

# SBORNÍK NÁRODNÍHO MUZEA V PRAZE

ACTA MUSEI NATIONALIS PRAGAE

Volumen XXX B (1974), No. 3

REDAKTOR JIŘÍ ČEJKA

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## SOMATIC DISTINCTIONS BETWEEN THE ETHNIC GROUPS OF EGYPTIAN NUBIAN MEN

### SOMATICKÉ ROZDÍLY MEZI ETNICKÝMI SKUPINAMI EGYPTSKÝCH NÚBIJSKÝCH MUŽŮ

Práce se zabývá otázkou existence somatických rozdílů mezi třemi usedlými etnickými skupinami Núbijsců navzájem a mezi nimi a Abábdy, nomády Východní pouště. V materiálu zahrnujícím 417 dospělých mužů mezi 21 až 55 lety bylo analyzováno 70 metrických a popisných znaků. Výsledky ukázaly největší rozdíly mezi Kenúzi a núbijskými Araby, nejmenší mezi Kenúzi a Fedidži. Mezi núbijskými Araby a Fedidži byl nalezen střední stupeň odlišnosti. Abábdové se jeví od ostatních skupin poměrně málo rozdílní v metrických znacích — pravděpodobně pro malou početnost jejich vzorku — avšak jejich popisné znaky odhalují jejich základní odlišnost od núbijských usedlých skupin, což odpovídá jejich jinému původu. Výsledky jsou stručně diskutovány ve světle některých historických dat o núbijských skupinách.

The modern Egyptian Nubians are divided into three ethnic groups. Going from the north to the south we find in the country the Kenuz, the Nubian Arab and the Fadidja. These three groups differ from one another in the language or the dialects they speak, the traditions and a number of other features. In the present work the author tries to answer the question whether this division is valid also from the viewpoint of ethnic anthropology, that is whether there exist among these three groups of people any substantial number of important somatic distinctions. Attention is also given to the different character of yet another ethnic group, of the Ababda, who belong to the group of the nomadic Bedja tribes in the Eastern Desert. The members of this tribe settle gradually in some communities of North Nubia.

The analysis is based on the examination of 417 fully adult males at the age of 21 to 55 years, which was conducted by the Czechoslovak-Arab Expeditions to Nubia in the years 1965 and 1967. The 417 males included 103 Kenuz, 115 Nubian Arab and 175 Fadidja. The sample of the Ababda is not numerous (n=24) and is included here only for general orientation (plates II—V).

The evaluation is based on 9 cephalometric features and 11 cephalometric indexes, 9 somatometric features and 11 somatometric indexes, 6 features and 3 indexes of the body composition, 5 functional or physiological features and 16 descriptive features. All in all the analysis is based on 70 features. The statistical significance of the metric features and indexes was documented by t-test with the significance level  $p=0,5\%$ .

In cephalometric features the Kenuz show the highest absolute values of all the examined groups. (With the exception of the height of the head, where they occupy the second place.) The values for the Fadidja are in the middle, very close to the ideal average for all Nubians (with the exception of the height of the head, where they show the highest values). Low values are characteristic for the Arab, with the exception of the medium bigonial breadth, and for the Ababda, with the exception of the medium length and breadth of the head, medium bigonial breadth and great minimum breadth of the forehead.

In addition to these differences in the general growth trend the cephalometric indexes reveal a number of statistically important differences in shape. The Kenuz are markedly more mesocephalic (77,6) than the Arab and the Fadidja (76,3): the Ababda stand in the middle. The Fadidja are more orthocephalic (66,5) than the Arab (65,7), while the remaining groups stand again in the middle. The Fadidja are also more acrocephalic (87,2) than the Kenuz (85,2), the Arab (86,1) and the Ababda (84,4), the latter being already in the category of metriocephalic individuals. (The significance of the last-mentioned difference has not been proved.)

In the frontoparietal, jugomandibular and facionasal (height of nose expressed in per cent of the height of the upper face) indexes we did not find any differences among the ethnic groups examined. However, we did find an important difference in the morphological facial index between the more leptoprosopic Kenuz (90,3) and the less leptoprosopic Arab (88,6), the average values for the remaining groups being between these two extremes.

In the jugofrontal index the low values of the Arab (76,9), differ markedly from the higher values of the Kenuz (77,8) and of the Ababda (79,0), while the Fadidja stand in the middle. In the transverse cephalofacial index the low values of the Kenuz (91,4) differ significantly and the equally low values of the Ababda (91,5) differ insignificantly from the values of the Fadidja (92,4) and the Arab (92,8).

