Racial Continuity In Lower Nubia: 12,000 B. C. to the Present

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Abstract

An evaluation of the literature indicated that the Nubian populations in Lower Nubia living between Maharraga and the Second Cataract have been relatively stable for thousands of years. A two-stage project was launched to study the cranio-facial growth and variability of the populations of selected villages and to test the hypothesis that there has been no mass replacement of the population in the area. Cephalograms were obtained from 715 skulls from the C-Group, Meroitic, X-Group, Christian, and Moslem archaeological Periods and also from 1,000 living Nubians. Angular and linear measurements were entered into a series of multivariate statistical programs which were developed to indicate the differential growth between the interrelated dependent skeletal components of the cranio-facial complex. A preliminary inspection of the results indicates that there has been no replacement of the populations in the peasant villages of this region during the last 4,000 years. Due to an influx of foreign soldiers, there has been some population replacement in the garrison towns and perhaps also in the ancient administrative centers.

Introduction

This paper heralds the publication during 1968 of a monograph edited by Dr. James E. Harris and containing chapters by the various researchers who have participated in this predominantly cephalometric study of the ancient and modern Nubians. Therefore, it assumes the form of a combined preliminary and progress report.

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The Racial Background

For over 5,000 years, since King Menes of the First Dynasty shortly after 3,400 B.C. sent an army up the Nile to subdue the tribes and exploit the natural resources (4), Nubia has been an important fringe of the Mediterranean world and has often been cited in ancient and modern literature. Although this is the time when the inhabitants of Nubia first entered the pages of history, their ancestors had already lived in the area for thousands of years.

Various writers have defined the boundaries of Lower Nubia in several ways, but, for this paper, Lower Nubia will be considered to be that section of the Nile Valley lying between the First and the Second Cataracts, both of which have been natural barriers to transportation and communication.

It must be noted, however, that for thousands of years the northern politicial border has fluctuated wildly, with the result that the population, between Aswan, at the First Cataract, and Maharraga, to the south, has undergone several replacements. In view of this fact, we will further limit the area in question to that portion of the Nile Valley lying between Maharraga and the Second Cataract, but, in order to comprehend the racial situation in this part of the valley, the racial history and the archaeological record of the surrounding areas must also be examined.

During the historic period, Africa has been the home of three races. Two of these, the Congoid, or Negroes proper, and the Capoid, or Bushmen, evolved there, but the third group, the Caucasoid, entered the continent as invaders. This element includes the mixed and unmixed descendants of several peoples who entered Africa from Western Asia and also from Europe at various times between 12,000 B.C. (5) and the early years of the last century, and it is represented in groups such as the Arabs, Berbers, Turks, the Cushitic tribes living in the Horn of Africa, and even some of the inhabitants of the Highlands of East Africa, the Sudan, and Nubia.

In Africa, not even the Sahara represents a sharp cultural divide, so the various races living there have not been kept effectively separated. It has been stated (10) that, in Africa, peoples and cultures do not replace one another. Instead, they simply move aside, so earlier and later arrivals may be found living next to each other.

During the Pleistocene, the ancestors of the living Capoids inhabited the shores of the Mediterranean and the Sahara, while the Congoids lived south of the desert (5). From the archaeological and linguistic evidence at hand, it then seems that the Capoids moved to South Africa via the East African Highlands due to pressure exerted upon them by the invading Caucasoids, and, in doing so, they displaced or absorbed various Congoid populations that were more primitive than themselves.

The indigenous population of Africa today is mostly clinal in nature. Through East Africa and the Sudan, Caucasoids shade off into Negroids. In the Sahara and also along the northern borders of the desert, small groups of partly Capoid people are still to be found. In South Africa, the Bantu tribes have absorbed some earlier Capoid peoples, and, on the northern fringe of the Kalahari Desert, some Congoids speak Bushman languages (5), an indication of earlier mixtures.

