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XCAVATION OF THE SHELL-MOUND AT IDZUMI
IN THE PROVINCE OF SATSUMA

By

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ON THE SHELLS, ANIMAL BONES AND HUMAN REMAINS
FOUND IN THE SHELL-MOUND AT IDZUMI

By

Kotondo Hasebé

And

A PREHISTORIC SITE AT IBUSUKI IN THE PROVINCE OF SATSUMA
AND THE POTTERY FOUND IN IT

By

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(Résumé of the Japanese Text)



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PREFACE

In this volume of the Report we publish the results of the excavation of the Idzumi shell-mound, as well as of the research made into the prehistoric site at Ibusuki, both in the province of Satsuma. The former was the project of Professor Dr. Kotondo Hasebé of the Tôhoku Imperial University, who bore the expense of the excavation and conducted the work himself, while my assistant, Mr. Sadahiko Shimada, and I myself assisted. The archæological remains, excepting the human bones, Dr. Hasebé has generously presented to our University and permitted us their free use. We must express our sincere thanks to his kindness for this and also for his contribution to this volume, the chapters on the human bones, &c., which honours our Report immensely.

The excavation at Ibusuki was our own work in connection with the archæological researches in the Prefecture of Miyazaki carried on in 1918 and in 1919. The interest in the pottery found here has been much increased as the studies on the prehistoric sites in the island of Kiushû have improved. So I take this opportunity of publishing the result, with that of the Idzumi shell-mound in the same province of Satsuma.

Our special thanks as well as those of Dr. Hasebé are due to Mr. Isomaro Yamasaki who first made researches on both sites and helped our work in many ways. Messrs. M. Arata, R. Kuroé, and others at Idzumi, and Mr. M. Takeshita and others at Ibusuki showed us kindness at the respective sites. Our acknowledgement is also due to Professors T. Ogawa, T. Kita, and Messrs. T. Kuroda, M. Sakakibara, of our University, who gave generous help to our researches in various ways, as we mention elsewhere in the Report.

Lastly, I am permitted the expression of our gratitude to Mr. Ryohei Murayama, who made a donation to the fund for the publication of the Reports of our Archæological Institute, a fund to which we are obliged for sharing in the expense of the publication of the volumes of this Report.

KÔSAKU HAMADA,

Imperial University of Kyoto,

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Excavation of the Shell-Mound at Idzumi in the Province of Satsuma

By

SADAHIKO SHIMADA & KÔSAKU HAMADA

1. Site and Excavation

(Plates I—VI)

A small country town, Idzumi is situated on the north-western coast in the province of Satsuma, in Kiushû. The shell-mound lies on the diluvian plateau near the town, looking down upon the alluvial plain of the river Komenotsu. Though some people have noticed the shells and collected stone implements before Mr. Isomaro Yamasaki visited the place in July, 1920, it was he who ascertained its being a shell-mound of the prehistoric age and made a trial excavation.¹

We made an excavation, in this shell-mound in December, 1920, by the invitation of Mr. Yamasaki, and discovered an abundant quantity of pottery, stone implements, animal bones, &c., and a few fragments of human bones, though no complete human skeleton could be discovered. Our excavation was limited to about 300 square feet behind Mr. Usuke Onoye's house, but it seemed as if the kitchen-midden extended southward beyond the front of the house and northward to the margin of the plateau, crossing a canal which skirts the plateau end, as our trial pits sunk in various spots have shown us.

The shell stratum lies under the surface soil, about one foot thick, measuring one foot two inches in its average thickness, and then comes the yellowish earth. The human débris is chiefly contained in the shell stratum, sometimes

1. See the articles written by Mr. I. Yamasaki, in the *Kokogaku-Zasshi* (Archaeological Journal), Vol. XI, Nos. 1 & 5. (Tokyo, 1920)

in the surface soil as well as in the earth just below the shells.

2. Stone Implements and Objects made of Shells and Bones.

(Plates V & VI)

Stone implements were not rich in this site, our work bringing to light only nine celts and one chisel, with a few examples of weight stone, grindstone, round-stone and hammer-stone. We did not come across any stone arrow-heads, though there were fragments of obsidian. The celts and chisel are made of hard greenish hornfels or the like rock, the hammer-stones and the others of andesite.

