THE SMALL OBJECTS
AND
THE HUMAN SKULLS
FOUND IN THE
HAL-SAFLIENI PREHISTORIC HYPOGEUM
AT
CASAL PAULA, MALTA

SECOND REPORT
BY
T. ZAMMIT, M.D., C.M.G.,
CURATOR OF THE MUSEUM.
T. ERIC PEET, M.A.
R. N. BRADLEY, B.A.

MALTA
1912
Since the publication of the first report, in 1910, no very extensive excavations were conducted at Hal-Saflieni but the material, so far collected, was carefully classified and studied.

Mr. E. T. Peet, very kindly, undertook to describe the small objects met with in the Hypogeum. The comparison of our objects with similar ones, found in other neolithic stations abroad, cannot but prove of great interest to the student of the Maltese antiquities.

Mr. R. N. Bradley, who has spent long hours at Hal-saflieni and has given particular attention to the skulls found therein, has also consented to record his impressions in this report.

The number of skulls found in the Hypogeum is very great indeed but the soil, in which they were buried was so damp as to render them extremely friable.

Eleven of these skulls could be measured and photographed and it is hoped that from the data, herein tabulated, students will be able to judge of the importance of the human remains buried at Hal-Saflieni.

The dolicocephalic features of the skulls are evident, a fact which throws more light on the exclusive presence of the Mediterranean race in these Islands in neolithic ages. That the Maltese are the direct outcome of these old inhabitants can hardly, now, be questioned.

A twelveth skull, found in the fifties at Hagiar Kim, was likewise measured though its features differ from those of the Hal-Saflieni skulls. It is prognathic and points to a negroid origin. As this skull is exhibited at the Museum it is well that it be likewise described in detail to bring out the difference resulting from its comparison with the skulls of the Hypogeum.

T. Z.
FIGURES OF STONE AND EARTHENWARE

The most striking of these is a large limestone steatopygous (1) female figure, now 40 cm. in height. The steatopygy is very marked, the circumference of the body round the hips being 75 cm. The feet are broken off. The right arm is at the side with the hand on the hip. The left arm, now lost, was bent, with the hand under the breasts. The buttocks are slightly flattened above, as in most of these Maltese figurines. The head was not made in one piece with the body, but there was a socket left in the neck into which the head could be fixed by means of a corresponding peg. [Pl. I.]

Two heads found in the hypogeum may either or both have belonged to this or a similar figure. Both are of the same type. The lower part of the face is heavy and swollen, the nose is given in relief and the mouth and eyes by means of incisions. There is a small fringe over the forehead and the rest of the hair falls all round to the neck, covering the ears. [Pl. I.]

(1) I use this word in its accepted sense to include all figures which show abnormal fatness about the hips and thighs, though this is not always a mark of true steatopygy. I hope to discuss the point elsewhere.
Both the body and the hands were once painted red.

Two smaller figures of similar type are of semi-transparent white marble; height 65 and 67 mm. respectively. In both cases the flattening of the upper part of the gluteal region is noticeable. One of these two figures lost part of its head in antiquity, and a hole was then bored through the remaining portion of the head, probably in order to allow the figure to be suspended by a string as an amulet. [Pl. V. fig. 4, 5]

A fragment of a figure made of fine clay with a grey slip and well smoothed surface is of peculiar interest. The modelling is comparatively good and the steatopygy is not so marked as usual. But here again the upper part of the gluteal region is flattened, this time in such a way as to give the appearance of having been sliced away by a knife. The result of this is that the figure is only 5 mm. from front to back at the waist, and it naturally broke off at that point. The upper half is lost. Height 69 mm. [Pl. VI. fig. 9.]

Much rougher is the remaining portion of a standing female figure in grey clay. The head and legs have perished. The figure strongly resembles one of those found at Hagiar Kim. It was probably slightly steatopygous; the abdomen is enlarged and the breasts are pendant. The arms hang down at the sides. Signs of red paint are still visible. Height 38 mm. [Pl. VI fig. 7.]

The last of the human figures represents a steatopygous female in a sitting position, very similar to the somewhat larger figures of Hagiar Kim. The clay is ochre in colour. The head is lost. At the back the figure is flat or even slightly concave, a feature also noticeable in the examples from Hagiar Kim. Height 43 mm. [Pl. VI. fig. 6.]

Two animal figures of clay present some difficulties. [Pl. VI. figs. 8 and 2.] The work is wretched,
the clay having been roughly pinched up into shape and then dried in the sun. The body of the first is flat and broad and there are four short spreading legs. The head is small, the mouth being represented by a slit and the eyes by punctures. In each side behind the foreleg there is a puncture and there is another between the forelegs, a fourth in the centre of the body beneath, and a fifth in a corresponding position above. The second animal is similar to the first, but has a slight tail, and under the body there is a large conical protuberance with a deep vertical puncture in its centre. It seems clear that this object was mounted on a pin or small stick of some sort, and so perhaps was the other, to judge by the hole in the centre of its underpart. The lengths of the figures are 54 and 64 mm. respectively.

