Africa, just below the equatorial rainforest. Guthrie explained that the similarity between certain West African languages and Bantu are traces or signs of the extinct pre-Bantu tongue, which was spoken in the Lake Chad area. From the Lake Chad region, some pre-Bantu speakers travelled west to the Niger region, where they fused with already speakers of non-Bantu languages. Others moved south by canoe down the rivers of the Congo rainforest to the savannah country of Central Africa, where they settled and developed the proto-Bantu culture, which evolved into Bantu civilization during the later migrations (Fanso, 1989).

Besides the popular view that the origin of the Bantu speakers was along the Cameroon-Nigeria border, new linguistic evidence put forward by the eminent African historical linguist Jan Vansina, who suggests that a region in westernmost Cameroon was the cradleland of the Bantu speakers (Vansina, 1995). Vansina refers to the Kupe Mwanenguba area where the Bakossi are presently settled. This refinement appears to be the most recent suggestion and the most credible view on the origin and migration of Bantu speakers.

The routes followed by the Bantu speakers during their migrations from their cradleland to their present locations still remain a problem as confusing as their origin. However, the Bantu speakers swept south from their homeland to South Africa. At first, they went around the equatorial forest, but later, they went through the rainforest and across the northern parts of Congo to Gabon and Cameroon (Fanso, 1989). Fanso reports that Murdock, who believed that the Bantu migrations began to move southeastward from the Cameroon-Nigeria area after the first century AD, thought that the first group penetrated south into the rainforest, while the second went directly to the east towards the Great Lakes.

John Iliffe suggests that the eastern forest and its margins were the regions from which Bantu speakers gradually expanded throughout the southern half of Africa. All Bantu languages form only one branch of the Benue-Congo group of Niger-Congo languages. The other Benue-Congo languages radiate out from the Niger-Congo confluence, indicating that this must also have been the Bantu homeland. It is likely that the Bantu languages were carried by colonists who also took agricultural skills into regions where they were often hitherto unknown. The descendants of these colonists still

possess considerable genetic and linguistic homogeneity. Theirs was one of the greatest migrations in human history (Iliffe, 1995).

The ancestral Bantu language had words for yam and oil palm. Linguistic evidence, according to Iliffe (1995), suggests that speakers of this language began to divide some 5,000 years ago. Some groups moved slowly eastwards along the northern fringe of the equatorial forest towards the Great Lakes of East Africa. Others evolved in or near the Grassfields of modern Cameroon, developing a language with terms for cultivation, axe, goat and cattle, together with fishing and boating vocabulary. From about 1000 BC, as desiccation thinned forest margins, these more westerly Bantu speakers carried their distinctive culture into the north of modern Gabon and down the western edge of the forest to the lower reaches of the River Congo, where archaeologists have found evidence of it at c. 400BC. They were to continue southwards as far as the north of modern Namibia, where they were presumably checked by the arid fringes of the Kalahari. On the way south, pioneers broke away eastwards up the river valleys through the equatorial forest, carrying their languages and their stone-using culture as far inland as the south-western border of modern Sudan, the western shore of Lake Tanganyika, and the middle Zambezi. They may have learned to rely upon the plantain, which was to become the staple crop of the equatorial forest.

Yet, this was only the first phase of Bantu expansion. Most modern Bantu languages of eastern and southern Africa are not derived from the western Bantu groups but from those who had penetrated eastwards to the Great Lakes, where archaeological evidence suggests that they arrived around 1000 BC. Further expansion into the savanna of eastern and southern Africa now became possible only when these Bantu groups added grain cultivation to their previous forest agriculture. Linguistic evidence of borrowed words suggests that they learned to grow cereals (chiefly sorghum) in the Great Lakes region from the Nilo-Saharan-speakers who had brought the skill southwards from the Nile valley. It was probably here that the Bantu speakers learned a further skill–to work iron. Whatever route is suggested by scholars, it is evidence that the Cameroon Bantu speakers massively migrated northward from their cradleland to the Lake Chad region.