There were six bone needles, one with a perforation at one end, another with incisions at the flat end resembling a hair-pin. We found also a piece of animal foot-bone with a perforation. This is undoubtedly a pendant. Two broken pieces of shell bracelets (one of a *glycimeris albolineatus*? Lisch., the other of an *arca* (*scapharca*) sp.) and a crescent-shaped shell (of a *spondylus cruentus* Lisch.), pink in colour, with two perforations at each end were discovered.

3. Pottery.

(Plates VII—XIX)

Pottery fragments were abundantly found in the shell stratum, though there were no complete or large pieces from which we could restore the entire forms of vessels. It is, however, obvious that open forms predominated, and a very few in forms like a pot or jar. One peculiarity of the pottery here can be noted on the bottoms of vessels, namely, a sort of short circular stands was frequently attached to the bottoms. The colour of the pottery is brownish black and the fabrication very rough. (Fig. 1)

The decorative patterns are geometric designs, mainly applied at the rims of vessels. Short parallel lines, vertical or slanted, and herring-bone lines are seen in most cases, while more complicated designs or combinations sometimes occur. There exist also specimens with horizontal parallel lines surrounding the rims, which are intersected by a group of short vertical lines or dots. (Pl. VII) this motif must be derived from the knot of a cord or plait. Patterns with

curved lines occur sometimes. Their formulae seem to be in system similar to that of the straight lines above described. The one must be the simplified form of the other. (Pl. XIV)

We must not overlook a few pieces of pottery with mat or cord impressions. (Pl. XVI) They differ in their material too, being made of finer clay than the others, with a polished surface of reddish tint. From the small quantity of this find, we are inclined to consider this kind of ware as not manufactured locally, but imported from some other place in the neolithic period.

Round discs in various sizes were found among the pottery fragments. They are made of potsherds and, with two exceptions, have no perforations in the centre. I believe these were the play things of the children of the builders of the shell-mound. (Pl. XVI)

4. Conclusion.

The neolithic inhabitants here at Idzumi were a people who cannot be different from those who occupied other sites in Kiushu or elsewhere in the south-western part of Japan, as Dr. Hasebé has concluded from his study of the human bones found in this site. They were not numerous and inhabited this place for a comparatively short period, judging from the thickness and distribution of the shells in the kitchen-midden.

As we have mentioned, the ceramic art of the neolithic people of this site is rough and simple in its ornamentation and has a close similarity to that of the Todoroki site in Higo¹ and of Riukiu island.² When we consider the geographical relation of these sites, we cannot help concluding that the neolithic civilization of this part of Japan was in one and the same phase, probably belonging to a period not differing in each site. I agree with Mr. Matsumura's opinion that the geometric ornamentation of the pottery in Riukyu as well as of the Idzumi shell-mound does not show a primitive stage of decoration, but on the contrary a degenerated or a simplified form of the more complicated patterns that occur on the pottery of north-eastern Japan or elsewhere. But I

1. *Report of Archaeological Research*, Vol. V. (Kyoto Imperial University, 1920)

2. A. Matsumura, *The Shell-Mounds of Ogidô in Riu-kiu* (Imperial University of Tokyo, 1920).

do not know yet when, in absolute chronology, this Idzumi people lived, and whence they came. Only we can say that they dwelt here in a period, when in some other places in Japan flourished a people, of the same race in general, who had a different ornamentation for their pottery of which the Idzumi people for some reason imported specimens to their chosen place of residence.

On the Shelles, Animal Bones and Human Remains Found in the Shell-Mound at Idzumi.

By

KOTONDO HASEBÉ

1. Introduction.

Mr. I. Yamasaki, on his second visit to the Idzumi shell-mound in August, 1920, discovered some fragments of human bones and horse teeth and he very generously made me a gift of these human remains. They consist of the following four pieces :

1. Fragment of a calvaria (seems to have belonged to an adult person)
2. Fragment of the central part of a squama occipitalis (probably belongs to the same individual with the above skull)
3. Os temporale of the left side. (probably belongs to an adult male, not the same person with the above pieces)
4. Lower jaw bone (belongs to a child)

Thus these four fragments seem to have belonged to three different individuals. We carried on an exhaustive excavation at the site in December of 1920, with the expectation of finding complete skeletons, but the find was not rich, resulting in only a few scattered limb bones, with a quantity of animal bones, &c. However poor the material obtained, I am glad that we have added certain knowledge of the neolithic people who dwelt in this part of Japan, and also we have ascertained the fact of the existence of the horse in our stone age.