Another small object represents the head and neck of some animal. [Pl. VI. fig. 2.] The work is so rough that one cannot say what animal is represented, though it is surely one of the reptilia.

But the most perfect and most remarkable of the figures represents a woman lying on her right side on a rectangular bed or couch 125 mm. in length [Pl. II. and III.] It is made of a grey clay which has been fairly well fired and has a partly yellow surface. The bed itself consists of four longitudinal ribs laid on two cross pieces which serve as feet. Over the ribs is laid a rectangular mattress marked on the under side with incisions apparently representing rush-work, and rounded at the corners. The figure which reclines on the couch is markedly steatopygous, the thighs and upper arms being absurdly developed, while the extremities are very small. The right cheek rests upon a small rectangular pillow of uncomfortable appearance, evidently made of some hard material such as stone or wood. The hair is represented by a thin fold of clay laid like a wig over the back of
the head and reaching to the shoulders. It is incised to give the effect of hair. The body is naked as far as the waist, the right hand grasping the corner of the pillow and the left hand resting against the right elbow. The lower part of the body from the waist almost down to the ankles is clad in a skirt of remarkably modern appearance. Round the bottom there is clearly a flounce of considerable depth; front and back a vertical seam runs from waist to flounce. Above the flounce is a line of incised ornament in the form of series of arcs, convex side uppermost; above this another line of similar but longer arcs, and above this again a horizontal seam, which however, drops slightly front and back just before meeting the vertical seams. Above this last seam the skirt is plain, below it is covered with puncture ornament. These details are all taken from the left half of the skirt which is in full view, but it is clear from what can be seen of the right half that this was similarly constructed.

The whole figure was apparently once covered with red paint, traces of which still appear in the incisions.

A somewhat similar object in a lightly-fired clay represents a female figure lying face downwards on a couch. The couch in this case stands on four distinct feet joined by strong bars. Rush-work is again represented. The pillow is here even smaller than in the other case. The head is broken off at the neck. The upper part of the body is naked and the hands clasp the end of the bed. The skirt has been badly damaged, but judging from what remains it consisted of a series of flounces from top to bottom. The whole object was originally painted red. [Pl. IV. & V.]

Another couch very similar in form to this last is made of soft lime-stone and is 74 mm. in length. On it lies what seems to be a flat fish roughly cut in the stone. [Pl. VII. fig. 3, shows the couch from beneath.]
A fish of apparently the same species is made of dark grey clay well fired. The tail and head have perished, but there is a large fin above and another below. The scales are clearly and realistically marked by incisions. On each side of the flat body is marked a small longitudinal projection, apparently a fin. This same feature seems to be roughly shown in the limestone fish mentioned above. [Pl. VII. fig. 4.]

A head, 57 mm. high, broken off a figure, is of grey clay with a pinky-yellow surface once coated with red paint. The work is very rude in character and the eyes, nose and mouth are represented in relief. The lower part of the face is very heavy and the upper part tends to slope slightly back. The upper and back parts of the head are much damaged, but there seems to have been represented in relief a fringe of hair over the forehead and a mass of hair arranged like a wig covering the ears and falling to the neck all round. [Pl VII. 2.]

The miserable object of clay, [Pl. VI. fig. 3.] was merely pinched into the rough semblance of the human form, and the legs were then purposely or accidentally folded backwards.

OBJECTS OF FLINT.

The only objects of flint, if we except rough flakes, are a number of fine scrapers. They consist of fine flat flakes struck from the outer surface of very flat cores. Thus one side shows the white surface of the core and the other shows the bulb of percussion. They are usually shaped like a sector of a circle and the arc is sharpened to a fine edge by minute flaking on the core-side only. The bulb side of the flint is never worked at all. The usual length of these implements is 7-8 cm. [Pl. VIII.]
Exactly similar flints were found in the excavations on Corradino and there are examples from Hagar Kim, Ma'adra and Santa Verna.

Apparently similar are the Palestinian examples cited by Bliss (1) from Tell-el-Hesy.

OBJECTS OF SHELL.

One of the most curious features of the ornaments used by the people who buried in Halsafieni is the preva-lance of those made of shell. The thick walls of such shells as the Spondylus gaederopus, found often in a semi-fossilized condition, provided a white material with many of the advantages of stone, and at the same time much easier to work.

The objects made from this material may be classed as follows.

Buttons.

These are shaped like a cone or a small segment of a sphere. The under-side is flat and contains two converging holes through which the thread could be passed. [Pl. IX. figs. 6 and 11.]

One example of this type of button was accidentally pierced through the vertex. In order to remedy this a small peg of dark stone was cut out and fixed in the hole at the vertex, thus removing the defect and adding to the ornamental value of the button by the contrast of colours. [Pl. IX. fig. 2.]

Another fine example has three holes on the convex side, one in the centre and the others symmetrically placed one on each side of it. The two last are still fitted with minute plugs of dark material, probably stone. [Pl. IX. fig. 6.]

