

ON THE CRANIOLOGICAL STUDY OF EGYPTIANS IN VARIOUS PERIODS

M. F. GABALLAH, M. T. EL-RAKHAWY & H. I. EL-EISHI

I — THE PEOPLE AND THE LAND OF ANCIENT EGYPT

No palaeolithic skeletal remains are known from the territory of Egypt. The oldest neolithic culture recorded in Egypt was found at Faym (Arkell and Ucko, 1965), though contemporary cultures were also found at other sites especially at Upper Egypt. The cultures were named after the sites at which they were discovered. Secularly arranged, from early to late predynastic times, they were the Tasian, Badarian, Amratian, Gerzian and Semainean cultures (Petric, 1939). From these neolithic times, only few skulls were excavated from Deir Tasa and described by Brunton and by Derry (Coon, 1939). These Tasiens were predominantly dolichocephalic, with large well-developed skulls and showed no trace of Negroid traits. However, Coon pointed out that these early neolithic Egyptians belonged to a purely europoid type which seemed to have disappeared from Egypt during later times.

The predynastic period has been historically defined as the period which extended from the date of the most ancient cemetery yet excavated till the beginning of the first dynasty (3400 B. C.). The accurate determination of the dates of excavated remains from this predynastic period was not possible before M. Flinders Petrie (1853—1942). This eminent Egyptologist was able to put a system of "relative dating" based on the characteristics of thousands of pottery pieces obtained from predynastic cemeteries excavated at Upper Egypt and according to this system, prehistoric osteological samples were to a great extent arranged in a chronological order (Petrie, 1939).

One of the characteristic observations recorded about the predynastic Egyptians is that they used to burry their dead in a contracted position much similar to the embryonic flexed state. As to their racial affinity, they were considered to belong to the Mediterranean branch of the Caucasian group of mankind (Sergi, 1901 and E. Smith, 1923) though Giuffrida Ruggeri (1922) stated that while the Lower Egyptians were Mediterraneans, the Upper Egyptians were Ethiopians. Recently, some students regarded these predynastic

Egyptians to be mostly Hamites who came from southern Arabia and permeated Upper Egypt since very remote times (Kephart, 1960; Seligman and Seligman, 1965).

The question of origin and nature of the ancient Egyptians had been the subject of several contradictory hypotheses. Nearly every habitable place on the globe was assumed to be a possible origin for the ancient Egyptians or their civilization. Fantastic speculations were given by early travellers who visited Egypt in the 18th century as well as by philologists who claimed the close relationship of the ancient Egyptian grammar to that of Semitic languages. Chantre (1904), and E. Smith (1923) reviewed the various views concerning the origin of the ancient Egyptians. Some of these views considered them closely affiliated to the Indopolynesians, Pelasgians, Australian aborigines, Bushmen of South Africa and even to the inhabitants of South America. Other views considered them as emigrants from China or from a Celtic colony at the West of Europe. Moreover, their physical and cultural close connexion with the Libyans, Arabs and Ethiopians was also mentioned.

II — THE CRANIOLOGICAL STUDY

Racial history deals with the study of the physical characteristics of man as well as the modifications which might have affected his racial make-up throughout different periods. The processes involved in producing such modifications may be either microevolution, intermixture of different races, or both. Accordingly, the anthropological characteristics of any population have to be discussed in the light of its whole physical history together with that of the surrounding populations. However, it is interesting to realize that the ancient Egyptians, from the portraits depicted on their monuments, were able to differentiate between the Libyans, Negroes and Asiatics from the shape of the beard, skin colour and facial features.

The ancient Egyptian skulls have been intensively examined more than those of any other known race. The dry soil of Egypt as well as its hot climate preserved a very rich anthropological material that

"almost every foot of its ground hides some relic of bygone man" (Newberry, 1923). Herodotus in 450 B. C. wandered all over Egypt and claimed that the Egyptian skull could be distinguished from the Persian by the fact that the former is the more robust. By the 18th century, more serious anthropological studies came to light especially by Blumenbach, Morton, Broca and Emil Schmidt (Batra-wi, 1946). The skulls examined, however, were not accurately dated and their source was not certainly defined. Since the end of the last century a great amount of Egyptian skeletal materials have been excavated and promptly dealt with by many investigators, a list of whom was given by E. Smith (1923). The Biometric School of Anthropology, through the researches of Karl Pearson, G. M. Morant and their students, has indeed contributed much to the Egyptian Anthropology.

