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REPORT UPON ARCHAEOLOGICAL RESEARCH IN
THE DEPARTMENT OF LITERATURE. VOL. XIV

MEGALITHIC TOMB ISHIBUTAI AT SHIMANOSHO IN THE PROVINCE OF YAMATO

BY

KOSAKU HAMADA,

President of Kyoto Imperial University,
Formerly Professor of Archaeology

With

METHODS OF TRANSPORTATION AND CONSTRUCTION OF MEGALITHS OF THE ISHIBUTAI

BY

ITSUO TAKAHASHI,

Professor of Civil Engineering

And

A CORPUS OF IMPORTANT MEGALITHIC STONE-CHAMBERS OF ANCIENT TOMBS IN JAPAN;
A CORPUS OF SQUARE-SHAPED ANCIENT BURIAL-MOUNDS IN JAPAN

BY

SUYEJI UMEHARA,

Assistant Professor of Archaeology

THE KYOTO IMPERIAL UNIVERSITY

1937

MEGALITHIC TOMB ISHIBUTAI AT SHIMANOSHO IN THE PROVINCE OF YAMATO

METHODS OF THE TRANSPORTATION OF MEGALITHS OF THE ISHIBUTAI AND THEIR CONSTRUCTION. (Japanese text only)

A CORPUS OF IMPORTANT MEGALITHIC STONE-CHAMBERS OF ANCIENT TOMBS IN JAPAN & A CORPUS OF SQUARE-SHAPED ANCIENT BURIAL-MOUNDS IN JAPAN. (Japanese text only)

PLATES

A CORPUS OF IMPORTANT MEGALILHIC STONE-CHAMBERS OF ANCIENT TOMBS IN JAPAN (5 plates).
SOME OF IMPORTANT MEGALITHIC STONE-CHAMBERS, DO. (2 plates).
A CORPUS OF SQUARE-SHAPED ANCIENT BURIAL MOUNDS IN JAPAN (1 double-plate).

ILLUSTRATIONS

TEXT ILLUSTRATIONS OF PROFESSOR TAKAHASHI'S ARTICLE

MEGALITHIC TOMB ISHIBUTAI AT SHIMANOSHÔ IN THE PROVINCE OF YAMATO

I. INTRODUCTION

1. **The Ishibutai before Excavations.** Those who make pilgrimage to temple after temple in southern Yamato, proceeding from Okadera to Tônominé will be surprised to see an immense stone heap grouped up in a ricefield near Shimanoshô 島の庄 (Fig. 1), so big that a dozen people could sit upon the stones to have a picnic or a luncheon party. This is in fact the megalithic tomb "Ishibutai" 石舞臺 ("Stone stage") as it is called by the villagers (Fig. 2). The stones consist of a chamber, until recently half buried inside, which was originally covered by a mound which has now completely disappeared, leaving only the bared stone-chamber, but revealing its grandeur more in this state, as a giant looks more gigantic when he is nude. When late Professor Elliot Smith visited Japan in 1934 Professor Kiyono and I accompanied him to this Ishibutai and (Fig. 3) he was quite astonished that this kind of megalithic tomb had survived in Japan down to historic times.

2. **Clearing and Excavations of the Tomb.** Though many archaeologists had thought it might be most effective to clear up the whole stone-chamber to study the true nature of the tomb, nobody had been eager to take up the plan of excavating such an already plundered tomb, where there was no hope of obtaining rich remains, notwithstanding the considerable expense involved, until in 1934 I myself proposed the plan to the Nara Prefectural Government to carry out the work jointly with our Kyoto Imperial University. Fortunately we were also given a fund by the Society of the Promotion of Scientific Researches of Japan and began the clearing of the chamber in November, 1934 (Fig. 4), helped by Mr. Suyenaga and others. This was accomplished in a month's work and we then made trial excavations outside the chamber to know the nature of the original mound, etc. Then we came across, quite unexpectedly, a part of the boulder-

walled square mound on the East of the chamber. So we resumed the work again in 1935 from April to June and traced all the stragetic points of the square mound. At last there was revealed before us a square-shaped tomb, surrounded with dry moats and outer banks, their sides all protected with boulder-walls.