(1) A mound of many cities p. 123, fig. 250. I owe this comparison to Professor Tagliaferro.
These buttons vary in diameter from 8 to 30 mm. They were apparently preserved for long periods, for often when the first thread hole wore through another was pierced at any point which still remained practicable. They vary greatly in accuracy of cutting, some of the large examples being very exact. One specimen is beautifully carved to resemble a spirali-form shell.

Animal figures.

There are about half a dozen examples of birds. The body is round and short, and the neck long. In one case the head has survived and the eyes are marked. Neither legs nor wings are shown. Beneath the body is the usual thread hole, so that these objects were also used as buttons (1). [Pl. IX. fig. 12.]

Another example apparently represents a horned animal, possibly an ox. [Pl. IX. fig. 3.]

Pendants.

The rougher pieces obtained in breaking up the shelly material were often smoothed off and bored with a hole in order to be used as pendants. These seem to conform to no particular type, and vary much in shape. [Pl. IX. figs. 1, 4, 5, 8.]

Beads.

(a) The larger type is ellipsoidal, pierced along the major axis. [Pl. IX. fig. 9.]

(b) The smaller beads are cylindrical, usually about 5 mm. in diameter and from 2 to 5 mm. in length. The grain of the original shell naturally runs in various directions according to the way in which the bead was cut out of it, and this fact gives the beads when seen in a string a varied and rich appearance. [Pr. IX. fig. 13.]

(1) Bird pendants of stone (not shell) bored with a simple hole occur in the Cyclades in early graves. The resemblance to the Maltese is however not very great.

See (Ephemeris Archaiologiki 1898. . VIII. 16, 17 and 23.)
Of these objects of shell the buttons are the most interesting, for they have been found in several parts of the Western Mediterranean in connection with megalithic monuments or in the rock sepulchres which appear to the work of the same race. These objects (1) made of various material occur, in Italy (2) Sardinia, France, Spain, Scandinavia, England, Bohemia and Austria, and are probably in their origin a special product of the ‘dolmen’ or ‘megalithic’ people.

An interesting ethnological parallel to the birds occurs in the exactly similar objects made of a hard shelly material by the modern Ciutkei of North-East Asia. But they are not used as buttons, having only one hole and that in the tail.

OBJECTS OF NATIVE LIMESTONE.

A number of curious worked stones were found in the hypogeum. They are conical but with convex sides and the base is always concave. They are made of soft limestone roughly hewn with a sharp celt, and not smoothed over. Their height varies from 10 to 25, cm. [Pl. XIII fig. 8.]

These objects are generally described as baetyls and are thought to have stood on the altars or at least in the sanctuary as objects of worship. It is indeed probable that baetyl worship did exist in the Maltese ‘temples’, but it is unlikely that these small stones were actually baetyls. Indeed it must be noticed here that in one of the rooms of the hypogeum are two small cylindrical pits in the floor, connected with one another, each of which was found plugged by a stone exactly similar in form to those under consideration. Another pair of pits had lost the plugs.

(1) Bullettino di Paleontologia Italiana XXV. p. 304.
(2) op. cit. XVII. Tav. II. 7 and XXV. Tav. III. 3.
Of the 'mallets', made of hard stone, only one preserves the whole of its handle. This is 27 cm. in length over all. The body of the mallets is either circular or trapezoid, and all are rather flattened. The handle which is still intact is polished with use. It is possible that these implements were often used directly to hollow out the soft rock and not merely to strike a chisel of stone. [Pl. XII. fig. 7.] On the other hand they may have been used for bruising corn or some other grain.

Pl. XII. fig. 5. seems to have been intended for a stone vase and never finished. A rim has been worked round the edge but the work of hollowing out the inside is hardly begun. Its height is 89 mm.

Among the more peculiar objects of stone is one of hour-glass shape. It is of soft limestone, slightly concave above and below, and 118 mm. in height. It may have served as a stand for a vase. Note, however, that an exactly similar object, but larger, supports a table in a niche at Mnaidra. The Halsaffieni example may be a model. [Pl. XIII. fig. 3.]

Pl. XIII. fig. 7. is of hard stone and is probably a portion broken off the end of a large elliptical grindstone. It was then reused not as the lower but as the upper stone, which was held in the hand.

A number of objects, some of soft, some of hard limestone have been described as slingstones. They vary greatly in size and weight. [Pl. XII. figs. 1 to 4, 6, 8.] Most of them are elliptical with pointed ends and a more or less pronounced keel. A few of these have a hole pierced at one of the ends. Other are cylindrical with tapering ends and one has a rough attempt at sculpture on one side. [Pl. XII. fig. 1.]

These stones vary from 5 to 15 centimetres in length. The smaller examples may well have been
slingstones, while those with a hole at one end may have been fastened on a short cord and thrown by twirling. Some however of the larger specimens seem almost too heavy to have been used in a sling.

Exactly similar objects have been found in North Greece and Thessaly, especially in Mr. Wace’s excavations at Lianokladhi and Tzani, but none of these were of the larger sizes.

OBJECTS OF FINER STONES.

