CHAPTER 1

THE EXCAVATIONS AT JEBEL MOYA*

In 1900 Mr H. S. Wellcome, as he then was, went to the Sudan, being one of the first civilians to enter the Condominium after its reoccupation by the Anglo-Egyptian forces under Sir Herbert (later Lord) Kitchener. The following year the Wellcome Tropical Research Laboratories, soon to become of outstanding importance in the sphere of medicine, were founded in Khartoum. Mr Wellcome revisited the Sudan in 1910 when he was recovering from a lengthy illness. Before leaving London, he agreed to a request made by General Kitchener to provide additional help to the Sudanese, whose progress he had much at heart. He remained in Egypt for a short period, and, after his recuperation, went on to Khartoum for an extended stay. It was then that Mr Wellcome conceived the notion that his promise to the Sirdar might well be fulfilled by inaugurating a large archaeological excavation which would both furnish employment and also extend the limits of what little was known of the prehistory of the Sudan. The Sudan Government gave its full support to these proposals and later granted Mr Wellcome a far-reaching concession for excavation. As is stressed by the archaeological report, however, in Mr Wellcome's view 'the excavations were begun rather as a means to an end than as an end in themselves. Archaeology, in short, was a handmaid of philanthropy'.†

It is certain that Mr Wellcome received a great deal of advice from the local authorities regarding untouched archaeological sites in the Sudan. According to Major J. S. Uribe, who subsequently served under him as the Camp Commandant, he was also told about Jebel Moya and other sites by Mek Omar of Abu Geili, the self-styled King of the Fung. As the result of information received from these sources, he finally selected Jebel Moya as the place he proposed to excavate and arrived there with a small party on 26 January 1911.

Jebel Moya‡ lies between the Blue and White Niles, about 250 kilometres south-south-east of Khartoum and towards the southern limit of the Gezira plain. A full description of the locality and the main site which was excavated, known as 'Site 100', can be obtained from the introduction to and the first two

* Much of the material for this chapter is based on the first volume (text) of Addison (1949), often cited hereafter simply as 'the archaeological report'.

† Addison (1949), p. 2.

‡ *Jebel*, and not the earlier *Gebel*, is the orthography officially adopted by the Sudan Government.

chapters of the archaeological report. This also gives a detailed account of the excavations. During their initial phases it was not realized that the site—some 104,000 square metres, or almost 26 acres, in extent, of which about a fifth was excavated—was 'one vast graveyard', but its nature became apparent to Mr Oric Bates, the archaeologist in the second season, and the method of excavation originally adopted was modified.

Mr Wellcome was not dissatisfied with the results of the first season at Jebel Moya, and he found its climate congenial to his health. The second season began in December 1911, with a greatly augmented trained staff. Mr Bates was placed in charge of the excavations, of which Dr (later Professor) D. E. Derry conducted the anthropological side, also acting as Camp Medical Officer. The work was confined to Site 100, some 700 graves were cleared, and the season came to an end in April 1912.

The third season lasted from November 1912 to March 1913, and attention was again concentrated on Site 100 at Jebel Moya, another three-hundred-odd graves being cleared there, although activities were extended to two other nearby sites, Segadi and Dar el Mek. In this season there were considerable changes in the scientific personnel. Messrs G. A. Wainwright (for a few weeks only) and James Dixon served as archaeologists in place of Mr Bates, and Dr M. B. Ray, assisted by Mr L. H. Dudley Buxton, succeeded Dr Derry.

The fourth season began in November 1913 and ended in April 1914. During this period, in the course of which approximately 1700 graves were cleared, Dr R. S. Oldham, assisted by Messrs W. D. Hambly and L. Hussey, was in charge of the anthropological side of the work, replacing Dr Ray and Mr Buxton. It was the last season in which any excavation was done. Although Mr Wellcome intended to resume work in the following winter, that expectation was not realized, and he never returned to Jebel Moya despite the fact that the concession was regularly renewed up to the time of his death in 1936.

During the excavations as many as 2883 supposed graves were recorded at Jebel Moya, and 2792 actually cleared, the rest being left unexcavated. Human remains were not found in all of them. A few contained only pottery, and, according to the archaeological report, were probably not true interments. The contents of twenty-five comprised animal burials. On the other hand, in some graves there was more than one human skeleton; so that, in all, the remains of 3137 individuals were accounted for. Often they were very fragmentary indeed.