The nasal index of the Kenuz (73,6) is much more mesorrhine than that of the Arab (71,2), who also stand very close to the low index of the Ababda (71,5), while the index of the Fadidja (72,3) is in the middle. Marked differences between the examined groups are shown by the zygo-

nasal index. Here, high values are characteristic for the Kenuz (29,9), medium values are characteristic for the Fadidja (29,4), while the low values of the Arab (28,7) and the Ababda (28,2) stand in contrast. A comparison of the absolute values of the breadth of the face and the breadth of the nose shows that with the Kenuz and the Fadidja the nose breadth is relatively greater than the breadth of the face, while with the remaining groups the breadth of the nose is relatively less than the facial breadth.

Generally speaking, in cephalometric features the greatest differences exist between the Kenuz and the Arab (65 per cent of all features), less significant differences may be observed between the Fadidja and the Arab (40 per cent of features), and still slighter differences exist between the Kenuz and the Fadidja (30 per cent of features). The Ababda seem to be yet less different from the other Nubian groups, but we must bear in mind that this is based on a very small sample of population. At the same time the Ababda stand closer to the Arab (5 per cent of differing features) than to the Fadidja (20 per cent of features) and the Kenuz (25 per cent of features).

In somatometric features the highest absolute values have been found in the Kenuz, with the exception of the cubit length and the strikingly low values for the biacromial breadth. Low values for growth intensity are found with the Arab and the Ababda. We are particularly surprised by very low values of the measurements of the thorax of the Ababda.

In weight the heavier Kenuz (62,7 kg) and Fadidja (61,9 kg) differ markedly from the lighter Arab (58,8 kg) and especially the Ababda (57,2 kg). The difference between the Ababda and the Kenuz is, however, insignificant. In height the taller Kenuz (169,8 cm) and Fadidja (168,5 cm) differ significantly from the shorter Arab (166,2 cm); the difference between them and the Ababda (167,2 cm), however, is not significant. In Rohrer's index it is of interest to note the significantly lower values for the Ababda (1,22) in comparison with the remaining groups (1,28—1,29).

No important differences were shown by the cormic index, the relative biacromial and relative bicristal index, by the index of the forearm in per cent value of the length of the arm, and by the thoracic index.

The relative length of the arm and the relative length of the forearm are significantly bigger with the Fadidja (45,4 and 28,1) and the Arab (45,8 and 28,0) than with the Kenuz (45,4 and 27,7), while the Ababda are characterized by medium values. In relative measurements of the thorax the Ababda are characterized by strikingly low values (transverse diameter 15,1, depth of thorax 11,2), which differ markedly from some others (15,6; 11,6—11,7). Of the other indexes the acromo-iliac index is most important for the establishment of differences. It is markedly higher with the Kenuz (72,4) than with the other groups examined, because of the low values for the biacromial and the high values for the bicristal breadth. At the same time it is significantly lower with the Fadidja (69,9) than with the Arab (71,0) as a result of

the high values of the biacromial breadth and low values of the bicristal breadth.

All in all the differences in body proportions have been found less pronounced than those in absolute measurements. This proves that despite some differences in the overall growth trend there do exist certain identical features in the body build of all groups that have been examined. In somatometric features the greatest differences are to be found between the Kenuz and the Arab (45 per cent of features), less significant differences appear between the Fadidja and the Arab (35 per cent of features), and the slightest differences are observed between the Kenuz and the Fadidja (25 per cent of features). The Ababda differ much less, but again with the proviso mentioned earlier. The Ababda stand much closer to the Arab (10 per cent of different features) than to the remaining ethnic groups (20 per cent of features).

The features of body composition have already been discussed on other occasion (STROUHAL 1971 b). Here it will suffice to mention the fact that the vacillations in body height and weight with different ethnic groups are connected with more or less intensive development of various body tissues, such as bones, muscle and fat. From this viewpoint the greatest differences appear between the Kenuz and the Arab (55,5 per cent of features), less pronounced differences are to be found between the Fadidja and the Arab (22,2 per cent of features) and the slightest differences are between the Kenuz and the Fadidja (11,1 per cent of features). As for the Ababda slight differences are to be found between them and the Arab (11,1 per cent of features), more marked ones exist between the Ababda and the Fadidja (33,3 per cent of features) and very pronounced distinctions appear when we compare the Ababda with the Kenuz (44,4 per cent of features).