It is natural that the rough limestones of which Malta is formed should have appealed but seldom to the seeker after ornamental effect. Fortunately a richer and finer material lay ready to his hand in the pebbles which he picked up on the shores. It is quite probable that from this source came the fine green stones of which he was particularly fond, jadeite etc., and until the Maltese shores have been well searched for such materials we must not assume that they were imported from abroad. Even if this last is the case it is clear that it was the raw material that was imported, for we find at Halsaflieni numerous pebbles of these fine stones, in some of which the grinding has been begun and never finished.

Celts.

There is only one example. It is of grey stone, 81 mm. in length, of the cylindrical (as opposed to the flat) type and with a rather narrow curved cutting edge. [Pl. XIII. fig. 4]

Axe-shaped pendants.

[Pl. XI.] Of these there are numerous examples, and they must have been a very favourite ornament. The largest is 93 mm. in length and the smallest 10 mm. The relation of breadth to length varies con-
derably, but with a few exceptions—and those indeed the result of accident or flaw—these objects do present the form of the polished stone celts of the neolithic and bronze ages. All, however, are of the flat thin type, and have a hole pierced through near the vertex. They are all made of fine hard stones, some of the most beautiful specimens being of jadeite. Two only, and those of almost circular form, are of white stone, possibly marble. A few are bored with two holes, and some have been broken in two and the halves re-pierced. Most of them are beautifully polished.

These small objects are not uncommon in Spain and Sardinia (1), and in Sicily in the First Siculan Period e.g. at Castelluccio (2). Just as in the First and Second Siculan Periods we find small ornamental axes in metal (3) so these stone objects may also be meant for model celts. Orsi sums up the evidence with regard to these objects as found in Sicily (4). He takes them as symbolic weapons meant to protect the wearer against bewitchment. The subject has been well treated by Pigorini (5). He considers that the axe of stone played some part in the worship of the dolmen people, for it is found represented on some of the dolmens of France and elsewhere, and also in the rock-sepulcres of Petit Morin in Champagne, attributable to the same race. This view is certainly supported by the great number—over two hundred—of these model axes found at Halsaflien.

An interesting parallel is to be found in the cult of the double-axe in Crete.

(3) Mem. Ant. XIX. p. 419. fig. 11.
Animal figures.

The three objects represented in Pl. IX. fig. 10 and Pl. X. figs. 3 and 1 are of white, grey and dark green stone respectively. It would have been impossible to say what the third was meant to represent had we not the other two. In the first the presence of a tail, and a distinct though minute head with two ears (or horns?) shew that the objects are figures of quadrupeds. The thick heavy neck suggests an ox of some kind. The third example is much conventionalized. The tail and head are not marked and the suspension hole is in the neck instead of between the feet. Length of the white specimen 33 mm.

Pl. X. fig. 12. is a bird apparently sitting. Underneath are two converging holes for a thread. In the body are nine small shallow holes symmetrically placed. One on the forehead, one behind the neck, one on the throat, one on each side of the neck, two along the centre of the back and one in each side. The object of these is not clear. Perhaps they were filled with some colouring matter. They may by compared with the holes in the clay animals mentioned above.

Miscellaneous Stone Pendants.

Pl. X. figs. 7 and 14 are among the more peculiar. Fig. 14 is very accurately cut in grey stone. It consists of two small spheres side by side with a pierced loop of stone above them. It is all cut in one piece of stone. Fig. 8, is of very dark green stone finely polished.

Pl. X fig. 10 is of brown semi-transparent stone. It may possibly represent an animal's (snake's?) head. The holes forming the eyes converge at some depth and there is a suspension hole at the neck.

Pl. X. figs. 11 and 13 are like models of a modern cylindrical buoy with a suspension hole above. The
former is of blue-grey stone and the latter of a very soft grey stone (or clay?)

Other pendants consist of natural pebbles with small holes pierced through them.

**Beads & buttons.**

The finest of these is a button of dark green stone shaped like a segment of a sphere 29 mm. in diameter [Pl. X fig. 5.] In the flat surface are three collinear holes, the centre and one of the outer of which converge and form a thread-hole while the other outer hole does not connect with either. Apparently the two outer holes were bored first and then it was feared that as the angle had been badly judged they would never meet within the limits of the stone. For this reason one was abandoned and a third hole was drilled in the centre to connect with the other. The spherical surface of this object seems to be geometrically almost exact and it is hardly possible to imagine how such accuracy was obtained by hand. This button is of much the same type as the shell buttons already described.

It is difficult to know whether we should class as buttons or beads a series of small spherical objects of soft grey stone (possibly clay) in which the hole is pierced not along a diameter but quite close to the circumference [Pl. X fig. 15.]

There are three examples of ovoid beads, pierced through from end to end and considerably flattened on one side. One of these is of a fine transparent green stone [Pl. X fig. 6.]

Small beads of stone are rare, shell being the favourite material. The few that occur are cylindrical and of soft grey stone. [Pl. X fig. 9.]
OBJECTS OF BONE

Only one has been found, that shown in Pl. X fig. 6. The lower part is much thicker than the upper. Despite the superficial resemblance it probably has no relation to or connection with the fiddle-shaped idols of Troy and the Aegorean.

NATURAL OBJECTS USED AS ORNAMENTS.