2. Shells.

Thirty-eight species of shells were collected during our excavation.¹ I have

1. We have to add two more species which were found among the shell ornaments. See page 2.

given a complete list of them elsewhere in the Japanese text,¹ which I owe to Dr. Ichirô Hayasaki of the Tôhoku Imperial University.

Among these shell-fishes *meretrix meretrix*, *ostrea*, *paphia philippinarum*, *cyclina chinensis*, *potamides multiformis* and *polinices ampla* are abundant. From these shells we can assume that the climate in the neolithic period in Japan was not much colder than at present.

3. Animal Bones.

In the shell strata animal bones were found abundantly. Amongst them the wild boar furnish the most part, and the deer comes next. Undoubtedly these animals were the chief game, and with fish and shell-fish formed a good part of the provender of the primitive people. There was also a small quantity of the remains of dogs, badgers, wolves, whales and horses. Dogs, it would seem, were domesticated by the people mainly for the supply of meat as in Danemark. Horse-teeth were collected in the upper level of the shells, consisting of 6 incisors and 2 molars. The teeth of the animal have hitherto been discovered in the neolithic sites, at Kô, Todoroki Atsuta, &c., but we lacked stratigraphical evidences. But here at Idzumi its occurrence in an undisturbed shell-stratum was verified. Some historians insist that horses did not exist in this country, until they were introduced from the continent in the historic age, believing the statement of a Chinese annal "Wei-chih" 魏志.² But who can deny this actual existence of the remains of that animal in the Shell-mound?

4. Human Bones.

Seven fragments, all of limb bones, upper and lower, were discovered.

1. Fragment of the left scapula. (found in I Division)

Partly broken, the distance between the posterior margin of the cavitus glenoidalis and the spina scapulae is great, as we find frequently among the

1. See page 16-18 in the Japanese Text.

2. In the chapter on the Japanese or Wo-Jên 倭人, in the "Wei-chih", "In their land there are no oxen, horse, tiger, leopard, sheep and magpie" 其地無牛馬虎豹羊鶻

stone age people, but not in the present Japanese.¹

2. Shaft of the left humerus. (found in VII Division)
Both ends broken, and scratched lines are visible everywhere on the surface. These, however, were made in the shell heap quite accidentally, and I cannot agree with some archaeologists who consider the stone age people in Japan had the cannibalistic fashion, which is deduced from such scratchings, &c. The shaft is rather flat and seems to have belonged to a female individual.
3. Shaft of the left femur, (found in VII Division)
Belongs probably to a male person. The "pilastered" form is prominent and the bending is strong. No third trochanter.
4. Fragment of the shaft of the right femur.
The "pilastered" form is tolerably prominent, perhaps belongs to a female individual.
5. Shaft of the right tibia. (found in II Division)
The platycnemic character is remarkable, but the linea poplitea weak, belongs perhaps to a male person.
6. Fragment of the os naviculare of the left foot. (found in I Division)
Large in size, belonged to a male individual.
7. Fragment of the fifth ossa metatarsalia of the right foot. (found in III Division)
Seems to have belonged to a female person.

As I have mentioned, the four pieces (1, 3, 5 & 6) seem to have belonged to male, while the three (2, 4 & 7) to female individuals.

4. Comparison with the Bones found in Other Sites.

1. *Scapula*: The scapula found at Idzumi with its shallow cavitus glenoidalis, thick border, a great distance between the cavitus glen. and the acromion, &c., has the same characteristics as those found in other neolithic sites in Japan.