With regard to functional and physiological features, we have not found, with some isolated exceptions, any substantial differences in dynamometry. On the other hand, however, some significant differences have been found in the characteristic features of the circulatory system. The Kenuz have significantly higher pulse rate per minute (76,5), systolic (124,6 mm Hg) and diastolic blood pressure (80,4 mm Hg) than the other two Nubian groups (Arab - 74,2; 118,5 mm Hg; 79,0 mm Hg; Fadidja - 73,0; 118,2 mm Hg; 77,7 mm Hg). Still higher values have been found with the Ababda (pulse: 79,8; systolic blood pressure: 126,5 mm Hg; diastolic blood pressure: 79,0 mm Hg). Significant differences have been found only in the pulse as compared with the Fadidja, and in the systolic blood pressure as compared with the Arab and the Fadidja.

The results of the study of descriptive features significantly complement the results of the study of metric features. In this work there have been used the generally known and applied schemes and scales published in anthropological manuals (MARTIN 1928, EICKSTEDT 1937—43, OLIVIER 1960).

As regards the characteristic features of the pigmentation there has been examined first of all colour of the skin. It was examined on the abdomen (unexposed, basic colour of the skin) and also on the forehead (exposed skin colour). With the Kenuz we have found the greatest re-

presentation (58,2 %) of the dark shades of unexposed colour of the skin (nos. 20—30 of S c h u l z's scale); the figures for the Arab (46,1 %), Fadidja (42,9 %) and the Ababda (37,5 %) were gradually lower. With the Fadidja we have found the greatest number of light shades (15,4 %, nos. 7—10 of Schulz's scale), while with the Kenuz (5,8 %) and the Arab (5,2 %) the values were lower and with the Ababda the light shades were completely absent. The examined ethnic groups are arranged in the same order if we study differences in the pigmentation of exposed skin which, with some minor exceptions, is in all Nubian ethnic groups within the limits of the dark shades (nos. 20—30 of S c h u l z's scale). Also the individual difference between the colour of the exposed and that of the unexposed skin leads to the same order of the ethnic groups.

Some significant differences may also be observed when we study the colour of the iris, though with all Nubian groups it belongs for the most part to the category of dark eyes. The greatest number of brown and light-brown eyes (nos. 4—5 of Martin's scale) has been found with the Ababda (33,4%), while the values for the Arab (13,9%), Fadidja (10,9%) and the Kenuz (8,8 %) are lower. Yet lighter shades (nos. 6 and 7 of Martin's scale) have been found only exceptionally with the Arab (2,6 %) and the Fadidja (1,1 %).

On the other hand no differences could be produced in the colour of the hair, because in all ethnic groups the hair belonged to the darkest shades (Y, Z) of F i s c h e r - S a l l e r scale. Only with the Ababda (6,2 %) and the Fadidja (2,9 %) there have been found, though exceptionally, some lighter shades of hair (W, T).

The shape of the hair shows, among other things, a preponderance of curly hair (categories f—i of M a r t i n's scale) with the Kenuz (61,4%), followed by the Arab (56,1 %), and the Fadidja (48,0 %). With the Ababda the curly hair was unusual (10,0 %).

The growth of beard, studied on the basis of C o n r a d's scheme, shows that meagre beard (1—2) is represented more frequently with the Kenuz (42,7 %) and the Fadidja (40,5 %) than with the Arab (37,2 %) and the Ababda (25,0 %).

In the hair-cover of the frontal part of the trunk, however, the situation is paradoxically different. This hair-cover is most frequently absent in the Ababda (54,3 %), followed by the Fadidja (48,0 %), the Kenuz (37,9 %) and the Arab (32,2 %).

Different are also the findings on the eye-lids (according to E i c k s t e d t's scheme). With the Kenuz we have found on several occasions epicanthus (f, 5,8 %), "nordische Hangfalte" (d, 4,8 %), and "Indianerfalte" (g, 3,9 %). With the Ababda the most frequent findings included "hottentotische Gardinenfalte" (b, 12,5 %), and "Negerfalte II" (c, 12,5 %). With the Arab we have found several specimens of epicanthus (f, 10,4 %), and of "nordische Hangfalte" (d, 6,1 %). With the Fadidja the most frequent finding was the "Indianerfalte" (g, 10,3 %), followed by epicanthus (f, 4,0%) and the "nordische Hangfalte" (d, 4,0%). The results of the examination of the Ababda differ very markedly from those gained in the examination of the remaining groups of population.