These are fairly numerous. Although both sea and land-shells were found in large quantities there is no evidence that they were pierced and used as pendants. The nuts, however, of various trees were bored for this purpose. Pl. X fig. 8 is apparently a double fruit each half of which has been bored longitudinally. Several of these fruits are unknown in Malta and were no doubt picked up on the coasts.

These are six examples of the teeth of some fairly small animal bored through the fang and used as pendants. They seem by their colour and hardness to be semi-fossilized.

The vertebra of a fish had been rounded off and pierced through the centre to serve as a bead. Several teeth of a large fish of the shark type were found.

The use of fish vertebrae as beads is common in Italy and elsewhere (1). In Italy they occur in the pile-dwellings of Lake Varese, in the terramara of Castione, in the caverns of Balzi Rossi and in the hut-foundations of Remedello, in the Pulo di Molfetta, and at Coppa Navigata. They usually belong to the pike, more seldom to the dog-fish. They occur also at Gournia and Phaestos in Crete, in the second city at Hissarlik, and at El Argar in S. E. Spain.

Pl. X fig. 2 would seem to be the semi-fossilized horn or tusk of some small animal. It was bored at the thicker end which is now broken. There is a small piece of another such horn.

Pl. XIII fig. 2 is apparently the bowl of a spoon, 87 mm. in length. It is made of a shell which has been carefully trimmed of all its roughnesses. On the convex side are three parallel rows of natural round blotches. Near the narrower end are the two holes by which the handle, probably of wood, was attached.

SMALL OBJECTS OF CLAY

That shown in Pl. XIII fig. 1 looks like a mass of small fruits standing on a thick round base. It might be a form of a loaf of bread, but it is impossible to say anything definite. It is 61 mm. high, made of light pink clay. A smaller but somewhat similar object has since been found at Mnaidra.

Pl. XIII fig. 6 is hemispherical with a wide hole through it, which narrows at the upper end. It is of fine hard-baked yellow clay and looks and feels almost like stone. It is no doubt a spindle-whorl.

Pl. XIII fig. 5 is a bobbin-shaped object of slightly softer though similar clay. A wide hole runs transversely through it. This too may have been a spindle whorl, though the form is unusual.

Pl. VII figs. 1 & 5 are small pottery vases found since the appearance of Professor Tagliaferro’s paper.

T. E. P.
POLISHED STONE PENDANTS

Seven specimens of polished pendants from Hal Saflieni were taken by Professor Tagliaferro to the British Museum for examination. Five were green, some specimens being opaque, others translucent on the edges; one was brownish and translucent. The green pendants were both plain and spotted. From their densities, ranging from 2.93 to 3.06, they are judged to be Nephrite or Jade, a stone characterised by its hardness and toughness, and valued accordingly. The stone was used in a similar manner in Eneolithic Sicily, also in Asia Minor and in the lake-dwellings of Switzerland. Its origin is uncertain, but its scarcity in Europe suggests a locality outside that continent, although the stone has recently been found in the Hatz mountains.

The seventh stone is variegated, and softer than the rest, its density is only 2.65. The material is Serpentine, easier to work than Nephrite. The occurrence of serpentine is very wide, but it would very probably occur in association with the other.

FURTHER EXCAVATIONS AT HAL - SAFLIENI

Since the excavations dealt with in the First Report work has proceeded at the Hypogeum in the portion shown on the plan appended to that report as "In course of excavation". This part of the monument is not yet permanently numbered, but for working purposes is designated in accordance with the houses above. The area C 28 is apparently in the vicinity of the original entrance, and it leads into C 29 where most of the recent work has been done. The following narrative of the excavation is here appended.
Under the guidance of Professor Zammit I excavated at Hal-Saflieni, between the 17th of September 1910 and the 23rd of February 1911, working at room C 29 and its entrance towards C 28. No complete skeletons came to light, and the bones lay in confusion through the soil as in the rest of the hypogeum, except that occasionally an arm with fingers, and complete foot, and several vertebrae would be found lying with the parts in situ.

From the upright position of an isolated radius it might be judged that the filling up of the cave was of a wholesale nature, rather than that individual burials took place in it. Such an opinion would be strengthened by the fact that unrelated bones and also implements were found in the interior of skulls. The finding of 6 vertebrae in position, 5 of them without spinous processes, suggests a case of re-burial, and it is an open question how far most of the interments may not have been of this character. Animal bones were found mingled with human.

Many skulls were discovered, both adult and juvenile, but so friable, owing to dampness, as to be incapable of preservation.

Commencing six inches above the floor of the chamber a small structure of stones was discovered, and the hardness of the soil near its base suggested the existence of a very temporary floor. Ashes found near led to the suspicion of some kind of temporary fire-place, possibly for the use of the workers. Beyond the actual existence of the structure, however, the matter is very doubtful.

Many flint, chert and bone implements were found, chiefly knives or scrapers; worthy of note are a fine flint borer, and also a stone one. Several shaped oblong stones, about 9 inches in length, pointed at one end and with a sharpened straight edge at the other were found to be very effective in moving the soil, and were probably trowels.
Ornaments were numerous, especially small amulets of polished pebble or of bone, generally bored, pendants of doubtful shapes (one possibly a conventional image of a pig), small shells, and teeth, human and animal. The pendant amulets were usually in the vicinity of skulls and were occasionally broken, probably on purpose.