The artifacts from the site fall into categories which may be broadly classified as pottery, stone implements, beads, labrets, amulets, scarabs, other ornaments, weapons, tools, and figurines. It is interesting to note that only a small proportion of the material collected came from graves. Nearly half of these were barren

of artifacts, and of the remainder the majority yielded only a few beads or labrets. Pottery, inclusive of odd sherds in the filling, was unearthed in but 2% of the graves. The archaeological report has shown conclusively that the objects found in them could have been left only by the people who actually lived on the site, which must have formed their habitation as well as their graveyard.

As the excavations proceeded, increasing attention was paid to stratigraphy. Beginning from above, the sequence was (i) Topsoil, (ii) Upper Layer, (iii) Black Gravel, and (iv) Black Gebel. These strata were later denoted by the letters A, B, C, and D, respectively. The Black Gebel, or stratum D, was the lowest layer in which human remains or signs of human activity were found. For obvious reasons, very few human remains came to light in stratum A. During the excavation it became increasingly evident that stratigraphy bore an important relation to the habitation of the site. The three layers B, C, and D probably indicate three stages of occupation in point of time, stratum D being the oldest and stratum B the most recent. A detailed description of them is given by Mr Frank Addison in Appendix I.

Although the work at Jebel Moya was never wholly completed, a large number of cases containing material obtained from the excavations, together with the field records, were shipped to and stored in England. These were transported from one storehouse or depository to another in the intervening years with the worst possible consequences for the preservation of the human remains.

The material available for the present study comprises (i) the records of the field measurements and other observations on each skeleton found in the graves, and (ii) what survives of the remains themselves. Altogether 2903 individual cards were received, 326 of which contain all or most of the measurements taken at various times, 1135 some, and 1442 none at all. The human remains now consist of 98 crania, 139 mandibles, 70 right femora, 66 left femora, 54 right tibiae, 54 left tibiae, 47 right humeri, 42 left humeri, 40 right radii, 43 left radii, 22 right ulnae, 19 left ulnae, 14 right clavicles, 17 left clavicles, and three right and one left fibulae. In addition, there are nine more or less fragmentary pelves (five of which can be associated with individual skulls and limb bones), as well as a number of odd vertebrae and bones of the extremities. These, and the few bones belonging to immature individuals, are not taken into account in the figures given above.

In view of the vast amount of data available from the field cards, it was at first decided to depend primarily on them for an analysis of the Jebel Moya material and to use the surviving bones only as a control to test the comparability of the measurements taken by different workers during the three consecutive

seasons, viz. 1911–12, 1912–13 and 1913–14. (The first season is omitted here, since it was in effect a 'pilot' survey of the site, and no human remains discovered in the course of it are preserved.) The second season, in which Derry carried out the anthropological work, ended with the excavation of the grave numbered 709. Altogether 715 anthropometric cards were used in this season. The third season, when Ray and Buxton were the anthropologists, covered the graves numbered from 710 to 1020, and 212 cards were completed. Nearly 2000 cards are available for that of the fourth season, when the anthropological team consisted of Oldham, Hambly, and Hussey.

Three different types of anthropometric card were employed, one in the second and third seasons and two in the fourth season. Both those used in the fourth season had 'Stratum' as a printed heading, and a manuscript note on the stratum from which a skeleton had been recovered, was, whenever possible, added by Dr Samson to cards relating to the second and third seasons. In all seasons, however, four items were included, which, besides such headings as 'Locality' or 'No. of cemetery' and 'Grave No.' printed on each card for systematic recording, were intended for purposes of classification. These are (i) 'Race', (ii) 'Sex', (iii) 'Age', and (iv) 'Total Height'. Furthermore, under 'General Remarks' the cards contained references to associated grave-finds, such as beads, labrets, and pendants.