With the latter we may find, despite some quantitative differences, identity in the repertory of the individual structures.

In the shape of the bridge of the nose (after EICKSTEDT) there have been found only some minor and not quite conclusive differences, with the exception of a small number of straight noses and a higher number of either concave or convex noses with the Kenuz and a low number of wavy noses with the Fadidja and the Arab. Of greater importance is the shape of the nares as seen from below (after TOPINARD). Oval forms with the axis placed obliquely (c), or transversely (d) were represented most frequently with the Fadidja (40,8 %), followed by the Kenuz (35,0 %), while the figures for the Ababda (25,0 %) and the Arab (24,7 %) are lower.

The thickness of the lips is also a very important criterion of differentiation. Thick and swollen lips (nos. III and IV of Martin's classification) were found most frequently with the Kenuz (75,8 %), while with the Fadidja the values were lower (50,9 %). Close to the Fadidja stand the Arab (48,6 %), while the values for the Ababda are very low (30,4 %).

The shape of the forehead was divided into three categories: receding, vaulted and globed. Receding forehead was found more frequently with the Ababda (25,0 %), while the globed shape is more frequent with the Arab (21,7 %) and the Fadidja (18,3 %) than with the other ethnic groups.

Slightly to markedly prominent cheek bones were found more frequently with the Fadidja (61,1 %) and the Arab (60,8 %) than with the Kenuz (54,4 %) and the Ababda (41,6 %).

Slight to medium prognathism appeared more frequently with the Kenuz (49,5 %) than with the Arab (25,2 %), the Ababda (20,8 %) and the Fadidja (16,2 %).

The shape of the occiput (after EICKSTEDT) has shown, in substance, with the three settled Nubian a preponderance of the intermediately vaulted occiput (*gew*), followed by the less numerous category of mildly flat occiput (*m*) and the highly vaulted occiput (*aus*). Completely flat forms were an exception. In the group of the Ababda, on the other hand, the first place was occupied by the category of mildly flat occiput (*m*), followed by the intermediately vaulted and very flat occiput, while the strongly vaulted occiput was present only exceptionally.

Generally speaking, the descriptive features have shown, much better and much more clearly than metric features, the basic differences between the nomadic Ababda and the settled Nubian groups of population. Seen from the viewpoint of these descriptive features the Arab and the Fadidja seem to stand closer together than both these groups compared with the Kenuz.

In conclusion we may say that the division of the material into the ethnic groups is justified from the viewpoint of the morphological differences found in the course of the examination. The greatest differences from the other Nubian groups are displayed by the Ababda, though in a number of metric features this fact could not be verified by statistically significant results of the t-test, because of the low number of the Ababda

examined. Very striking is the Europoid character of these people and their origin also differs from that of other Nubian groups. They lived for long centuries outside the Nile Valley proper, in the Eastern Desert, and are perhaps related, according to evidence of some early Coptic sources, to the belligerent tribe of the Blemmyes, who are mentioned in the sources of the first centuries A. D.

Of the Nubian groups the greatest differences exist between the Kenuz and the Arab. The Kenuz are in substance a Negroid-Europoid amalgamate, which has been in existence since the times of the X group (4th to 6th century A. D., STROUHAL 1966, 1971 a). In the Arab this basis was overlaid with an Europoid element, perhaps as a result of a stronger influx of Arab immigrants in the period from the 7th to the 14th century A. D.

In comparison with the Fadidja the Arab show fewer differences. This may be caused by the fact that the Fadidja, too, were exposed to a Europoid element brought to the Turkish garrisons from the 16th century onwards by soldiers of Balkan and Caucasian origin and by soldiers from Asia Minor. In addition to this fact the steady influx of Sudanese Negro slaves has resulted in the present morphological heterogeneity of the Fadidja.

The slightest differences are observed between the Kenuz and the Fadidja, probably as a result of their common origin in the period of the X-group (4th to 6th century A. D., STROUHAL 1966, 1971 a). In the course of the following time, mainly as a result of the changes in the Fadidja, there appeared between these two ethnic groups morphological divergence. Parallel to this morphological divergence we may also observe dialectic and cultural divergence, caused by a number of other factors and influences.

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