II. CONSTRUCTION OF THE INTERIOR OF THE TOMB

1. **Dromos of the Stone-chamber.** We began first to clear up the dromos which extended South of the chamber as usual and was buried entirely under the present level. Almost all roof stones of the dromos were lost, except one or two fallen down upon the floor. It is supposed that these stones, perhaps four or five in all, were not very large in size compared to those of the chamber. The stones of the side walls also are not very big, four or five in each wall, measuring total length of the dromos 38 feet and 8 feet wide at the Southern end, while one foot less at the North end. The height is about 6 feet.

2. **Stone-chamber.** Rectangular in plan, 25 feet long and 11 feet wide. The height of the interior of the chamber measured, after complete clearing, 15 and a half feet. The bed of the chamber is a little elevated with small stone blocks. The side-walls are constructed with huge stones, with a clever device (in principle rather like a flying buttress) to relieve the heavy weight of the roof-stones from the walls. The stone of the South wall, upon the exit of the dromos is very big, but the biggest of all are the two roof-stones. The Northern block is nearly 16 and a half feet long and wide, and 6 feet thick, while the Southern one is 12 and a half feet long and wide, and 8 feet thick, estimated each at about 100 English tons[1]. The stones used in this tomb are all hornblende granite.

(1) Professor Takahashi's calculation of the size and weight of the stones of the Ishibutai is as follows:

Roof-stones	Maximum measurements			Cubic volume (m)	Weight (tons)
	Length (m)	Width (m)	Thickness (m)		
North stone	5.06	4.32	1.93	24.00	63 84
South stone	5.42	3.79	2.70	28.00	77.04

W. Gowland mentioned that the largest stone he saw among the Japanese dolmens was one at Myôhôji-yama in Yamato, roughly estimated 80 tons. (Gowland, *The Dolmens and Burial-mounds in Japan*, 1897) Our estimation of the stones of Ishibutai is calculated after an exact model made in scale $\frac{1}{50}$.

3. **Drainage.** Some sort of drainage system is necessary in a tomb-chamber to keep water from soaking in. The dromos and chamber of this tomb are planned for this purpose according to the natural configuration of the ground, sloping down about 2 or 3 degrees from North to South (Fig. 6). Moreover, a drainage system is provided in the chamber, surrounding the floor bed and an underground passage runs through the middle line of the bed which is continued all through the dromos openly until South end (Fig. 7). Such facilities we notice often in rock-cut tombs elsewhere (Fig. 8), but here for the first time so clearly in such a stone-chamber.

III. CONSTRUCTION OF THE EXTERIOR OF THE TOMB

1. **Lower Square Base of the Tomb-mound.** As the tomb-mound has totally disappeared it seemed that the restoration of the shape of the mound is helpeless. We made, however, many trial pits and trenches around the stone-chamber. Then at last we met quite unexpectedly, at the East side, a part of the boulder-walled base of the mound (Fig. 10). At first we did not know whether this was square-shaped or round, until later in the next season, this was evidenced by the excavations and calculations. Thus the South-East and North-East as well as the North-West corners were revealed at exactly the points we estimated. This is really the lower base line of a square-shaped tomb-mound, 170 feet on each side, all protected with boulder-walls.

2. **Dry-moats and Outer-banks.** Our excavations showed further that there were also moats, 26 feet wide, and outer-banks, 23 feet wide, all along the square mound. The level of the moats is different on each side, so they must have been dry. All the sides of the moats and banks are also walled with boulder-stones.

3. **Upper Part of the Tomb-mound.** A quantity of boulder stones were found at various places around the chamber, indicating a somewhat round shape for the upper part of the mound. But they were rather irregular and insufficient to prove it. Was it (A) a simple round or, (B) a double-terraced topped, or (C) a simple round mound upon a double-terraced square base, or also (D) a three

terraced square mound? Of these four possible forms we are rather inclined to think that (A) or (C) are more acceptable than the others. (Fig. 11).

IV. RELICS DISCOVERED DURING EXCAVATIONS

1. **Relics Found Inside the Dromos and Chamber.** Betraying all our expectations no stone sarcophagus was unearthed, except a small fragment of tuffa which might have been a broken piece of it. Fragments of pottery were abundant, both brown-coloured *haji* ware 土師器 and grey-coloured hardware *iwaibe* 祝部土器, in the chamber as well as in the dromos, more especially in groups near the rear wall of the former, and at the entrance of the latter. Besides these an iron arrow-head and a few later bronze coins occurred.