In order to expose how far the racial problem of the ancient Egyptians was dealt with, it may be necessary to review the basic previous studies of the cranial samples arranged in a chronological order, viz. predynastic, dynastic including Graeco-Roman period and lastly the post-Roman period.

A — Predynastic period

This very long span of time has been roughly divided into early, middle and late periods (Thomson and Mac Iver, 1905). Naqada and Ballas at Upper Egypt were the first sites from which reliable predynastic human remains were disinterrred. The examinations of these remains were firstly carried out in the field by Petrie and Quibell (1896) who rushed to the conclusion that the Naqada people were a "New Race" that came from Libya and supplanted the original inhabitants at the Thebaid. The skeletons were described to be tall, robust with "no trace of Negro" admixture. De Morgan (1897) and his collaborator Fouquet excavated further the same area as well as some neighbouring sites, and came to the interpretation that the prehistoric Egyptians of Naqada were, in fact, an "Old Race" whose culture was present in Egypt since remote times.

About 400 skulls from Naqada were sent by Petrie to London, where they were studied in detail by C. Fawcett (1902) at the Biometric Laboratory. The analysis of the mean measurements of some selected cranial features and their standard deviations showed that the sample was homogeneous and that the skulls were predominantly of long narrow face, flat nose and rather rounded orbits. However, the skulls were described to be primitive or inferior in some features and advanced or modern in some others.

Thomson and Mac Iver (1905) studied about 1500 skulls from the Thebaid which belonged to several periods from predynastic till Roman times. The data obtained were tabulated as individual measures and the results were mainly demonstrated in a graphic manner. These authors relied upon the

facial and nasal features as the principal criteria essential for racial differentiation and from diagrams of facio-nasal correlations they assumed the presence of two main racial stocks among the ancient Egyptian populations. These stocks were described as a "Negroid group" and a "non-Negroid group" with some intermediate and few contradictory forms. The most ancient inhabitants were described by Thomson and Mac Iver to show a more Negroid but no Libyan influence.

Elliot Smith (1910), in his report about the human remains excavated during the first archaeological survey at Nubia, discussed the racial problem in the Nile valley and pointed out that the ancient Nubians and ancient Egyptians from the same epochs were closely related. He studied the predynastic material from Naga-ed-Deir at Upper Egypt relying in his technique mainly on nonmetric features. He found the bones poorly-developed, the male skulls showing feminine features and the stature lesser than that of the dynastic Egyptians. The Naga-ed-Deir skulls were characterized by having pentagonoid (coffin-shaped) norma verticalis, though ovoid forms were also frequently observed. The occiput was described to be bulged, the nose short and flat and the orbits small and rounded. The transverse diameters of the calvaria were found markedly narrow and consequently the cranial capacity was suggested to be small. Regardless of the value of that study, the technique used — being mainly descriptive — was greatly subjected to personal bias and hence unsuitable for comparison with other anthropological studies.

G. M. Morant (1925) analysed the data of some predynastic series given by previous authors and assumed that during the most ancient times there was in Egypt a very primitive race which he termed the "Aeneolithic type". Its crania were found large, dolichocephalic and with a long basionasion length ($LB = 105.5$ mm.). This primitive race was considered to represent a small and dwindling population which became gradually replaced by another type. This second type persisted till the dynastic period where it was also subjected to some physical transformations explained by the author to be due to slow processes of evolution or racial admixture. These two predynastic types were distinguished from the dynastic Egyptians by showing "low cephalic indices".

The most ancient skeletal materials yet discovered in Egypt were excavated in two seasons from Badari about 30 miles south of Asyut. The sample from the first season was measured by D. E. Derry in Cairo, then transferred to England where it was re-examined by B. N. Stoessiger (1927). The skulls excavated in the second season were brought out from Mostagedda in the neighbourhood of Badari and were also measured by Derry. Stoessiger showed that the Badarian skulls, like those of Naqada, were so poorly-developed that it was difficult to differentiate between males and females. The calvaria was dolichocephalic and the face was prognathic. Moreover, these Badarian skulls were found

to have shorter skull base (LB), smaller nasal and facial heights as well as narrow palatal breadth. Their racial affinity to non-Egyptian ethnic groups was demonstrated by Stoessiger, using the reduced coefficient of racial likeness (C.R.L.), to be very close to primitive Indian groups, viz. the Dravidian and the Veddah. Moreover, Morant (1935), who studied the Badarian samples measured by Derry and by Stoessiger pooled together, pointed out to the close relationship between predynastic Egyptians and some African Negroes.

