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EXCAVATIONS AT PALAIKASTRO. II.

§ 11.—HUMAN REMAINS AT HAGIOS NIKOLAOS.

ABOUT a week after my arrival at Palaikastro, Mr. Tod having made preliminary investigations resulting in the discovery of human crania associated with pottery of a very early period at Hagios Nikolaos, it was suggested that I should visit the locality. The present report contains an account of the results of my examination made in accordance with that suggestion. The date was April 3rd, 1903, and some final notes were added on April 8th, 1903. The simple building dignified by the title of Hagios Nikolaos is placed about five miles inland from the shore of Grandes Bay, hidden in a perfect labyrinth of intersecting valleys and ravines. The particular glen, on the southern slope of which the church is situated, runs, generally speaking, east and west, but turns at either extremity eastwards, running first to the south and then sharply resuming an eastward direction; while the western end, the head of the valley, trends slightly to the north.

A steep ascent across a couple of fields above the church brings one to the foot of the rocks forming the southern boundary of the valley, where the familiar local structure of an easily-weathered limestone is met with at once. Thence one must scramble up among great masses of lentisk and carob, with numerous thyme and sage bushes, in the interstices of fallen boulders, till, at about sixty feet above the foot of the scarp, one arrives at a cleft which gives access (cf. Fig. I.A), to the 'cave' discovered by Mr. Tod. Rock-shelter is a more appropriate expression than cave, for it is a mere shelf of rock, receding at most to some five or six feet from the face of the cliff, by the overhanging of which, this

FIG. 1.—PLAN OF ROCK-SHELTER AT HAGIOS NIKOLAOS, AS EXCAVATED, APRIL 8TH, 1903.

'abri sous roche' is sheltered. Probably the shelter has been the resort of shepherds from time immemorial, and a particular attraction is furnished by the absence of water dripping from the upper parts of the rock, the cause of abundant mossy growths in similar shelters in the same line of cliffs.

From the platform one looks down on the little church, and beyond it at the corresponding cliff-wall of the northern side of the glen. The latter wall is formed by a brilliantly-coloured mass of conglomerate, a medley of

FIG. 2.—VIEW OF INTERIOR AND FLOOR OF THE ROCK-SHELTER AT HAGIOS NIKOLAOS, LOOKING SOUTH-EAST.

Access to the shelter is obtained on the left-hand side (cf. Fig. 1).

reds and yellows in regular stratification. Beyond this again, a vista of low flattened ridges with an occasional peak, to which finally the eastern sea succeeds, and, beyond the nearer island of Elasa, one can even make out Karpathos and Kasos on the horizon.

Such is the situation and such the outlook from the site to be investigated. The dimensions of the platform may be gathered from the accompanying plan drawn approximately to scale. Though described as a

platform or plateau, the floor was in reality most uneven, and, as a result of the excavations of Mr. Tod's party, only that part to the right (west) of the diagram remained at all level, the remaining parts having been so disturbed as to leave two shallow pits. In the stage represented in the diagram, however, further excavations had been carried out on the part at first untouched, till this level was brought down as low as or lower than in these other regions. But on my arrival the whole floor was encumbered with débris from the superficial digging. Bones were numerous, some in fragments, a few complete and intact. Among the fragments were several referable to the skull, and remains of about six skulls were thus seen. Four skulls were speedily brought to light on the resumption of operations, and eventually others more or less fragmentary, bringing the total up to ten. They occurred in or about the middle region of the shelter (cf. Fig. 2), not in the very deep pocket at its eastern end, or near the western end. Moreover it was estimated that Nos. 4, 5, 8, 9 (shewn in the plan) must have been less than six inches below the original level broken up by Mr. Tod's party. This was shewn by their positions in relation to the area on the large stone marked in the plan (q.v. B.), the worn and polished surface of which indicates its long exposure.

A few bones of small mammals including the skull of a badger (an animal still locally abundant) occurred, but there was a striking absence of any accumulation of such remains or of the remains of domestic animals or birds, such as would suggest that the shelter had served as a habitation or dwelling-place. Charcoal fragments occurred, but these were recent. The notes made upon the several specimens of skulls are given in the sequel; and it is now appropriate to make such general remarks as can be passed on the characters of the individuals whose remains were thus found, and on the circumstances of their interment.

In the first place, the remains are in my opinion those of individuals who agree in all essentials with that population of this part of Crete which is represented in the ossuaries at Roussolakkos and Patema (Palaikastro). The skull-form and characters are the same (cf. Fig. 3); long narrow skulls with full occiput, with long narrow faces. The limb-bones denote the same physical development and stature, feeble, as we consider it, in comparison with the stouter and sturdier modern inhabitants.

The crania differ from the four specimens collected by Mr. Tod, which appear to me to be of later date. The earlier specimens are just

as fragile as those at Palaikastro, and measurements had to be made as far as possible while they remained *in situ*.

The child's skull (No. 5) presents an example of precocious union of the two parietal bones, but this is an abnormality which may occur in any human race, and its significance is quite unknown. Probably it has no effect in modifying the intellect.