2. **Remains Found Outside the Chamber and Dromos.** Similar sorts of pottery fragments were found elsewhere outside the chamber and dromos, especially in groups at the North-West outer-banks and at the North-East dry-moats. A fragment of tuffa with some cuttings was found at the North-West of the bank[1]. Near the same place a gilt bronze buckle, and near the South-East moat two gilt bronze fittings of a belt were discovered.

3. **Some Noteworthy Remains.** Among the *haji* ware there are many big pan-shaped vases (the largest 1 and a half feet in diameter and 3 inches in depth) with a short crooked handle on each side. This type of vessel is rather uncommon. Then come many bowls with stands, pots, trays or shallow bowls and a quantity of horn-shaped detached handles. Among grey *iwaibe* pottery can be noticed large pots (the largest measures nearly 2 and a half feet in diameter), a big kettle with raised ridges (very interesting example), bowls with stands, two small bottles of a form similar to those found at an ancient temple site near Ôtsu (Fig. 13). Three small bronze objects seem to belong to the ages, Nara to Heian (7th–9th Cent. A.D.). The coins are one Yüan-fêng 元豐, one Yüan-yu 元祐 of Sung, and two Yung-lo 永樂 of Ming dynasty of China, and one Kanyei 寬永 of our Tokugawa period.

4 **Dating of the Remains.** In a tomb like the Ishibutai, early opened and plundered, we must expect that almost all the valuables were stolen, and at the

(1) This more probably belonged to the coffin of a small tomb to the North-West of the Ishibutai, which will be described in the next chapter.

same time some later objects found their way in. Certainly those later Chinese and Japanese coins are eloquent testimonies of it. Moreover, small pottery bottles similar to the specimens found near Ôtsu fall under the same category. Most probably the Ishibutai tomb was opened and plundered before the 9th century, and then poor folks might have found here shelter, or some Buddhistic images or the like enshrined in the chamber as we see elsewhere. Unfortunately, however, we could not get any exact stratigraphical data and so discriminate each object to be dated. Only from a comparison of the objects with those found at ancient Nara palace sites, etc., can we assume that both the brown-coloured *haji* ware and the grey-coloured *iwaibe* pottery belonged to the original tomb furniture, or at least to a little later age when offerings were made by the relatives of the buried[1].

V. SMALL TOMB AT THE NORTH-WEST OF THE ISHIBUTAI

There was a story current in the locality that some half century ago a stone coffin was unearthed in the vicinity of the Ishibutai. We tried to ascertain the place and succeeded through the directions of oldtimers of the village, in locating it at a spot about 55 feet North-West of Ishibutai. The mound is entirely lost, perhaps it was a round-shaped one, and upper parts of the stone-chamber and coffin have also disappeared. The chamber measures about 11 feet long and 6 and a half feet wide. The coffin is of tuffa and no relics, except one *Iwaibe* vase, were left. Mr. Suyenaga thinks that this tomb may have been "an accompanying tomb or *baichô*" 陪塚 to the Ishibutai, but I myself cannot accept this theory, for the direction of the chamber differs in each tomb, this one facing to the South-West, while the Ishibutai faces roughly due South. So this tomb may have belonged to a little earlier date than the Ishibutai, and may have escaped destruction by reason of some possible relationship between the buried persons to each other.

VI. RECAPITULATIONS AND STUDIES

1. **The Ishibutai as it is Restored.** What we have learned from excavations of the Ishibutai may be summed up here as follows:—the Ishibutai is a megalithic corridor-tomb originally covered with a tumulus, and constructed upon an artificially

(1) Complete tables of the remains are given in the Japan text.

dressed platform on a slope of a hill. The chamber, rectangular in form, has a long dromos, the whole being built of huge granite blocks. Two of the roofing stones are the largest of all, each estimated at nearly 100 tons. The South end of the dromos must have been hidden in the lowest terrace, but the drainage system is complete in the chamber. No sarcophagus nor valuable furniture were left except pottery fragments, etc., since they were certainly plundered and destroyed at an early time. The entirely lost mound had a square form, though the shape of the upper part of the mound is not exactly restored. Along the square base of the mound outside, dry-moats and outer-banks were thrown around their sides, all being protected with boulder walls.—Thus now a tremendous tumulus with square base, containing a megalithic stone-chamber inside, surrounded by moats and banks is impressively restored before our eyes. Nearest in shape to our Ishibutai can be considered the Imperial tombs of Yômei 用明 (-581 A.D.), of Tenchi 天智 (-671 A.D.), etc. They are all square mounds surrounded with dry-moats, but we do not know whether there are boulder-walls or not.