Two factors necessitated the massive migration of the Bantu speakers. First, a good knowledge of iron technology or iron-working played a preponderant role. The early Bantu speakers were a dominant minority who specialized in hunting with the iron spear, attracted new adherents, and left new bands of migratory adventurers everywhere until the whole southern continent was iron-using and Bantu-speaking. The Bantu speakers also needed iron to produce farm tools that would enable them to carry on agriculture in the forest and savannah region. Second, the introduction of Malaysian crops from Southeast Asia and their subsequent diffusion to the Bantu homeland in the West were factors influencing the Bantu migrations. These Malaysian crops–banana, colocasia and the imported yam–made it possible for the Bantu speakers to survive in the forest areas and to feed a much larger population.

Nevertheless, this massive migration of Bantu speakers did not match the proportionate diffusion of food crops. Had the Bantu speakers migrated with all their crops, then the same crops should have been grown throughout Cameroon. This implies that some crops were left behind probably because they could not flourish in the new ecological settings. A few examples might suffice to substantiate this viewpoint.

A native African crop such as the black plum or West African plum grew only in southern Cameroon amongst the Bakweri, Mbo and Bamum. The absence of this fruit in the north-south axis of Cameroon indicates that the crop could only grow in the tropical rainforest and in the savanna region. The Sahel vegetation did not, therefore, favour the cultivation of the plum fruit.

The proto-Bantu grew the oil palm (Polomé, 1975), which was of African origin. Just like the plum tree, this palm was grown exclusively in southern Cameroon among the Bakweri, Mbo and Bamum. On the basis of this evidence, it can be deduced with a high degree of certainty that the Bantu speakers left this crop in Southern Cameroon while migrating northward.

There is sufficient supporting evidence suggesting that in north Cameroon and in the entire Sudan area, the Bantu speakers domesticated certain food crops. A prominent example that can be advanced to support this viewpoint is that of millet. This cereal native to the African continent was not found in southern Cameroon. The availability of this cereal among the Wawa, Doowaayo, Guidar and Kotoko, where it served as an important item in the local menus, indicates that the crop could not flourish in southern Cameroon.

Linguistic evidence on the proto-Bantu reveals that there was an indigenous Bantu term for the semi-domesticated baobab tree. However, the baobab tree was not cultivated in southern Cameroon. The unavailability of this tree and other foods in southern Cameroon indicates that the Bantu speakers did not migrate with all their food crops.

There is no doubt that the Proto-Bantus were agriculturists (Vansina, 1995). Although it has been argued above that they did not migrate all through the length of Cameroon with their food crops,

there was, however, a handful of crops which the Bantu speakers carried along with them through the length of Cameroon. A conspicuous example that can be advanced to support this viewpoint is okra and the small-grain hot pepper. These two vegetables were indigenous to Africa at large and Cameroon in particular. The availability of these vegetables in all the ethnic groups in Cameroon indicates that there was a positive correlation between the Bantu speakers' migration and crop diffusion in Cameroon. Another important indigenous food crop with which the Bantu speakers migrated was the indigenous African yam, often referred to as yellow yam. This highly nutritious yam flourished all through Cameroon, a convincing indication that the early Bantu speakers migrated with some of their food crops.

Tambi Eyongetah and Robert Brain have intelligently tackled the problem of Bantu speakers' migration and crop diffusion. According to them, the introduction of the foreign varieties of yam and the banana into Africa in the era preceding the birth of Christ (Mbida *et al*., 2000) enabled Bantu speakers to exploit the forests of the hunting groups. Eyongetah and Brain (1974) put forward that the original Bantu group cultivated millets and sorghums, all crops that flourished only in Savannah. Eyongetah and Brain argue that these crops were brought into Cameroon from East Africa across the Savannah belt. The Bantu hoe-cultivators who lived on the edges of the forest adopted the yam, plantain and cocoyam, and Cameroon became the centre of a great agricultural revolution and the departure point for the Bantu people (Eyongetah & Brain, 1974).