To resume the present knowledge about the anthropology of the predynastic period, it is clear that all the relevant materials were excavated only from Upper Egypt and mainly from the region of the Thebaid. It may be stated that these early inhabitants might have been the descendants of the palaeolithic Egyptians. Their stature, as revealed from the estimate of long bones, was relatively short (Males = 163, and females = 151 cm.) in comparison with that of the dynastic Egyptians (E. Smith, 1910). The bones were, in general, gracile and the male skulls failed to show well-developed ridges. The head was dolichocephalic with characteristic narrow calvarial breadths. The face and nose were short, with the orbits small and rather rounded.

Most of the samples examined showed noticeable Negroid affinity. This conclusion was evidenced by the increased frequency of high nasal index and prognathic face among these people. E. Smith (1923), though referred to the fact that about 2% of the predynastic skeletons exhibited some Negroid traits, found that their skin and hair characteristics were much similar to those of Mediterranean races.

As time went on, it was recorded that the form of the norma verticalis became less ellipsoid, the cranial capacity increased and the bones in general became more robust. Such transformations were attributed by Thomson and Mac Iver (1905) to be due to the improvement in the ways of living during the dynastic period. Fawcett (1902) pointed out that the progressive brachycephalization as well as the increase in facial heights observed among the Egyptians from ancient to modern times were the result of evolutionary processes. On the other hand, this was explained by E. Smith (1923) to have resulted from intermixture with Armenoid aliens. However, in spite of these physical changes, most authors emphasized that the basic racial elements were greatly stable throughout the whole Egyptian history.

B — The dynastic period

The dynastic Egyptians were studied by E. Smith (1910) who examined the old Kingdom material excavated from the neighbourhood of the great Pyramid at Giza. The skeletons were described to be strongly built, the skulls had broad spheroid calvaria, high bridged nose and long coronoid process of the mandible. These features were also

met with by the same author in the ancient Christian series excavated from the Biga Island (cemetery, 5) at Shellal. Accordingly, E. Smith (1934) suggested that an alien Alpine stock which most probably had come from Syria or Asia Minor, entered the Delta a long time ago (3000 B. C.) and intermingled with the endogenous lower Egyptians. At the same time, the southern regions of Egypt were subjected to continuous infiltration with Negroid populations and thus accentuated the physical differences between the inhabitants of the north and those of the south.

The first extensive statistical analysis of a large number of Egyptian cranial series has been provided by G. M. Morant (1925) who investigated the racial history of Egypt from predynastic till Roman times. The relevant data of the investigated series were compiled from the literature and most of their mean measurements were computed by the author. He analysed these data on the basis of the crude coefficient of racial likeness and assumed the presence among the dynastic Egyptians and probably earlier of two racial stocks which he called "Upper and Lower Egyptian types". The Lower Egyptian type which inhabited the Fayum region was differentiated from the Upper type at the Thebaid, Upper Egypt by having greater calvarial and bizygomatic breadths, as well as a longer upper facial height. On the other hand, the calvarial measurements taken in the sagittal plane (length, chords and arcs) did not show similar significant differences between both types. Morant described the relationship between these two types and suggested that a gradual and progressive infusion of Upper Egypt by the Lower Egyptian type took place especially after the unification of both kingdoms under Menes. Consequently, the Upper Egyptian type underwent a slow modification towards the Lower type until the 18th dynasty where this modification reached its maximum and the prevailing population in Upper Egypt became very similar to the Lower Egyptian type. On the other hand, the Lower type did not appear to have undergone any detectable change in their physical characteristics.

Very similar conclusions to those of Morant were also given by his student, Risdon (1939). He analysed a large number of Egyptian and some other allied cranial samples showing reduced C.R.L. not more than 5.0 and was able to classify them into two groups which he termed "group A and group B". Group A was described to correspond to Morant's Upper Egyptian type and group B to the Lower Egyptian type.

A. Batrawi (1946), under the supervision of Morant, analysed the previously published C.R.L. data, and also arrived at the same conclusion given by Morant and Risdon about the racial history of Egypt. He diagrammatically demonstrated the interconnexion between the Upper and the Lower Egyptian types and concluded that there were no definite geographical or secular limits between the two Egyptian types. Moreover, he measured five ancient Nubian series which he found

closely affiliated to the Upper Egyptian type; a finding that had been also referred to by E. Smith (1910).