2. **Constructive Methods of the Ishibutai.** Concerning the methods[1] of megalithic construction in Europe, studies have been made by Choisy, Gowland, Peet, Stone and others, and by T. Kida, C. Saito and others in Japan[2]. Being much interested in the constructive methods of the Ishibutai, I asked Mr. I. Takahashi, professor of engineering in our University, to kindly contribute his observations and studies to us, which I have the pleasure to publish here at the end of this volume[3]. The methods of transportation and erection of megaliths, however, have not changed or developed much since very early times, everywhere in the East and West. So there is ethnographically much to be learned from them. The granite blocks seem to have been found at a place called Môkon-no-mori, about two miles East of the Ishibutai. Fortunately the nature of the topography is slightly downhill from there which must have saved much labour, but naturally they had to build a new road for carrying stones. Troops of people some

(1) A. Choisy, *Histoire d'architecture*, Tom. I; *L'art de batir chez les Egyptiens*, 1904; W. Gowland, *Recent Excavations at Stonehenge*, 1902; H. Stone, *The Stones of Stonehenge*, 1924; etc.

(2) Dr. Kida, On the transportation of big stones (in the *Dokushi-Hyakuwa*); C. Saito, Methods of the Transportation of big stones in the early modern times (the *Shirin*, Vol. XVIII, No. 2)

(3) I regret it is only in Japanese text, but chief arguments are implied in my text.

hundreds in number, must have drawn the heavy stones on *shura* 修羅 or wooden sledges, helped by rollers and levers, etc. A still more difficult task it must have been to raise the huge roof-stones over the side blocks already erected. They must have been carried on inclines newly made for that purpose, to the top of the structure. Ropes perhaps were drawn not only by human power, but with bulls or horses, and *rokuro* 轆轤 or capstan and pulleys also were used. Then the inside of the chamber was cleared and the mound raised. Though we have a good many ancient burial-tombs much greater in size, which naturally required tremendous labour, a megalithic structure like the Ishibutai, would have been a very hard task. Very roughly estimating, to build the chamber of the Ishibutai must have required three or four months and to complete the whole tomb about one year employing daily some three or four hundred people.

3. **Dating of the Ishibutai.** As it is impossible to date the Ishibutai from its tomb furniture, so exiguous and so mixed, there is only one way left for us to suggest its date, namely the comparative study of the stone-chamber and the mound. Current theories of archaeologists are that at first no stone-chambers existed, only stone sarcophagi buried in a trenches upon the mound; then the mode of making lateral stone-chamber was brought into our country through Korea, and the custom continued until the middle of the 7th century, when the Emperor Kôtoku 孝德 prohibited the building of big stone-chambers in tombs[1] If we accept the above-mentioned theories we may conclude that the Ishibutai belonged to either one of two centuries, i.e. the 6th or 7th. Then what can be told of the burial-mounds? After a long period of round mounds, there came the period of the double-mounds called *Zempô-kôen* 前方後圓 ("square-front and round back") which prevailed until the end of the 6th century. Now then to what period can we ascribe the date of the Ishibutai itself? It seems most probable to date it in the half century, from the latter part of the 6th to the middle of the 7th. And it was in fact the period when Sino-Korean arts were introduced here and Buddistic temples, like Shitennô-ji 四天王寺 and Hôryû-ji 法隆寺 temples were built which presupposes that new effective methods of

(1) History of the develoment of dolmens and corridor-tombs can be found in Gordon Munro, *Prehistoric Japan*, Gowland, *The Dolmens and Burial-mounds in Japan*, and in many books and articles of Japanese scholars, such as like Drs. Kida, Takahashi, Umemura, etc. See the notes in the Japanese text.

construction, such as *shura* or sledge, *rokuro* or capstan, etc., came then in use. As a rule the monumentality of a tomb was usually displayed in early times with the mass or quantity, while in later times chiefly with the refinement and quality. So in Europe and elsewhere huge megalithic monuments flourished in the neolithic and bronze ages, but gradually diminished their gigantic features in later times. The fact, rather contrary to this, of the advent of megalithic constructions, like the Ishibutai, in a later historic period, I believe is chiefly due to the introduction of developed methods of construction[1].