In a nutshell, the fresh evidence obtained from the above analysis demonstrates that although Bantu languages spread east and their speakers are credited with introducing agriculture further east and south, they did not take crops from their starting point with them. Had it been they migrated with their crops, then the same crops should not only have been grown in a north/south transect running the length of Cameroon but all over the African continent where they are currently settled. However, it is improbable to expect the same crops to be grown all through the length of Cameroon and wherever Bantu-speaking peoples are found in Africa, granted the fact that different regions in Africa, in general and Cameroon, in particular, have different ecological settings.

Since wild bananas (*Musa*) are not native to the African continent, the occurrence of *Musa* in archaeological data gathered in Cameroon unequivocally points to the cultivation of bananas most probably by the middle of the last millennium B.C (Mbida *et al*., 2000). Direct evidence for the antiquity of the crop in Africa has far-reaching implications. From a methodological point of view, *Musa* provides archaeologists and archeobotanists, for the first time, with the means to demonstrate the practice of crop cultivation in humid tropical Africa more than two millennia ago. *Musa* is an ideal staple crop for agriculture in the rainforest, and its early presence in Cameroon could explain the increase in village density in the forest environment during that period. It should also improve our understanding of the early stages of Bantu expansion.

2.3. Y-Chromosome and Mitochondrial DNA

All human cells (other than mature red blood cells) possess a nucleus, which contains the genetic material (DNA) arranged into 46 chromosomes, themselves grouped into 23 pairs. In 22 pairs, both members are essentially identical, one deriving from the individual's mother and the other from the father; such pairs are known as autosomes. The 23rd pair is different: while in females, this pair has two like chromosomes called "X," in males, it comprises one "X" and one "Y," two extremely dissimilar chromosomes. It is primarily these chromosome differences that determine sex. During the production of sperm and eggs (gametes), the paired chromosomes separate so that each gamete ends up with only one member of each chromosome pair. However, before separation occurs, the paired autosomes swap pieces of their DNA with each other. In women, this exchange process also takes place between the two X chromosomes, but in men, unmatched X and Y chromosomes do not exchange except at the ends of two chromosomes, referred to as the pseudoautosomal regions (Bradman & Thomas, 1998). All eggs (produced by females) contain an X chromosome, while sperm (produced by males) contain an X and Y (Mange & Mange, 1999). Fertilization restores the chromosomes to their normal paired condition. Thus, a Y sperm fertilizing the X (all eggs carry only the X chromosome because females have no Y) produces an XY zygote (cell produced by the union of two gametes), which develops as a male; fertilization by an X sperm definitely gives rise to a female XX zygote. Since every male must possess a Y (or male) chromosome, which can be exclusively inherited only from his biological father, a man's Y chromosome represents a unique record of his paternal inheritance.

Mitochondria are structures within cells that convert the energy from food into a form that cells can use. Although most DNA is packaged in chromosomes within the nucleus, mitochondria also have a small amount of their own DNA. This genetic material is known as mitochondrial DNA (mtDNA). The first DNA polymorphisms examined in humans for evolutionary purposes were from mitochondrial DNA. Mitochondria are self-reproducing units contained in all cells of higher

organisms (eukaryotes, from fungi to mammals), usually in many copies per cell (up to 10,000 or more) (Cavalli-Sforza *et al*., 1996).