1. See my own essay, "*Ein Beitrag zum Rassenunterschied der Scapula, mit Rücksicht auf die Scapula der Steinzeitmenschen Japans*", (Tōhoku Imperial University, 1912)

2. *Humerus*: The Idzumi humerus is not much different from that of the present Japanese, with its slender, but not flat shaft, showing 75.5 in its cross section index, but there are sometimes less flat humerus among the neolithic people. The comparison of the cross section indices of those found in the various sites is shown in the Table. (Table I)

3. *Femur*: One of the Idzumi femurs is very strong, showing a remarkable "pilastered" form, and is flat at the middle point. But the other does not indicate such a feature. The former is to be said to represent prominently the characteristics of the femur of the neolithic people. The comparison of the index-pilastericus with those found western Japan is shown in the Table. (Table II)

In the table we can notice that the Kô femurs show large indices, but the other femurs do not differ much from each other. The femurs measured by Prof. Koganei shows comparatively large indices, approaching the Kô ones. As a rule the male exceeds the female in the index number.

The platymeric character is generally not remarkable in those who have large indices of the middle section, but there are some exceptions. One of the femurs of Idzumi, notwithstanding its having a large index-pilastericus, the index-platymericus is in a middle number. See the comparison table. (Table III)

The platymeric index is generally smaller in the female than the male. The Kô femurs show usually large numbers in the index, while the Todoroki ones smaller than the Kô and the Tsukumo examples. The Ainu femurs, after Prof. Koganei, have the flatness at the upper part of the shaft, in the direction of the front and behind, so they are different from the neolithic femurs.

3. *Tibia*: The Idzumi tibia shows the platycnemic feature, like the other neolithic tibiae, though its anterior border being rather sharp, showing somewhat an S form in the bending of the upper part, and its posterior ridge not being prominent, it approaches the present Japanese. The comparison of the platycnemic indices is shown in the Table. (Table I) The male tibia is generally more platycnemic than the female. The tibia of the Ainu is flatter than that of the neolithic man. The Kô tibiae are not flatter than that of the Ainu, while the Todoroki one is not flat at all.

5. Conclusion.

The human bones found at Idzumi, as we have seen, have the characteristic features common with those of the neolithic men in the other sites of Japan, namely, the great distance between the civitus glen. and the acromion, the flatness of the femur in the middle of the shaft and its "pilastered" form &c. If we compare the Idzumi bones to those found at Todoroki in Higo, not far from Idzumi, and also to those discovered in the various sites in Bitchû, or that of Kô, we cannot find much divergency between them.

As for the distinction between the stone age men and the Ainu, Prof. Koganei's remarks are confirmed, that is the flatness of the femur and of the humerus in the middle of the shafts is more marked in the Ainu than in the neolithic men. And the flatness of the femur at the upper part of the shafts in the direction of the front and behind is seen in the Ainu, but very seldom in the stone age people. The platycnemia is not so remarkable in the neolithic men as in the case of the Ainu, which has been seen in the bones found in the west of Kô, as well as in the bones measured by Prof. Koganei.

As for the distinction between the stone age men and the present Japanese, the flatness of the limb bones is more prominent in the former than in the latter, as Prof. Koganei has also stated.

In conclusion, the neolithic bones represent more prominently the characteristics in which the Ainu are distinguished from the Japanese. The platymeric and platycnemic tendency, on the contrary, is stronger in the Ainu than in the neolithic men. So the stone age people in the west of Kô, or in general, seem not properly to be considered to be the ancestors of the present Ainu.

The neolithic skulls found in western Japan have brachycephalic or mesocephalic forms, with small basal length of calvaria and small facial length as well as short and broad palates. These features are foreign to the Ainu, while the low skull and broad face is common or more remarkable in the neolithic man. So if we consider these points with that of the limb bones, we may conclude that the stone age men must have been a race intermediate between the Ainu and a certain race unknown. Though my study of the Todoroki skulls is not yet completed, they do not seem to indicate much

ference from the other skulls found in western Japan. Notwithstanding that cephalic index of the neolithic men measured by Prof. Koganei, from the skulls mainly from the north-eastern sites, show an index somewhat approaching that of the Ainu, it is clear that the possibility of considering neolithic people the ancestors of the Ainu has been much restricted.

If it is true that the neolithic people in western Japan was an intermediate one between the Ainu and a certain race unknown, the contact of these two might have taken place in a period before the neolithic time with which we are just now dealing. This intermediate people, which was already an accomplished mixture of races, in our opinion, must have been the whole or a part of the neolithic population in Japan, to which the Idzumi people also belonged.