4. **Who was Buried in the Ishibutai?** It is usually in Japan, and perhaps everywhere in the world, most difficult to know the name of the man buried in an ancient tomb, except in some particular cases, such as Imperial tombs, etc. The Ishibutai however, by certain scholars like S. Tanikawa 谷川士清 Dr. Kida 喜田貞吉[2] has been attributed to the tomb of Soga-no-Umako 蘇我馬子, son of Inamé, one of the most influential persons in the 7th century. In the *Nihonshoki* 日本書紀 (Vol. 22), an authorised history compiled in the 8th century, it is mentioned that Umako built his palace-like house and garden at Asuka 飛鳥 and people called him the "Minister of Shima" (Shima-no-Otodo 島の大臣), because in his garden was an islet or *shima* 島 in the pond. He died in 626 A.D. and was buried in the "Tomb of Momohara" 桃原墓. Now most historians believe that the place where his house stood was Shimanoshô—the very village where the Ishibutai also stands. The place Momohara, however, varies according to different opinions, some, the above-mentioned, believe it is also at Asuka and the Ishibutai itself is in fact the Tomb of Momohara, while others think Momohara is in the Province of Kawachi 河內, near to the tomb of Prince Shôtoku 聖德太子. Though I incline rather to the former opinion, it is in fact impossible to define it archaeologically as well as historically. It can be said, however, that the form and style of the Ishibutai accords exactly with the burial system prevailing in the time of Umako. And it is our duty as archaeologists not to ascribe a tomb to

(1) In Japan even in the 16th century quite megalithic constructions survive. We see wonderful megalithic walls at the castle of Osaka and Hôkô-ji temple in Kyôto. They were built by the famous Hideyoshi Toyotomi 豐臣秀吉 or Taikô 太閤 who liked all things grandure and magnificence. (Figs. 19, 20.)

(2) Tanikawa Shisei, *Nihonshoki-tsûshô* 日本書紀通證, Vol. 27; Dr. T. Kida's article in the *Rekishichiri* (Vol. XIX, No. 4), etc.

an historical person, but to be satisfied with only the fact that the Ishibutai is a tomb in the style of the 7th century.

5. **Concluding Remarks.** Megalithic tomb Ishibutai has of course the same constructive principles with those of the West[1], for example, the use of the orthostatic blocks, etc., though we hesitate to believe fantastic theory that such megalithic monuments had been distributed from Europe to Africa, India, and Asia by cultural migration and this "Megalithic culture" is considered combined with socalled "Heliolithic culture", or so[2]. Anyhow, the Ishibutai is one of the most gigantic megalithic corridor-tombs in Japan[3], though not the biggest. Moreover, we have to remember that the Ishibutai looks much more gigantic, because it is entirely bared, displaying all its construction, and the stones used are rather rough, not much worked as we see in other tombs like those of Abe-no Monju, Koshi, etc. In these latter ones the stones are not smaller but are carefully worked. All these probably belong to the same period, though the latter may be a little younger. The difference in the styles depended perhaps on the taste of the builders, or else on their economic status. In short, we are very fortunate to have been able to reveal the real nature of such a conspicious example of a megalithic tomb, and moreover, to have had the pleasure of discovering, quite unexpectedly, the square-shaped mound with its surrounding moats and banks—an unique example hitherto unknown and therefore most important in the study of Japanese archaeology.

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(1) Peet, *Rough Stone Monuments*. (London, 1912), etc.

(2) See Elliot Smith and other's books and articles of the Manchester school.

(3) A more detailed comparisons with other tombs are made in the Japanese text. See also the corpus of megalithic tombs and of square-shaped burial-mounds of Japan compiled by Mr. Umehara.