Mitochondria are normally transmitted exclusively by the mother but are present in both sexes (recall that all mitochondria in a fertilized egg come from the egg only; that mitochondria that are present in the tail section of the sperm are usually destroyed by the egg cell during the formation of the zygote definitely the genes in mtDNA follow an exclusively maternal inheritance pattern, generation after generation, without any reassortment or crossing over). So, any trait associated with a mitochondrial gene must be transmitted by the mother to all of her children, both male and female. In the other direction, this lineage should extend from any individual through the mother, maternal grandmother, maternal great-grandmother, and so on, as far back as humans existed (Mange & Mange, 1999). The maternally inherited mitochondrial DNA (Smith, 1989) is being widely used (in population genetics, genetic history and other genetic studies) to infer aspects of human female population histories (Wilson *et al*., 2003). This implies that if a population receives a higher number of reproductive females than another, its mtDNA diversity will be higher than that of the population that receives less. In the same light, if a population receives more reproductive men than another population, its Y chromosome diversity will be higher than the one that receives less. This analysis is based on the fact that the Y chromosome is inherited exclusively paternally, while the mtDNA is inherited exclusively maternally, as discussed above. If a male migrates and does not give birth to a son or sons, his Y chromosome gets lost in history, and in the same way, if a female should migrate and does not give birth to a child (be it male or female), her mtDNA also gets lost in history. It is very imperative to make the point clear that only reproductive men and women influence the gene pool of their respective host populations. This leads us to discuss migration and gene flow in Cameroonian populations.

2.4. Migration and Gene Flow

We have discussed the fundamental factors that led to population movements in 19th century Cameroon. We have also discussed the factors that necessitated the movements of the Bantu-speaking people across Cameroon. It has also been illuminated above that the Y chromosome is inherited exclusively paternally, while the mtDNA is inherited maternally without an exception. These genes are known as sex-specific or sex-determinant genes.

Now, we briefly consider allele frequency changes due to migration between and among populations. Human migration is the movement of populations, groups or individuals from one place to another. Pre-historic migrations (for instance the Bakweri from Bamboko to the foot of Mount Cameroon, the Mbo from Muaneguba to Mbo villages, the Bamum from Rifum to Foumban, the Wawa from Sudan to Oumyari-Wawa, the Doowaayo from Yoko to Poli and the Kotoko from the Nile Valley to the Lake Chad region) often involved movement into previously uninhabited regions, where new environments must have imposed new selective pressures. More recent migrations have been into already occupied territories (for example, Europeans and Africans into the New World). Although the immigrants may remain genetically isolated from their neighbours, usually some interbreeding occurs, leading to subsequent generations of mixed populations. Such a striking mixed population is found in Cameroon between the Pygmies and the Bantu-speaking people, as well as between Bantu-speaking people and Fulani (Fomine, 2015).

Migration will generally unify gene frequencies among populations rapidly in evolutionary time. In the absence of selection, migration is a strong force for equalizing the gene frequencies of sub-populations in a species. Provided that the migration rate is greater than zero, gene frequencies will eventually equalize. Even if there is only one successful migrant per generation, gene flow inevitably draws the population's gene frequency toward the species' average. Gene flow thus acts to bind the species together.

Natural populations of a species are typically not isolated but instead exchange genes with one another to a greater or lesser extent. This process is called gene flow. In reality, gene flow or gene migration is the movement of genes from one population into the gene pool of another (Futuyma, 1998). In other words, it is the transfer of genetic material between separate populations via interbreeding. Many organisms are divided into separate populations that have restricted contact with each other, possibly leading to reproductive isolation. Many things can fragment a species into a collection of isolated populations. For example, a treacherous mountain pass may cut off one herd of mountain goats from another. In human beings, cultural differences, as well as geographic separation, maintain separate populations. It is more likely that a person will marry and have children with someone who lives nearby and speaks the same language. Over time, reproductive isolation can lead to genetic differences between two populations. Gene flow between populations limits this genetic divergence, serving to inhibit the development of separate species out of the two separated populations.

Migration has been a significant feature of human history in both pre-historic and more recent times. No gene flow occurs if an individual migrates into a different population but does not reproduce.