The significance of the heading 'Stratum' has already been noted, but Addison has clearly shown that the original stratigraphic division was unsatisfactory. During the excavations a grave was classified according to its depth from the surface, irrespective of the fact that the site suffered considerably from denudation after it had been abandoned by the inhabitants. As a result, the stratigraphy was in many places disturbed by overlapping, and the classification of the strata in the way described could not, therefore, be uniformly accurate. Addison has ingeniously reconstructed the stratification of each grave by considering stratum C as a base, and his conclusions have been adopted in this study.

The race of the individual was recorded in the second season by Derry as 'Negroid', 'Non-Negroid' or '?' (i.e. unknown). In subsequent seasons, however, most of the cards do not include this item, though occasionally the race has been described as Negroid or Non-Negroid. The sex of the individual was given as '♂', '♂?', '♀', '♀?', or simply '?'. In many cases Derry attempted to ascertain the approximate age of the individual in years, but later it was uniformly noted as 'Young', 'Young Adult', 'Adult', 'Old', 'Senile', or '?'. The 'Total Height' was the length of the skeleton lying in the grave. This naturally varied according to the posture of the body and did not represent the

correct stature of the individual. It has not been considered an important enough item for classification.

The existing crania and other bones bear the number of the grave from which they have been excavated. In the case of graves from which more than one skeleton was recovered, the supernumerary burials were marked A, B, C, D, and so on. In several instances the number given at the time of excavation had become obliterated in the course of years, and many bones were renumbered in England. Inevitably, frequent mistakes occurred during renumbering, and some of the specimens that were marked anew bear a queried grave number. In comparing the measurements taken on such bones in the laboratory with those measurements on the corresponding field cards, we were forced to reject several cases in which the renumbering was queried or the skull had been marked as 'N.N.' (i.e. no number). If the fact of the limited amount of material at our disposal is taken into account, however, it will be understood that we could not afford to be too rigid in our rejections where the grave number had been altered.

Through the courtesy of Mr Addison, access was had to various documents relating to the excavation. These consisted of a diary kept by the field anthropologists, which was started at the time of Ray and Buxton, and continued up to the final season; an unpublished report written by Derry, which was completed after the second season and dealt with the physical characteristics of the people of Jebel Moya; a printed report on their pathology by Ray & Buxton;* and a bunch of loose papers containing field notes and some calculations by Dr Samson. Finally, Mr Addison kindly made available the tomb cards and the charts and maps of both the site itself and the distribution of the artifacts found during the excavations, as well as a copy of the typescript of his archaeological report, which was invaluable in the initial formulation of the problems connected with the skeletal remains.

The study of the archaeological material from Jebel Moya was begun by Messrs Addison and Kirwan in 1937, with an interruption from the beginning of the war to September 1945. After a consideration of the evidence, Addison concluded that 'the A and B strata must have been deposited during the Napatan period, and the settlement must have been abandoned before the beginning of the Meroitic period, *i.e.* before 300 B.C.'†

The relationship between the stratigraphy and the occupation debris indicates that the settlement was formed about 1000 B.C., and Addison adds:

> From the nature of the data this figure cannot be regarded as accurate within a century or so either way, but it is sufficient to show that the occupation of the site does not stretch back

* Ray & Buxton (1914).

† Addison (1949), p. 253.

into remote antiquity. The Jebel Moya settlement was not a pool of long established neolithic culture left by a receding tide. At the other end of the scale, it is impossible to say with certainty when the site had become completely deserted. . . . The decline in population began soon after 550 B.C. and the site must have been virtually abandoned by 400 B.C., though it is possible that a few people continued to live there for some indefinite time longer.

There is nothing to show what caused the abandonment of the settlement. The occupation did not end suddenly and catastrophically as a result of hostile attack and a massacre of the inhabitants; the population simply declined fairly rapidly. To judge from the Tomb Plan the most natural reason for the beginning of the decline would be that the valley had become uncomfortably crowded; the people needed more living-space. Another reason, however, might be that the northward drift of the tribes away from the Jebel Moya area had already begun.*

Addison has also attempted to make certain inferences concerning the origin of the inhabitants of Jebel Moya from archaeological considerations, and from the greater preponderance of women over men, as revealed by the field anthropologists' assignment of sex to the skeletons excavated. He states:

So far the evidence of the pottery from Jebel Moya has led us to assume affinities between the inhabitants of that settlement—or some of them—and the people, who, in Meroitic times, lived in the Northern Sudan. But when we consider the habits and customs of the Jebel Moyans as revealed in their graves, we have to turn for affinities in exactly the opposite direction, to wit, to the Southern Sudan. It is in that region that today are found such practices as the wearing of lipstuds and the extraction of incisor teeth; and on the archaeological evidence it seems clear that some of the ancestors of many of the pagan tribes now living in the Southern Sudan must at one time have lived at Jebel Moya. It remains to be seen how far this evidence is supported by that presented by the human remains, for the work of the physical anthropologists on the Jebel Moya skulls, is not, at the time of writing, complete. But even if a racial connection between some of the inhabitants of Jebel Moya and certain modern Nilotic tribes can be established, it does not materially contribute to the central problem posed by the founding of the settlement. It would merely show, what in some cases we already know, that some of the southern tribes in earlier times lived farther north than they do now. It has already been noted . . . that the persons who at Jebel Moya were addicted to the kind of customs still practised in the pagan south were predominantly women, and that in general there were far more women than men on the site. The various styles of pottery decoration, too, have been explained on the assumption that women of various tribes—not necessarily those now represented in the south—had from time to time been introduced into the valley. The more the evidence is examined the clearer it becomes that the Jebel Moya settlement was founded by a band of enterprising and possibly predatory people who enslaved, or took in marriage, women of all the tribes into whose midst they had forced their way. Jebel Moya was not a source from which anything sprang,

* Addison (1949), pp. 254–5.

whether culture or tribes or customs. On the contrary, it drew into itself samples of all these things from the surrounding countryside, and the effect is as if a net had been cast far and wide over the Gezira and the resulting catch deposited in the rock-bound valley at Jebel Moya. The real problem is, then, who were the original settlers at Jebel Moya and whence did they come?

The available data are, unfortunately, insufficient for a solution. It is fairly certain that the intruders were a people with a purely neolithic culture, and for this reason it does not seem likely that they reached Jebel Moya by way of the Nile Valley. On general grounds the writer inclines to the view that the original settlers reached Jebel Moya from the west after fording the White Nile. There is plenty of evidence of neolithic occupation in the now empty and largely waterless spaces of northern Kordofan and the Libyan desert. . . .*

To complete the picture, Addison remarks:

In any case, if a group of people could come from the Western Desert and settle, as they did, on the Nile at El Kurru—a group, moreover, with sufficient character and energy to dominate the local riverain population—it is equally possible for a similar group to have reached Jebel Moya at much the same time.†

The text of the archaeological report is concluded with the following lines:

What evidence the conclusions of the physical anthropologists will provide remains to be seen. The difficulty here is that it is impossible to identify the graves of the earliest settlers at Jebel Moya with absolute certainty, so that it is not easy to group the skulls for purposes of measurement and calculation. It is probable, too, that the physical characteristics of the original settlers would soon become modified by interbreeding with local stocks. There may, however, have been a ruling family on the site in whose veins the blood of the first settlers ran undiluted, and it is the members of this local aristocracy who would be most likely to wear the beads and trinkets imported from Napata. It is, therefore, on the skeletons of the wearers of these beads that non-negroid, or non-Nilotic, characteristics, if they exist, are most likely to be found. Beyond this, with the archaeological material, the present writer is unable to go.‡

So much for the archaeological side of the Jebel Moya excavations. The major anthropological problems facing us may now be formulated as follows:

(*a*) According to the sexing of the skeletons by field anthropologists, many more females than males were excavated. To what extent can this grouping of the human remains be justified?

(*b*) In view of the fact that the field measurements on the human remains were made by three different observers or teams of observers during three seasons, how far were their techniques standardized, and are the measurements comparable or not with those taken in accordance, say, with the scheme now most widely employed in Britain, the biometric?

* *Ibid.* pp. 257–8. † *Ibid.* p. 259. ‡ *Ibid.* p. 260.

(*c*) The archaeological report suggests that about 1000 B.C. a small number of immigrants, possibly non-Negroid, came to settle at Jebel Moya from the west of the Nile, later interbreeding with the womenfolk of the autochthonous inhabitants of the surrounding district who were probably Nilotic Negroes. Do the Jebel Moyans represent a racially homogeneous group as far as physical characters are concerned, and, if there is heterogeneity, is it possible to isolate the 'pure' types among them from the 'mixed'? In other words, in order that the hypothesis put forward by the archaeologists may be tested, how internally consistent are the human remains from Jebel Moya?