From about 4,500 B.C. onward, people possessing various Stone Age hunting cultures were gradually pushed southward and into the forests of Africa as more advanced groups with a knowledge of cultivation and the domestication of animals spread through the northern part of the continent. At about that time, it is thought (17) that food plants

and domesticated animals were introduced into Egypt and other parts of North Africa from Western Asia, where they had first been cultivated and tamed. In Egypt, the first farmers undoubtedly settled on the high terraces along the Nile Valley and along the banks of the Fayum Depression, which then held a larger lake than exists there now. The swampy and wooded bottom of the Nile Valley was probably left to the earlier hunters, who still pursued the hippopotamus, waterfowl, and fish. Later, the two peoples intermarried when the forests were cut and cultivation of the annually inundated valley took place.

In Egypt, these early hunters dwelling in the valley "contained a strong native African genetic component, and the Neolithic farmers who settled on the open flanks of the valley to either side were Caucasoid, having come directly from Western Asia. Before the end of predynastic time, the two elements had probably fused" (5). This hypothesis was tested by J. M. Crichton (6), who compared 296 predynastic Egyptian, dynastic Egyptian, and Negroid skulls by employing a multiple discriminant analysis that used 34 measurements and seven indices and angles. The results obtained indicated that the predynastic Egyptian skulls were more like those of the Negroids tested than the skulls of the dynastic Egyptians were. Also, it was shown that the dynastic Egyptian skulls were more Caucasoid than were those of their predynastic predecessors.

It has been speculated (3) that the African element in the predynastic Egyptian population might have been Bushmen, but Crichton did not have a large enough series of Bushman skulls to use for a comparison in order to test this hypothesis.

During the Nubian Salvage Campaign, the University of Colorado and Southern Methodist University excavated two Mesolithic sites in the Wadi Halfa area, near the southern border of Lower Nubia. These may date between 13,000 B.C. and 8,000 B.C., but the latter date might be more correct (5). This collection of complete adult skulls proved to be dolichocranic, and they possessed bun-shaped occiputs, massive brow-ridges, sloping foreheads, extreme facial flattening in the orbital and nasal regions, a great amount of alveolar prognathism, large teeth, and large deep mandibles. These traits are common in many of the present day Nubians.

All this evidence indicates (5) that Africa north of the Sahara was originally inhabited by a non-Caucasoid population that can, in general, be termed Negroid. When the first Caucasoids arrived, they mixed with some of the original natives and drove the others southward. Successive waves of Caucasoids made the population of North Africa more and more Caucasoid, and the importation of slaves into the area did not reverse this trend, as Herzog (personal communication) has pointed out. Records discovered by him prove that the vast majority of every slave shipment was dead within a couple of years after its arrival in the Nile Valley. If this had not been the case, the great numbers of slaves imported yearly for millenniums would have completely smothered the Caucasoid element in this region. The massive penetration of Negroid Africa by Caucasoid genes during the last 14,000 years and the

result of the mixture that has taken place can be seen in the features of the living Nubians.

Before 3,200 B.C., according to Steindorff and Seele (19), Lower Nubia and Egypt possessed not only a homogeneous population, but also a basically common culture. However, during the third millennium B.C., the culture of Lower Nubia was revitalized by the arrival of two groups of invaders. Pressing northward out of the Sudan, a population possessing a heavy admixture of Negroid genes established itself between the First and the Second Cataracts. Also, from the North, a light-skinned, blue-eyed group of Caucasoids, the Temeh, that may have crossed the Strait of Gibraltar from Europe, had been migrating eastward along the coast of the Mediterranean and through the oases of the Libyan Desert. Gradually, they moved up the Nile into Nubia, where they settled with the older population (19). Together, these two groups of newcomers changed the culture of Lower Nubia, and they reinforced the existing Negroid-Caucasoid racial mixture of the population.