The migrant's genes must become part of the genetic makeup of the population into which it has migrated. In most populations, not all individuals contribute equally to the next generation. Because each individual can have different alleles, when only a subset of individuals reproduce, allele frequencies change from generation to generation, and some alleles may be lost. A change in allele frequency due to random chance is known as genetic drift, whereas a change due to differences in reproductive fitness is known as natural selection. Gene flow between isolated populations slows down their genetic drift from each other and reduces the power of natural selection to promote divergence between them. When there is a great deal of gene flow between populations, they tend to be similar; in this way, gene flow has a homogenizing effect. The opposite also tends to be true: If there is little or no gene flow between populations, the genetic characteristics of each population are more likely to be different.

Gene flow does not just occur between two populations. When a series of populations exist over a large area, gene flow may serve to keep even the most distant populations similar to one another (as the case is in Cameroon, where haplogroups found in Guider are present in the Bakweri area). This can occur even if they do not exchange individuals or gametes as long as the alleles from one population eventually flow into the other population through a series of migrations or gamete movements. Similarly, this type of graded gene exchange can also overcome other types of separation. For instance, among dogs, Great Danes and Chihuahuas cannot breed directly because of size incompatibility. However, gene flow in both directions, through intermediate-sized dogs, keeps these two breeds from becoming separate species.

Certain obstacles prevent the flow of genes between the populations of the same species. Physical barriers to gene flow are usually, but not always, natural. As earlier indicated, they may include impassable mountain ranges, oceans, or vast deserts. In some cases, they can be artificial, man-made barriers, such as the Great Wall of China, which has hindered the gene flow of native plant populations. Samples of the same species, which grow on either side, have been shown to have developed genetic differences because there is no gene flow to provide recombination of the gene pools. Barriers to gene flow need not always be physical. Species can live in the same environment, yet they show very limited gene flow due to limited hybridization or hybridization, yielding unfit hybrids.

Inter-group marriage also enhances gene flow from one population to the other. Wife giving and wife receiving is an inter-group social custom that dates back several millennia in Cameroon. For instance, the *fons* of Bali, Mankon, and Bafut–rulers of some fairly large chiefdoms in the Bamenda Grassfields–have always made it a duty to marry some of their wives from the chiefdoms with which they have established harmonious relations. Through such marriages, the genes of their foreign wives are introduced into their populations.

Mixed and trans-frontier marriages are also common among the people of Wouri-Mungo Valley. Inter-group marriages between the peoples of Douala, Bimbia, Bakweri, Mungo, Pongo, Bodiman, Wouri, Malimba, Batanga and other related peoples are said to have been common in the past as they are today and have therefore fostered the flow of genes from one population to the other. Northward from the coast, similar marriages are common between the Balung and the Mungo, the Bakossi and Mbo, the Mbo and Bangwa and the Bafaw and their neighbours. These inter-group marriages significantly influence gene flow from one population to the other.

Long-distance trade, which is conducted over long distances between culturally different people within a region or across a region, also helps to introduce the genes of one population into the other. Some of the items that are featured in the long-distance trade in Cameroon include kolanuts, salt, smoked fish, cloth, palm oil, cocoa, coffee, electronics, liquors, and others. In some parts of Cameroon, for instance, among the Mbo, traders of these items trek for several days and stay the nights in different villages before finally reaching the market site. Even when they finally reach the market, trade transactions sometimes exceed a week. During the period that traders stay in the market site, mating between the traders and the local population is partly responsible for the variation in the distribution of the y chromosome and mtDNA in Cameroon. Moreover, nowadays, itinerant Hausa hawkers and Igbo mobile merchants take intermittent residence in several parts of Cameroon, such as Mboland. These businessmen father the children of money-minded housewives and public girls and consequently leave their genes behind when they depart to their respective areas of origin.