A Prehistoric Site at Ibusuki in the Province of Satsuma and the Pottery found in it.

By

KÔSAKU HAMADA.

The Site.

The southern end of Satsuma peninsula is the district of volcanoes and famous for the hot springs gushing out at various places. Mt. Kaimon-dake, an active volcano, with its beautiful conical form crowns the entrance of the Bay of Kagoshima, like Mt. Vesuvius along the Bay of Naples, and the district of Ibusuki resembles in its geological features the Phlegraeian field in Italy. Very interesting it is to find a prehistoric site in this district, containing two different kinds of pottery in two different levels of a volcanic ash bed produced by the eruptions of volcanoes. (Pl. XX.)

The site was first reported us by Dr. Teikichi Kita, and examined by Mr. Isomaro Yamasaki in 1917¹. I had the opportunity to visit the site twice, first in January, 1917 and in March, 1918, this time accompanied by Dr. Kotondo Hasebé, and made some small excavations which yielded a quantity of pottery.

2. The Excavated Spots.

(Plates XX—XXIV)

The site where we discovered the pottery, lies half a mile west of Surigahama hot spring, along a valley cut by a stream which runs on the volcanic ash bed. The stream is entirely dry except after a heavy rain, and the valley is as narrow as 20 to 50 feet in width. The height of the valley measures

¹ See the *Kôkugaku-Zasshi* (Archaeological Journal), Vol. VIII, No. 7, (Tokyo, 1917)

some 15 feet at B spot where the width is at its maximum. The entire thickness of this 15 feet bed consists of volcanic deposits. Under the surface soil, about two feet thick of volcanic ash without any ancient remains, comes a stratum of mud-lava, of about one foot in thickness also containing no human débris. Next follows a very thick layer of volcanic ash, about eleven feet. In this ash bed are contained the pottery fragments in the different levels.

We can assume that the uppermost layer of ash was the deposit of the most recent eruption of the volcano perhaps of the Kaimon-dake, which is mentioned in our historical annal "Sandai-jitsuroku" in July of the 16th year of Jōkwan (874 A.D.), while the mud-lava as well as the thick ash bed below, were the deposits of an extinct volcano whose crater is now known as the Unagi-ike pond, situated a mile west of this site.

Just under the stratum of mud-lava we noticed remains of a few tree leaves and shells in the sandy ashes, and then a quantity of pottery piled one upon another, mostly belonging to the reddish-brown ware called "Yayoishiki," mingled with a few fragments of grey-coloured hard pottery named "Iwaibe." The thickness of the layer in which these remains are contained is nearly three feet. A pitted stone was also found with them. No pottery was discovered below this, until some fragments appeared again in a level about eleven feet from the surface. They differ from that of the upper level, being entirely neolithic in its nature with curved line patterns.

Although at B spot this kind of neolithic pottery was not much found, we unearthed it abundantly at A and C points, in a layer corresponding to the deeper one at B, where we came across no upper pottery.

At E spot the upper pottery was in company with a stone axe in a level about four feet from the surface. A heap of shells was noticed at G spot under the mud-lava stratum, but with no human débris.

Thus, it is quite evident that two different kinds of pottery are contained in the different levels of the volcanic ash bed, namely the so-called "Yayoishiki" pottery in the upper, and the neolithic ware in the lower level, as Mr. Yamasaki has already described.

3. Pottery found in the Upper Level.

(Plates XXV—XXXI)

As we have mentioned a few fragments of the grey ware called "Iwaibe" were associated with the reddish brown pottery. This Iwaibe ware is quite common in its nature with those found everywhere in Japan from the dolmens constructed by our ancestors. (Pl. XXIX, 2).

The "Yayoishiki" pottery in reddish-brown came out abundantly at B spot, seemingly deposited by the people with some particular intention. It has the same features with those seen at Kiyotake in Hiuga and Atsuta in Owari, &c. The predominant forms of the vessels are vases with open mouths, cups with high stands and jars, while there are seen a few exceptional forms, such as stands for unstable vases, &c. (Fig. 3). They are generally manufactured of rough clay, mixed with a quantity of sand. But the majority of the cups with stands are made of a finer clay and they are coloured with a red pigment (iron oxide).