The presence of two physically different types among the dynastic Egyptians was, however, not recorded by D. E. Derry (1956), though he believed that a different race had invaded Egypt from the East since the early dynastic period. This foreign race was described to be physically different from the predynastic aborigines in having a greater calvarial breadth and basio-bregmatic height. Unfortunately, Derry on no scientific grounds, associated these increased cranial measurements with higher levels of intelligence and consequently he regarded the distinguished dynastic civilization, at least in part, to be of non-Egyptian origin.

To summarize the physical features during the dynastic period, they were found to range between two extremes. In one extreme which characterized the inhabitants of Lower Egypt, the skeletons were generally massively built and the skull was characterized by having a broad calvaria and a long orthognathic face. E. Smith regarded this robust type to be a blend with an Armenoid race, while Morant and his students believed that it was of pure Lower Egyptian origin whose racial elements did not seem to have undergone any marked change till Roman times. The other extreme of cranial characters was represented by the predynastic Egyptians who showed feeble skeletons and small narrow skulls with higher frequency of facial prognathism. This type, which was called the Upper Egyptian type by Morant and Group A by Risdon, was assumed to have been absorbed by the Lower Egyptian type that gradually infiltrated Upper Egypt till the 18th dynasty when this process reached its maximum. It may be also recalled that Thomson and Mac Iver (1905) who examined about 1500 skulls from Upper Egypt (most of which were of dynastic date), concluded that since early predynastic and till Roman times, two racial stocks were recognized among the ancient Egyptians. They were differentiated from each other according to their facial characters, being either Negroid or non-Negroid. These two stocks were suggested to have intermarried with each other during the different periods and resulted in the occasional appearance of broader nose and face among the non-Negroid group. Thomson and Mac Iver also pointed out to the marked stability of the racial elements inspite of the intermittent intermixture with foreign races at various times.

C — The post-Roman period

The post-Roman period, due to marked paucity of relevant material, is considered to be a gap in the knowledge about the physical history of Egypt (Morant, 1925 and Batrawi, 1946).

A single sample of the early Christian period (4th—7th A. D.) was excavated from a cemetery near Magageh (Middle Egypt) and investigated by Munter. Out of the 78 skulls brought, 14 were

found of young age and hence excluded, while the remaining 64 were treated as one group without sex separation. Morant (1928), however, sexed this material and found that 38 skulls were males. These data (computed by Morant) were investigated by Batrawi (1946), using the reduced C. R. L. and were found to show no relation to any of the available Egyptian series. Accordingly, he suggested that this ancient Coptic group may be "a local community of alien origin".

From the modern times only three series were recorded. Myers (1905), quoted by Batrawi, 1946) studied 47 skulls said to be from Cairo, but due to their marked heterogeneity (the standard deviation of skull length is 8.02, these materials were considered unreliable for comparative purposes). The second modern cranial sample (60 males and 27 females) was collected by Mook from a cemetery near Cairo. The skulls were measured by E. Schmidt, their means were reduced by Alice Lee and then used by Fawcett (1902) for comparison with the predynastic material from Naqada. The material was described "to be almost certainly Copts". The third sample of modern skulls was examined by Sidney Smith (1926) during his work as an expert in the Forensic Department at Cairo. He studied 58 male skulls of both Moslems and Copts, 20 of them were said to be those of criminals, while the other 30 were brought out from a modern coptic cemetery. He pointed out that the modern Egyptian skull is characterized by having a markedly high and narrow calvaria with a very low acroplatic index (100 B-H'/L). The face is more Negroid and accordingly, he stated that the modern Egyptians are more similar to the predynastic than to the dynastic populations. S. Smith was of the opinion that this reversion of type towards that of the prehistoric times was due to progressive elimination of alien racial elements suggested to have been introduced into Egypt during the dynastic period. His data were also analysed by Batrawi (1946) by the use of the reduced C.R.L. They were found to be closely related to those data of the early dynastic (private tombs, Abydos), middle dynastic (Koubanieh North) and middle predynastic series (Naqada A & Q).

It is clear from the foregoing, that the post-Roman period was scarcely investigated and our knowledge about the racial history of Egypt during the last fourteen centuries is nearly lacking. Only one group was examined from the ancient Coptic period, practically no material was obtained from the early Islamic period and a few cranial samples were studied from the modern times.

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- M. F. Gaballah, M. T. El-Rakhawy, H. I. El-Eishi
Anatomy Department, Faculty of Medicine,
Cairo University (Kasr El-Aini).