Two clay human images, an inch high, both squatting, were found in close proximity. The one was fairly well shaped, headless, but with a hole for the head, the arms folded across the breast, somewhat steatopygous and with the legs broken off; the other very rude and amorphous.

The sifting brought to light many beads, some minute, others from half an inch to an inch in length, nearly all made from marine shell; and several buttons of the same material.

Just near the entrance of the chamber, towards C 28, and within 2 inches of the surface, the following were found together: 37 small spiral shells and a few larger ones, the two clay images already referred to, two trowels, many teeth, rough stone amulets, some in the shape of trowels, carved and bored bones, charred wood and black pottery decorated with cross-hatching (G 19). It may perhaps be suggested that here we have a mass of funeral furniture: the remains of offerings, money, and implements for the dead person to dig himself out withal.

To my mind some of the most interesting finds were fragments of soft Malta stone, discovered at all depths in the unrelated red earth, and bearing very definite shapes, of length from 2 to 6 inches. They show no signs of working, but some may nevertheless have been used as tools for light wear; others must have been chosen for their peculiar shapes, and their likeness to ornaments or implements. They are more or less flat and fall into the following forms: shell,
pentagon, triangle, auger, borer, rude female figure, terra-cotta animal (as found at the Mnaidra), spearhead and double-axe. The two-last were found close together and are of importance if my theory concerning these stones is correct.

Knives and implements in harder stone were also found.

The pottery was mainly of the usual type, and fragmentary, except that a whole unornamented bowl of black polished ware (E 11) was found at the depth of 6 inches beneath two skulls. Its diameter is 6 ½ inches, and its depth 3 inches.

The depth of soil in the chamber C 29 varied from 1 ft. 8 in. to 2 ft. 6 inches. Towards the entrance from C 28 it gradually thinned off. On the right of the passage between the two looking towards C 29, excavation showed that the solid rock of the roof was artificially upheld by a worked stone slab of a harder kind. A fragment of this harder material was found in the pile of stones (fireplace?) above mentioned."

R. N. B.
SKULLS.

In dealing with the eleven skulls of Hal Saflieni, and the one of Hagiar Kim, it may be of interest to preface a few remarks of a general nature. The most important feature in skull classification is the proportionate length of the cranium, and this is denoted by the cephalic index (see table attached) or the ratio of breadth to length. For the longest skulls therefore the index is lowest. Broca's table is as follows:

<table>
<thead>
<tr>
<th>Index</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>75 &amp; below</td>
<td>Dolichocephalic (long-headed).</td>
</tr>
<tr>
<td>75 to 77.7</td>
<td>Sub-dolichocephalic (moderately long-headed).</td>
</tr>
<tr>
<td>77.7 to 80</td>
<td>Meso-cephalic (medium-headed)</td>
</tr>
<tr>
<td>80 to 83.3</td>
<td>Sub-brachycephalic (moderately short-headed).</td>
</tr>
<tr>
<td>83.3 &amp; over</td>
<td>Brachycephalic (short-headed).</td>
</tr>
</tbody>
</table>

The oldest skulls of Europe are dolichocephalic and there is, on the whole, a tendency for the relative length to decrease as time goes on. The oldest cranium which has any pretence to being human is that of the *Pithecanthropus erectus* found in the Pliocene formation in Java. Although this has many ape-like characters, most authorities now tend to regard it as human, and as the forerunner of the Gibraltar and the Neanderthal skulls. The oldest European skulls belong to the Pleistocene or glacial period of geology, and their presence usually denotes an interglacial epoch, that is, an interval during which the ice retreated northwards. In order of age, the skulls possessing Neanderthal characters range as follows: the Gibraltar, Heidelberg, Krapina, Spy and Neanderthal. The typical Neanderthal skull is of the Mousterian epoch, characterised by the presence of the bones of the mammoth and woolly rhinoceros, of varied tools and implements, such as scrapers and awls of a primitive character, but not so primitive as the
earlier Chellean knuckle-duster. The cephalic index of the developed Neanderthal skull ranges from 70 to 75.3. The forehead is low and retreating, the brow-ridges are prominent, the jaw massive, the chin receding—all more or less simian characteristics. These features are combined with low stature. The type has persisted in rare cases to the present day.

To the same epoch belongs, in all probability, the English Galley Hill skull, but it marks the arrival of an entirely different type. Apart from its dolichocephaly (index 69), its characteristics are modern, and the type persists, through river bed man, into the larger proportion of long-headed men of to-day. It has later continental relations in the Brünn and Combe Capelle skulls, for which, from negroid characteristics in certain cases, a southern origin might be indicated.