Civil celebrations carried out on national holidays, notably February 11 and May 20, also provide convenient opportunities for Cameroonians of diverse origins to converge for choral competition, athletics and other purposes. During such celebrations in remote areas, loyal citizens trek for several days before reaching the celebration site. The citizens (both men and women) generally make their journeys on foot and in groups. But when they arrive at the celebration centre, they stay the nights independently with the local folks. These dusky contacts, which lead to copulation and pregnancy, furnish opportunities for gene admixture in Cameroon.

Religious celebrations in the Catholic Church during Esther Sunday, Christmas and Assumption Day also provide opportunities for Cameroonians to move in huge bands to mission stations.

Catechists, Catechumens, and Christians often move in huge numbers to where priests are stationed for different purposes, notably to receive the sacraments of baptism, matrimony, or communion. Some Catechumens leave their villages and take momentary settlement at the parish centre in order to follow up doctrine classes and receive Baptism in due course. The Christians and Catechumens, on their way, make overnight stops in several mission stations belonging to their denomination. There, they are received and fed by the fellow Christians of that mission. They stay the night in the mission house or in the homes of local Christians or benevolent pagans. This enhances group cohesion and accelerates gene flow from one community to the other as the hosts mix freely with the guests, exchange religious and other ideas, and jointly pray in the morning and evening before the departure of the guests. Many women often return from these religious feasts pregnant, thereby introducing the host's genes into their populations.

Inter-tribal wars, too, have significantly contributed to gene flow in Cameroon. After inter-tribal wars, captives were taken by the victors and assimilated into their communities. This led to the introduction of genes from different populations. For instance, in pre-colonial times, some of the huge palaces in the Western Grassfields, such as Bafut and Bamum, were usually staffed with captives who were in theory the property of the chief. In Kom, Bafut, Nso and Bali, all war captives were taken to the village ruler, who distributed them to noted warriors, regional representatives and vassal chiefs. The owner either kept such captives or sold them out. Interestingly, female captives were rarely sold. They were integrated into the household of their owner, where they performed farm work, domestic chores (Nkwi, 1987) and procreation. The male captives, on their part, fathered children with the wives of their masters, and by so doing, after inter-tribal wars, the genes of the vanquished flew into those of the victors.

Fleeing warriors and unarmed men also contributed immensely to gene flow in Cameroon during and after inter-tribal wars. For example, throughout the Western Grassfields, there were several receptions of groups of refugees fleeing as a consequence of armed conflict. Written evidence indicates that Babungo gave shelter to some groups from Bamali, Bangola, and Bambalang when these groups were harassed by the Bamum and Bali-Kumbat. During this period of shelter, social interaction and mating between the host population and the refugee became inevitable, and so did gene flow between the two populations. Similarly, in the 18th and 19th centuries, slavery and the slave trade also facilitated gene flow from one community to the other. For instance, the Lower Banyang acquired most of their slaves from Upper Banyang. A majority of the male slaves were sold, while a tiny fraction was kept for domestic work. A preponderant of the female slaves were kept as concubines, in which case the masters made children with them. This important phenomenon aided in introducing the genes of the Upper Banyang into the Lower Banyang society (Fomine, 2015).

3. Conclusion

This article has unravelled the role of fathers in human history by delineating the vital biological and historical role played by the Y chromosome that they carry and pass on to their male offspring during egg fertilization. The Y chromosome, therefore, remains a fundamental tool in the study of demographic history. It should come as no surprise that it is proving to be a powerful instrument in the demographic historian's toolbox (Bradman & Thomas, 1998), especially when considered along with mtDNA, which mothers pass to their offspring (both male and female). The mitochondria in the mammalian sperm are usually destroyed by the egg cell after fertilization. The high diversity of mitochondrial DNA in Africa has led researchers to infer that Mitochondrial Eve lived in Africa. This evidence has strengthened the argument of the proponents of the Out-of-Africa theory. In the same manner, it has weakened the argument of the few critics who still believe in the multi-regional theory.