(*d*) Finally, what is the anthropological position of the ancient inhabitants of Jebel Moya—how do their physical characters compare with those of series from neighbouring areas, and can we determine their relationship to other racial groups in Africa?

CHAPTER 2

THE FIELD OBSERVATIONS AND THEIR RELIABILITY

Since the human remains were studied during three separate seasons, each in charge of a different anthropologist, it is necessary in the first instance to examine the comparability of the results in relation to (*a*) the determination of sex, and (*b*) the technique of measurement employed by the various observers. The question of accurate sexing is particularly important, as the thesis put forward by the archaeologists regarding the racial composition of the Jebel Moya population is based to a large extent on the allegedly marked preponderance of females over males.

The existing human remains were sexed jointly by Trevor and Mukherjee at Cambridge by anatomical appreciation. For obvious reasons, only the adult specimens were considered, and the result of the sexing is shown in Table 2.1 below.

TABLE 2.1

Basis of laboratory sexing	Sex assigned						
	♂	♂?	♀	♀?	♂+♂?	♀+♀?	Total
Cranium, mandible, and pelvis	1	—	—	—	1	—	1
Cranium, mandible, and limb bones	13	4	6	1	17	7	24
Mandible, pelvis, and limb bones	2	—	2	—	2	2	4
Cranium and mandible	20	—	14	2	20	16	36
Cranium and limb bones	2	—	3	1	2	4	6
Mandible and limb bones	1	2	1	1	3	2	5
Cranium	21	9	26	16	30	42	72
Mandible	20	12	23	9	32	32	64
Limb bone	76	16	42	23	92	65	157
Total	156	43	117	53	199	170	369

The first column of the table indicates the nature of the bones on the anatomical features of which the laboratory sexing was based. Most of the crania were incomplete, and many were extremely fragmentary, consisting only of the frontal bone or of the two parietals with very small portions of the frontal and the occipital. The mandibles were in a better state, although often only one side was preserved. The numbers of the other bones of the skeleton which were

available have already been noted in the previous chapter. In some cases they were broken beyond repair and not suitable for measurement, but use could be made of them for sexing.

It can be seen from Table 2.1 that the laboratory sexing shows nearly equal proportions of males and females, viz. 199 and 170, when the ♂ and ♂? and the ♀ and ♀? specimens are reduced to two separate groups. The slightly higher proportion of males (54%) to females (46%) may be just a case of chance fluctuation, since the present sample is very small when compared with the total number of individuals excavated. Again, more of the stronger male specimens may have survived the vicissitudes of post-mortem selection, although this should have been evident in the field. It is interesting to note, however, that where our sexing is based on the consideration of the features of the cranium, mandible, and pelvis or limb bones taken together, or even where any two or (excluding the pelvis) even one of these are taken into account, the proportion of males tends to be consistently greater than that of females. This is shown in Table 2.2.

TABLE 2.2

Basis of laboratory sexing	Number			Percentage		
	♂+♂?	♀+♀?	Total	♂+♂?	♀+♀?	Total
Three types of bones	20	9	29	69	31	100
Two types of bones	25	22	47	53	47	100
One type of bone	154	139	293	53	47	100
Total	199	170	369	54	46	100

It is evident from Table 2.1 that, when the limb bones are considered alone, our sexing gives an appreciably higher percentage of males than of females (59 and 41% respectively). This may be accounted for by the fact that, although the limb bones would be more liable to destruction during the transport from one place to another, as the male specimens were comparatively stronger, the probability of their survival was greater. But the larger proportion of males to females in the cases where the sexing was based on the anatomical features of more than one type of bone seems to indicate the same tendency. Sexing from a combination of cranium, mandible, and pelvis or limb bones obviously enhances reliability. Table 2.2 at least suggests that it is very unlikely that the population at Jebel Moya comprised more females than males.

It would seem, then, that the field sexing of the Jebel Moya collection as a whole leaves much to be desired and can hardly be accepted as accurate. Table 2.3