The Galley Hill man was also of low stature. Before he came into prominence in the scientific world the second type of quaternary man was held to be represented by the Chancelade skull of the later Magdalenian period. Chancelade features are a high, broad forehead, high orbits, high and broad cheek bones, and the same degree of dolichocephaly as that of the Neanderthal race. On the whole, however, it will be better to regard the Chancelade skull as a later example of the second quaternary race to which the Galley Hill man belongs. In the Magdalenian epoch, at the end of the glacial age, a new race of very tall men appear in Europe, the race of Cro-Magnon. The skulls have the following characteristics: extreme dolichocephaly (index 63-74.8), short, wide face, prominent cheek-bones, spread of the palate, projection of the upper incisors, and narrow pointed chin. In appearance the type has something in common with the Mongols and Esquimaux.

The Magdalenian epoch, to which these skulls belong, is the period of the reindeer, of the use of bone-
tools and flint arrow-heads, and the men of the period were skilled in graphic arts.

The Hal-Saflieni skulls belong to the Neolithic period, and are far more recent than any we have been considering, but in view of the geographical position of Malta, it is of importance to trace any possible relationships with the older specimens.

On the whole the Hal Saflieni crania resemble those of the second quaternary class, that of Galley Hill, but the resemblance appears to be greatest to the Chancelade type, especially as regards number 3 and 10 [Pls. XIV and XVI]. The general dolichocephaly is noticeable, six falling within the limits of the Chancelade type, four being longer.

Numbers 7 and 11 [Pl. XV and XVI], especially the latter, however, are peculiar for their Neanderthal characteristics, namely, the low fore-head, the ponderous browridges, and heavy muscular attachments, although the dolichocephaly is excessive for the Neanderthal type.

The features of the Cro-Magnon race, both as regards shape of skull and height of stature, do not appear to be present at Hal-Saflieni.

A far more satisfactory criterion for dealing with these skulls, however, is that fixed by Professor Sergi in “The Mediterranean Race” (Contemporary science series—Walter Scott). He throws over the cephalic index and classifies skulls according to their shapes when regarded from above. For him the long skulls and the short divide themselves into shapes as follows:

I Long Skulls
1. Ellipsoid.
2. Ovoid.
3. Pentagonoid.

II Short Skulls
1. Sphenoid (wedge-shape)
2. Spheroid.
3. Cuboid.
The skulls of Class I belong, according to Sergi, to the ancient Eurafriean or Mediterranean Race which sprang from somewhere in Africa to the south of the Sahara, and, migrating northward, crossed into Europe by way of Gibraltar, Malta and Sicily, and Egypt and the Greek islands. These people, known to history as the Iberians, Ligurians, Pelasgians, Leges and Carians, even the Hittites, were the builders of the monuments in Crete and ancient Egypt, the erectors of numerous megalithic remains in North Africa, Malta, Spain, Brittany, and the British Isles, and are associated with the long barrows; they were in possession of most of Europe and the Mediterranean basin, and had developed an advanced civilisation when the short-headed Aryans, the round-barrow men, came upon them from the East. The latter are the people whose skulls fall into class II; and so permanent a feature is the shape of the skull in human history, that the long-headed and the short can to a large extent be singled out to this day.

A comparison of the Hal-Saffieni skulls with the illustrations in Prof. Sergi's works, including the one above quoted, shows them to be of the characteristic Mediterranean race type. All of them undoubtedly fall within Class I, but sometimes a specimen is found to be on or near the border-line of the varieties, so that it is difficult to say whether a particular skull should be classed e.g. as ovoid or ellipsoid. Moreover the conclusion to be drawn from the photographs have been corrected by an actual view of the skulls themselves and the classifications consequently modified to some small extent. This is due to other features of the cranium obtruding themselves into the requisite outline in the photograph.

Always subject to authoritative correction the skulls may be described as follows with regard to "Sergian" characteristics:
No. — 1. Beloid
   2. Ellipsoid
   3. Beloid
   4. Ovoid
   5. Ellipsoid
   6. Ovoid
   7. Ellipsoid
   8. Pentagonoid
   9. Ellipsoid
  10. Beloid
  11. Ellipsoid (variety)

The Hagiar Kim skull is beloid.

As regards individual peculiarities, it is important to notice the massive nature of numbers 7, 10 and 11 [Pls. XV and XIV]; numbers 9, 10 and 11 [Pl. XVI] are characterised by ridges at the hinder part of the base indicating heavy muscular attachments, and 9 and particularly 11, are ridged along the side of the crown; the prominent brow-ridges in 7 and especially 11 have already been referred to.

The Hagiar Kim skull is characteristically negroid and presumably foreign; the excessive prominence of the jaws (prognatism) is worthy of remark.

Prof Elliot Smith in "The Ancient Egyptians" (Harper 1911) has ascribed the megalithic culture in Malta and throughout the Mediterranean basin and Europe to the influence of Egypt, which had gained her prestige through the use of copper, and supposes it to have been imported in some localities by Asians who had learnt what Egypt had to teach them. The skull characteristics of these foreigners he has been able to detect in Egypt from very early times, and refers to the appearance of foreign skulls in North Africa and Sicily. However applicable this theory may be to Italy, where certain great changes in culture seem to have been established, it is interesting to observe that the
foreign skull characteristics are totally absent from the Hal-Saflieni skulls, viz. the oblique orbit and the long, deeply indented, ramus of the jaw.