Some Egyptologists feel that the C-Group Culture, which existed from about 2,250 B.C. to approximately 1,546 B.C., was brought in from west of the Nile by tribes forced out of the Western Desert by the increasing desiccation of the land (2). However, other authorities present evidence that the Sahara did not become a desert land until well after the beginning of the Christian Era (14; Coon, personal communication). It is known, however, that after the beginning of the C-Group Period the Egyptians withdrew from Nubia and left the native tribes in peace.

The Second Intermediate Period (1,780-1,546 B.C.), which began with the invasion by the Hyksos during the Thirteenth Dynasty (19), marked the beginning of the end for the C-Group Period in Nubia. These invaders from the East at one time pushed into Upper Egypt as far as Thebes, and, at that time, Emery (8) speculates that large numbers of Egyptian refugees may have flocked into Nubia. Although there are no written records of this settlement, there is evidence from the excavated cemeteries of a change in burial practices that became increasingly similar to those in Egypt and to those employed in Nubia during the New Kingdom Period.

When the Hyksos were finally driven out of Egypt in the Seventeenth Dynasty, the Egyptians, during the following New Kingdom Period (1,546-1,085 B.C.), turned their attention once again to the South and proceeded to destroy the Kingdom of Kush, located in Upper Nubia, which is above the Second Cataract, but the Egyptian army did not molest the inhabitants of Lower Nubia. Instead, a small number of Egyptian governmental officials settled in the area (20) and married Nubian women. In the large mass graves of the upper classes of this period, we find the remains of Caucasoid males buried with those of large numbers of females of the typical Nubian mixed Negroid-Caucasoid type. In the lower class graves, the physical type was Nubian. While the culture of Lower Nubia was strongly Egyptianized at this time, the physical type of the population remained generally unchanged.

From the time of the collapse of the New Kingdom in 1,085 B.C. to the rise, about 300 B.C., of the Meroitic Empire centered at Meroe in the Sudan, there is little archaeological evidence to prove that Lower Nubia was inhabited (20). Perhaps the vast majority of Nubians retreated south of the Second Cataract to join the people of Kush as the result of a natural catastrophe, such as a famine or an epidemic. On the other hand, it may be that the culture of this vast area at that time was not distinctive enough to be distinguished from that of the previous New Kingdom Period. At any rate, according to Emery (8), Lower Nubia at this time was important only as a military route for the passage of armies from the North and the South.

During the Meroitic Period, which lasted in Lower Nubia from aproximately 300 B.C. to about 250 A.D., the Dodecaschoinos region, which stretched through the northern part of the territory from the First Cataract to Maharraga, contained many Egyptians who had settled among the native Nubians. However, south of Maharraga, the cultural stimulus was mainly from the city of Meroe.

At first, this northern Dodecaschoinos area was ruled by the Ptolemaic kings of Egypt (8), but later the Romans controlled the area for about 200 years. In addition, Meroitic forces occasionally penetrated this region (8).

Although the northern part of Lower Nubia was frequently contested at this time, the southern portion in which the study area was located saw little upheaval in the population. The governmental officials were undoubtedly sent north from Meroe, and some or all of the upper classes may have come from the South; but there is every reason to believe that the main body of the population remained static.

From the third to the sixth centuries A.D., the X-Group Culture flourished in Lower Nubia (8). Various Egyptologists have hypothesized that this new culture resulted from mass migrations of Berbers from the West (15), or of Blemmyes from the East (7), or of Nubians or Nobadae from the South (11, 12). However, these mutually conflicting claims are substantiated by very little evidence, and it seems that, from examining the archaeological remains, the X-Group Culture was a home-grown product.

In the northern part of Lower Nubia, at least, this was a period of almost constant warfare with such people as the Blemmyes, who raided out of the Eastern Desert and who used the Nile Valley as a base from which to pillage Upper Egypt. Also, the Nobatae, whom Emperor Diocletian persuaded to settle in the valley to act as a buffer between the Blemmyes and Egypt (13), were at odds with the former group. Most of the fighting occurred in the North, so the population in the southern section of Lower Nubia was little affected. If the Blemmyes entered this part of the Nile Valley, they probably did not mix to any extent with the local population, in the same way as the modern Beja, the probable descendants of the Blemmyes, do not intermarry with the Nubians today.