The ornamentation is usually scanty. A narrow band often surrounds the shoulder of a vase. In many cases an odd treatment is seen that the band is disconnected at a point, as if a cord which had surrounded the vase had become unfastened or loosed, (Pl. XXVII, 9, 11, 22, 21 & 23) We have not yet observed such a curious design of a band anywhere else than at this site. Flat bands also occur on the bellies of vases, on which geometric patterns are incised. (Pl. XXVIII) We find similar geometric ornaments on the pottery found in Ôsumi, on the opposite coast to Ibusuki. (Fig. 5).

4. Pottery found in the Lower Level.

(Plates XXXII—XXXV)

The pottery in the lower level is also red-coloured in appearance. But it might have been in a blackish-brown colour like the neolithic ware in general, which has been turned into pink red while they were buried in hot volcanic ashes, as we saw on that discovered under the lava stratum in the island of Ôshima¹.

1. See Dr. R. Torii's article in the *Anthropological Journal*, Vol. XVII, No. 194. (Tokyo, 1902).

Rims of the vessels are sometimes ornamented with incised lines, sometimes project into elaborated forms. Patterns consist of curved lines and are applied chiefly at the rims, on the outsides as well as on the inside in most cases. This frequency of the ornament on the inside of the mouth is to be considered one of the characteristics of the Ibusuki ware. The general character of the decoration does not differ from that on the neolithic pottery found in north-eastern Japan, and its nearest resemblance we recognize on the pottery discovered at Aya in Hiuga, neighbouring province of Satsuma. (Fig. 4) The mat or cord pattern is seldom met with, having been seen only on a few fragments.

5. Stone Implements, Shells &c.

Stone implements at Ibusuki were very few. We collected two chipped axes, one at B, the other at E points, in the upper level. Some pitted stones were picked up near the excavated spots. No polished celts or arrow-heads have yet been obtained in this site. (Pl. XXXI.)

Shells were noticed at B spot as well as at G, both under the mud-lava stratum. Though they were in a large quantity at G, no other human debris has been discovered. Mr. T. Kuroda has recognized fifteen different species of shells, and a list of them is given in the Japanese text¹.

The animal bones which occurred at B spot with the pottery seem of wild boar and deer.

6. Conclusion.

The site of Ibusuki is one of the most interesting prehistoric sites in this country, buried in the volcanic deposits and containing two different kinds of pottery at two different levels. It is truly a prehistoric Pompeii or Santorin in this country, with only one other example in the island of Ôshima. In the latter site the neolithic residence was buried under a lava stratum and it is situated in a cliff side by the sea. Here at Ibusuki the neolithic station lies in a valley distant from the sea and has no attractive scenery as at Ôshima. But this is

1. See Page 43-44 in the Japanese Text.

compensated for by the great importance of the find of two kinds of pottery in different levels.

The thick volcanic ash beds over ten feet under which the lower pottery occurred, seem not deposited in a long duration of time, but by a short period of eruption or eruptions of the volcano with the crater of Unagi-ike. We do not know when this tragic event took place in this district and the peaceful life of a prehistoric people suddenly came to an end. But the warm beautiful country was not long deserted by mankind. The very spot where the former inhabitants perished was, after an interval of time, occupied by another people who came from the north and the place flourished again. These later residents were the people who made the upper pottery the so-called "Yayoishiki." They were also overwhelmed by an eruption of a volcano and their remains have been covered by the mud flow and an another ash stratum.

Who were then the first inhabitants and the later comers? Some think that the first was the ancestor of the Ainu and the second another people, called by the name "Hayato," differing from the Japanese themselves. But how improbable is it to think such a sudden change of races possible in a comparatively short period? The first, in my opinion, was a people who had an "Ainoid" character in some degree, being already a hybrid race, and they became the basal element of the present Japanese. And the second was also in the main the same race as the first, though perhaps a little changed by mixture of some other element or elements, and came down here with a more developed or a modified civilization. This is, I think, a more probable interpretation than to attribute this change of civilization, represented by the pottery, to a sudden change of races, with which some historians are accustomed to interpret cultural changes.