A femur bears a remarkable exostosis in its upper portion; this pathological condition may be due to one of a variety of causes such as (1) spinal disease, (2) aneurysm of the femoral artery, (3) a punctured wound, (4) the disease known as myositis ossificans, (5) osteo-arthritis or

FIG. 3.—TWO OF THE ANCIENT CRANIA EXHUMED AT HAGIOS NIKOLAOS.

'rheumatics,' (6) bone-hypertrophy following fracture. In the absence of more definite evidence, I am inclined to rule out (1) (2) (4) (6) and to favour (3) or (5), but in any circumstances no particular inferences as to the ethnic relations of the individual can be drawn from the occurrence. Similar exostoses were seen in two other cases, at Roussolakkos and Patema respectively.

Finally, I incline to the belief that the skeletons were transported to this shelter and here deposited as in the ossuaries at Roussolakkos. The absolute confusion of the remains indicates this, and it is well-nigh incredible that this small shelter could have been the habitual residence of the comparatively large number (at least a dozen) of persons whose remains

have been found. That pottery should be found is not surprising in view of the number of sherds and cups found in corresponding circumstances at Roussolakkos.

The net result then of my investigation is to indicate that the inhabitants of Crete who used the earthen vessels found at Hagios Nikolaos belonged to the same stock as those whose remains are found at Roussolakkos and at Patema, and that they are, like them, referable to the so-called Mediterranean race.

The notes on the crania and long bones are here appended.

Brief Notes on the Crania found at Hagios Nikolaos.

- No. I. Fragments of the synostosed parietal bones of what was probably a mesati-cephalic skull. The individual was probably about 50 years of age (ref. D. 150).
- No. II. (D. 151). An adult dolicho-cephalic male skull; it contained cave-earth, small helices, and three phalanges, clear evidence of the artificial circumstances of its interment here.
- No. III. (D. 152). A calvaria with the base, but no face or mandible. An ovoid dolicho-cephalic female skull: the occipital renflement is distinct: the brow-ridges insignificant. In all respects very similar to the prevailing skull-form at Roussolakkos and Patema. The left orbit contained a cuneiform bone of the foot, wedged firmly in.
- No. IV. (D. 153). Portions of the synostosed parietal bones of an adult skull, of dolicho-cephalic proportions.
- No. V. (D. 154). Fragments of the cranium of a child of about 6 years of age; remarkable for premature synostosis of the parietal bones. It is broader than the other crania, being just brachy-cephalic in proportions.
- No. VI. (D. 155). Frontal and parts of the parietal bones of an adult male skull of seemingly dolicho-cephalic proportions: sagittal synostosis complete; the individual was about 50 years old. The brow-ridges are not massive.
- No. VII. (D. 156). Parts of the squama occipitis of the parietal and frontal bones of what was probably an adult female skull of mesati-cephalic proportions.
- No. VIIa. Fragment of a thick occipital bone.
- No. VIII. (D. 157). Large oval dolicho-cephalic cranium, without the face, of an adult male: sagittal synostosis nearly complete: brow-ridges moderately developed: the transverse occipital crest is not marked.
- No. IX. (D. 158). Large oval dolicho-cephalic male skull. The sagittal suture is completely synostosed. The brow-ridges are moderately developed. The occipital crest and mastoid processes are massive. Nasal and orbital apertures are small.
- No. X. (D. 159). Mesati-cephalic skull which at once crumbled into fragments. Sex and age doubtful.

No. Xa. Fragments of a large skull with marked occipital renflement: the fragments are too few and small to yield measurements.

The following cephalic indices are provided by the foregoing specimens.

No. II. (D. 151)—74.2.
No. III. (D. 152)—74.3.
No. V. (D. 154)—80.4.
No. VIII. (D. 157)—72.7.
No. IX. (D. 158)—71.5.
No. X. (D. 159)—78.

The following averages result from measurements of the long bones of the limbs of adults: despite the great number of bones, very few were perfect enough to provide data.

Humerus: average length of	2	.	.	.	.	.	313	mm
Radius:	"	"	"	2	.	.	212	"
Femur:	"	"	"	3	.	.	383	"
Tibia:	"	"	"	5	.	.	321	"

In the same limb, the femur measured 372 mm., the tibia 283 mm.; in no other case could two bones be referred to the same skeleton.

As might be inferred from the small linear dimensions of these limb-bones, the estimated stature of the individuals was very slight; if we suppose that the bones which could be appropriately measured all belonged to female skeletons, the probable average stature of the latter was about 1520 mm., which, however, is not very different from the average stature of eight modern Cretan women of Palaikastro, viz., 1546 mm.: on the supposition that the bones are male, the probable stature was on the average about 1560 mm., which falls far short of the average stature of even the prehistoric male inhabitants of Palaikastro (1625 mm.), much more so of the modern male inhabitants of that locality (1677 mm.). The probability is therefore that these bones are female, and are to be associated with one or other of the feminine crania above described.

§ 12.—OSSUARIES AT ROUSSOLAKKOS.

The following account is practically identical with section (a) of my Report to the Cretan Committee of the British Association (cf. *Reports*, Section H, 1903, Southport meeting). On the 26th March, 1903, the day of my arrival at Palaikastro, I commenced work on the ossuary discovered and partially excavated in the preceding year (cf. Report by