The Kingdom of Nobatia, which was ruled from its capital at Faras just south of the Sudanese border, accepted Monophysite Christianity in

about the year 543 A.D. (8); but, although the culture of Nubia changed, the population remained stable. Christian settlements were reported in Nubia as late as the 1520's, but Christianity ceased to be a power by the 1,300's (1, 9).

By 640 A.D. the Arabs had subdued Egypt, but they were at first defeated by the Nubian bowmen when they tried to push south of the First Cataract. By 652 A.D., however, an Arab army managed to march south and beseiged the city of Dongola in the Sudan, but after demonstrating their power, according to Trigger (20), they withdrew.

During the Christian Period in Nubia, there may have been some intermarriage between Arabs and Nubians, but much in the way of proof either way is lacking. About the most that one may say is that it seems probable, on the basis of the present feelings of disdain which the Nubians and the Arabs have for each other, that few outside genes entered the Nubian population at this time.

Gradually the Nubians acquired most of the elements of the Moslem faith. For the physical anthropologist, this was a great pity, for only in a few instances has the government of Egypt allowed the excavation of Moslem graves. Therefore, we have little evidence of the amount of foreign genes entering the population of Nubia from the 1,300's A.D. to the present day.

One of the few places where excavations of this type have been permitted was at Gebel Adda, which was the headquarters for the expedition. Such Moslem skeletal material that was available was generally of the usual Nubian mixed Caucasoid-Negroid physical type.

It should be pointed out that, generally speaking, the Egyptians, Arabs, and Turks have had an intense dislike for the dark-skinned peoples living south of the First Cataract of the Nile, with the result that the Nubians have long been considered to be fit only to live as slaves for these groups. Also, the Nubians have had good reason for remaining aloof from these invaders, and these feelings have tended to limit the amount of intermarriage in this area. Not only is intermarriage with outsiders a rarity, but premarital and extramarital intercourse in Nubia is almost unknown. A Nubian girl or woman who is even suspected of engaging in activities of this type is usually promptly executed by her family. Drowning in the Nile is the usual method. One notable exception to this situation was the Mamelukes, who were Christian children captured mainly in the Caucasus and taken to Egypt, where they were trained to be Moslem soldiers (16).

The Mamelukes probably first entered Nubia when they were driven there by Napoleon's push up the Nile Valley. At that time they laid waste to many Nubian villages. When Napoleon's forces returned downriver, the Mamelukes moved into Upper Egypt.

On March 1, 1811, Muhammed Ali, the ruler of Egypt, invited the Mamelukes to the Citadel in Cairo for a ceremony and treacherously slaughtered 480 of them. Later, Ibrahim, Muhammed Ali's eldest son, moved against those in Upper Egypt who had previously fled from Napoleon (16, 18). However, according to Moorehead (16), about 300 men with their wives managed to escape into Nubia.

Gradually, the main body of Mameluke survivors worked its way upriver, and, after pillaging Dongola above the Third Cataract (16), disappeared into the vastness of the Sudan. However, a few dropped out along the way and settled down in various favorable locations, and, wherever they settled, they ruled.

Today, their descendants are to be found principally among the upper classes of Nubians. Many of the local village rulers, the omdahs, are of mixed Nubian-Mameluke stock, for the Mamelukes, out of necessity, began marrying Nubians and, therefore, were the last to contribute to the gene pool in Lower Nubia. The descendants of these mixed marriages, however, form, like the mixed Nubian-Arabs, distinct breeding isolates within the present general population.

The Nubians of Lower Nubia today retain basically the same physical type as the inhabitants of northeastern Africa 14,000 years ago, after the invading Caucasoids had mixed with the indigenous Negroid peoples. The most unstable section of Lower Nubia has been the northern part, between the First Cataract and Maharraga. South of this region, in the area in which this study was undertaken, the population has been extremely stable, as populations go, for millenniums.