How far the influence of Egypt may have been at work apart from this foreign agency, a point on which Prof. Smith lays great stress, is another question.

R. N. B.
### Measurements of the Hal-Safliei Skulls and of one from Hagiari-Kim.

<table>
<thead>
<tr>
<th>Index number of skulls.</th>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>H. Kim</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maximum length</td>
<td>185</td>
<td>180</td>
<td>181</td>
<td>181</td>
<td>191</td>
<td>175</td>
<td>200</td>
<td>183</td>
<td>192</td>
<td>197</td>
<td>-</td>
<td>180</td>
<td></td>
</tr>
<tr>
<td>2. Antero-posterior diameter (inal);</td>
<td>183</td>
<td>173</td>
<td>165</td>
<td>152</td>
<td>174</td>
<td>159</td>
<td>-</td>
<td>165</td>
<td>178</td>
<td>184</td>
<td>-</td>
<td>165</td>
<td></td>
</tr>
<tr>
<td>3. Maximum breadth</td>
<td>139</td>
<td>134</td>
<td>132</td>
<td>136</td>
<td>131</td>
<td>134</td>
<td>132</td>
<td>132</td>
<td>135</td>
<td>133</td>
<td>-</td>
<td>140</td>
<td></td>
</tr>
<tr>
<td>4a Basal height</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>4b Auricular height</td>
<td>109</td>
<td>96</td>
<td>116</td>
<td>106</td>
<td>-</td>
<td>105</td>
<td>103</td>
<td>121</td>
<td>128</td>
<td>130</td>
<td>-</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>5. Min. frontan breadth</td>
<td>96</td>
<td>94</td>
<td>98</td>
<td>93</td>
<td>97</td>
<td>98</td>
<td>106</td>
<td>94</td>
<td>94</td>
<td>95</td>
<td>106</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>6. Max: do. do.</td>
<td>114</td>
<td>110</td>
<td>114</td>
<td>118</td>
<td>117</td>
<td>117</td>
<td>126</td>
<td>107</td>
<td>118</td>
<td>110</td>
<td>122</td>
<td>113</td>
<td></td>
</tr>
<tr>
<td>7. Max: bimastoid breadth</td>
<td>119</td>
<td>120</td>
<td>119</td>
<td>110</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>125</td>
<td>133</td>
<td>120</td>
<td>-</td>
<td>117</td>
</tr>
<tr>
<td>8. Bi-zigomatic breadth</td>
<td>114</td>
<td>121</td>
<td>125</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>9. Basi-nasal length</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>10. Basi presthionic length</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>11. Mento nasal distance</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>12. Naso-prosthion length</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>13. Nasal height</td>
<td>43</td>
<td>51</td>
<td>45</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>14. Nasal width</td>
<td>19</td>
<td>24</td>
<td>23</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>15. Interorbital width</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>16. Orbital width</td>
<td>40</td>
<td>40</td>
<td>41</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>17. Orbital height</td>
<td>31</td>
<td>37</td>
<td>31</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>18a Sup. alveolar width</td>
<td>53</td>
<td>54</td>
<td>62</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>18b Alveolar length</td>
<td>49</td>
<td>54</td>
<td>56</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>19a Palatic length</td>
<td>43</td>
<td>45</td>
<td>45</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>19b Palatic width</td>
<td>27</td>
<td>29</td>
<td>29</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>20. Orbito-alveolar height</td>
<td>36</td>
<td>42</td>
<td>44</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>21a Foramen Magnum-length</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>21b do. do. width</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>22. Occipito-frontal arc</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>23a Transverse arc</td>
<td>300</td>
<td>290</td>
<td>320</td>
<td>315</td>
<td>-</td>
<td>296</td>
<td>-</td>
<td>300</td>
<td>310</td>
<td>320</td>
<td>-</td>
<td>314</td>
<td></td>
</tr>
<tr>
<td>23b Horizontal circumference</td>
<td>517</td>
<td>500</td>
<td>500</td>
<td>515</td>
<td>520</td>
<td>500</td>
<td>507</td>
<td>530</td>
<td>540</td>
<td>-</td>
<td>-</td>
<td>517</td>
<td></td>
</tr>
<tr>
<td>24. Capacity</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Facial Index 49.1 58.7 52 - - - - - - 49.5 55.1 - -
Maxillo Alveolar index 108.1 100 110.7 - 108.1 110 100 98 - -
Cephalic do 75.1 74.4 72.9 75.1 68.5 75.5 66.0 72.1 70.3 67.5 - 77.7
Nasal do 44.2 47 51.1 - - 55 48.9 53.3 - - 58.7
Alveolar do - - - - - 90.1 93.1 99 - - 111.7
Orbital do 77.5 92.5 75.6 - 74.4 77.7 94.2 78 87.1 - 83.3
Height do - - - - - 73.2 72.9 71.0 - - 72.7

Measurements in millimetres made in accordance with the rules laid down by the International Congress for the unification of Cranometric and Cephalometric measures. (1907).