Human migration has been an enduring and significant feature of history. Some people migrate voluntarily, while others do so forcefully. But, whatever reasons lead to migration, it obviously leads to gene flow. Nevertheless, the immigrants who do not succeed in reproducing within their new population do not contribute to gene flow. As human beings continue to migrate from their regions of birth to other areas, the phenomenon of gene flow continues, and as a result, human migration remains an important preoccupation in genetic history.

Conflict of Interest

The author declares that there is no conflict of interest.

References

Bradman, N., & Thomas, M. G. (1998). Genetics: The pursuit of Jewish history by other means. *Judaism Today*, *10*, 4–6.

Cavalli-Sforza, L. L., Menozzi, P., & Piazza, A. (1996). *The History and Geography of Human Genes*. Princeton University Press.

Dong-Mougnol, G. M. (2005). *Migrations interne et problèmes fonciers au Cameroun: Les cas de Makenene et Mbangassina dans la region du Mbam, de 1926 à nos jours* [Internal migrations and land problems in Cameroon: The cases of Makenene and Mbangassina in the Mbam region, from 1926 to the present day] [Unpublished doctoral dissertation]. University of Yaoundé 1.

Downie, R. A. (1938). *The Native Races of Africa and Madagascar: A Copious Selection of Passages for the Study of Social Anthropology from the Manuscript Notebook of Sir James George Frazer*. Percy Lund Humphries & Co LTD.

Eyongetah, T., & Brain, R. (1974). *A History of the Cameroon*. Longman.

Fanso, V. G. (1989). *Cameroon History for Secondary Schools and Colleges, Vol. 1: From Prehistoric Times to the Nineteenth Century*. Macmillan Publishers Ltd.

Fomine, F. L. M. (2015). *Patterns of food consumption in Cameroon: Contrasting oral history and genetic evidence from 1850 to 1985* [Unpublished doctoral dissertation]. University of Yaoundé 1.

Fossung, E. Y. W. (1983). *Rural-urban linkages: The case of the Southwest Province of Cameroon* [Unpublished doctoral dissertation]. University of Waterloo.

Futuyma, D. J. (1998). *Evolutionary Biology*. 3rd ed. Sinauer Associates.

Greenberg, J. H. (1978). Foreword. *Cameroon Bantu Languages*, *10*, 1–13.

Iliffe, J. (1995). *The History of a Continent*. Cambridge University Press.

Loung, J. F. (1973). *Le Cameroun*. Hatier.

Mange, E. J., & Mange, A. P. (1999). *Basic Human Genetics*. 2nd ed. Sinauer Associates.

Mbida, C. M., Neer, W. V., Doutrelepont, H., & Vrydaghs, L. (2000). Evidence for banana cultivation and animal husbandry during the first millennium BC in the forest of southern Cameroon. *Journal of Archaeological Science*, *27*, 151–162. https://doi.org/10.1006/jasc.1999.0447.

Neba, A. (1999). *Modern Geography of the Republic of Cameroon*. 3rd ed. Neba Publishers.

Nkwi, P. N. (1987). *Traditional Diplomacy: A Study of Inter-Chiefdom Relations in the Western Grassfields, North West Province of Cameroon*. Department of Sociology, University of Yaounde.

Polomé, E. C. (1975). The reconstruction of Proto-Bantu culture from the lexicon. *Patterns in Language, Culture, and Society: Sub-Saharan Africa*, *19*, 164–173.

Smith, J. M. (1989). *Evolutionary Genetics*. Oxford University Press.

Vansina, J. (1995). New linguistic evidence and the Bantu expansion. *The Journal of African History*, *36*(2), 173–195. https://doi.org/10.1017/S0021853700034101.

Wilson, I. J., Weale, M. E., & Balding, D. J. (2003). Inferences from DNA data: Population histories, evolutionary processes and forensic match probabilities. *Journal of the Royal Statistical Society Series A: Statistics in Society*, *166*(2), 155–188. https://doi.org/10.1111/1467-985X.00264.