Method

A careful evaluation of the literature indicated that the Nubian populations between Maharraga and the Second Cataract had been relatively stable for thousands of years, so it was decided to launch a two-stage project to study the cranio-facial growth and variability of the populations of selected villages and to test the hypothesis that there has been no mass replacement of the population in the area.

Since the Broadbent-Bolton cephalometer was conceived in 1933, it has become the commonly used and accepted method of taking standardized X-ray films of the human skull. Therefore, it was employed in this study.

During the first stage of the study, in the spring of 1965, cephalograms were obtained from 715 skulls with well preserved dentitions. These skulls had previously been recovered by expeditions from The American Research Center in Egypt, Inc. and from the Oriental Institute of the University of Chicago at sites located at Gebel Adda, Ballana, Qustul, and Adindan, all of which were along the Nile between Abu Simbel Temple and the Sudanese border. Three cephalometric views were obtained from each skull, *i.e.*, a lateral film, an anterior-posterior (PA) view, and a view of the cranial base. Therefore, each skull was recorded permanently in three dimensions. In addition, dental examinations, color photographs, and casts of the dentitions were included to record pathologies, abnormalities, dental morphology, etc.

The cemeteries investigated provided skeletal material from the C-Group, Meroitic, X-Group, Christian, and Moslem archaeological Periods, and they ranged in time from approximately 2,000 B.C. to 1,800 A.D. Material from the Gerzean, Archaic, and New Kingdom Periods was unavailable due to the previous inundation of the Nile, which had raised the water level about six meters.

Since the population of Egyptian Nubia had been moved by villages to the Kom Ombo area of Upper Egypt, the expedition worked there during the second stage of the project in the early part of 1966 and X-rayed approximately 1,000 people from the village of Ballana. Anterior-posterior and lateral cephalograms were obtained from each person. Also, everyone in this sample received a complete dental examination, a test for color blindness, and had his height and weight recorded.

The understanding of the etiology of malocclusion is dependent upon the study of cranio-facial variation in the same population over a long period of time, so a unique opportunity existed to observe the cranio-facial variation of the Nubians over a 4,000-year period. Our insight into the cranio-facial variability of the modern Nubians is enhanced by this long skeletal record. Therefore, a new dimension was added to cranio-facial growth studies that had previously been conducted mainly in the United States, Scandinavia, and Canada.

Interpretation

The cephalograms are now in the process of being evaluated by a set of angular and linear measurements derived from tracings on acetate overlays. Thirty-eight variables of this type were selected for the skulls and 44 were employed for the living Nubians. These variables were selected to indicate the vectoral growth of the facial skeleton and the resulting occlusion. All the measurements, linear and angular, were entered into a series of multivariate statistical programs which have been developed to indicate the differential growth between the interrelated dependent skeletal components of the cranio-facial complex. Computer programs using principal components, stepwise regression theory, and discriminant analysis allow close inspection of the interdependence of the many variables.

Preliminary findings indicate a previously unsuspected heterogeneity in the population at Gebel Adda, with a resultant variability in facial growth patterns and occlusion, and it is significant that there is variability both within and between each archaeological period. These variations in occlusion represent all of the major Angle classifications of malocclusion.

On the other hand, the populations of the villages of Ballana, Qustul, and Adindan have proved to be quite homogeneous. This is understandable when one considers the fact that Gebel Adda had been a fortified garrison town for thousands of years and remained so until the early years of the last century. Foreign soldiers from various parts of Europe, Egypt, other parts of the Middle East, and from further south in Africa had been stationed there, while the peasant populations of the surrounding villages remained static.

At this date, it appears that replacement of the population of Lower Nubia from Maharraga to the Second Cataract has been limited to the garrison towns and possibly also to the ancient administrative centers. Overwhelming proof for this point should be available with the publication of the final report in 1968.

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