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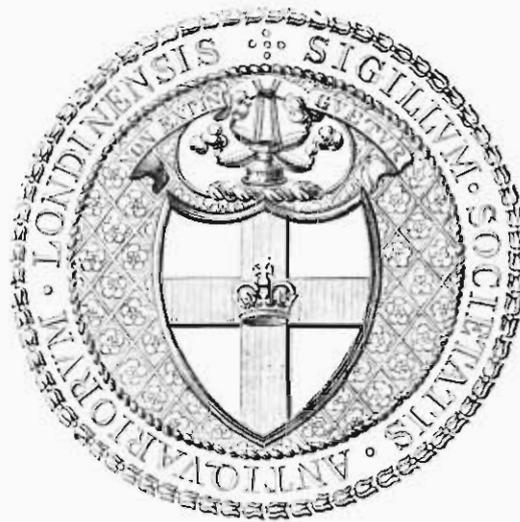
THE  
DOLMENS AND BURIAL MOUNDS IN JAPAN.

COMMUNICATED TO THE SOCIETY OF ANTIQUARIES

BY

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LATE OF THE IMPERIAL JAPANESE MINT.



WESTMINSTER :

PRINTED BY NICHOLS AND SONS, 25, PARLIAMENT STREET

1897.

FROM

ARCHAEOLOGIA,

VOL. LV. pp. 439—524.

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*The Dolmens and Burial Mounds in Japan.* By WILLIAM GOWLAND, Esq.,  
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Read 29th April and 6th May, 1897.

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PART I.—THEIR STRUCTURE AND DISTRIBUTION.

THE Papers which I have the honour of laying before the Society contain a summary of my explorations and investigations of the dolmens of Japan during a long residence in that country.

We have but little exact knowledge of the mode in which the Japanese disposed of the bodies of their famous dead in the very earliest times. The somewhat vague statements of their ancient traditional records would seem to point to burial or mere deposition on the summits of natural hills as their earliest practice, but the most ancient remains yet discovered have not been found in such localities, but on the lower grounds bordering the plains, and on the plains themselves. These remains, which consist of bronze swords and arrowheads, personal ornaments of steatite, jasper, rock crystal, and other stones, and along with which no objects of iron occur, are generally found at but slight depths below the surface of the ground. It is impossible to say with absolute certainty whether they had or had not been originally covered with mounds of earth. If they had been so covered and the mounds were only of small dimensions, the action of long weathering or the agricultural operations of bygone ages would have amply sufficed to level and destroy them. The mass of evidence is in favour of the belief that low mounds had been erected over them and that the Japanese were a race of mound builders in very early times indeed.

In China, mound-burial was practised at a very remote period, and although implicit credence cannot be altogether given to the specific statements of the early writers relating to this matter, yet broadly considered their testimony doubtless contains some elements of truth. The first burial-mound of which they give a record is the tomb of Hia How Kao,<sup>a</sup> the date assigned to it being 1848 B.C. Several others, which I need not specify, of later centuries B.C. are also mentioned; but, apart from these records, we have very weighty evidence in favour of the extreme antiquity of mound-burial in that country in the use of the ideograph 陵 *ling*, Jap. reading *ryō*, from very remote times to denote a burial mound, its original proper meaning being a high mount or peak. As the civilization of China, even during these times, was probably not without influence on the tribes beyond its frontiers, it is not impossible that the Japanese may have been mound builders before they migrated from their old home on the mainland. Whether this supposition be correct or not, it is certain that the race practised mound-burial, especially in the western parts of the islands they now occupy, several centuries before our era.

That the simple mounds preceded those that contain a rude stone chamber, which we call a dolmen, is also not open to doubt, for associated with them we find the rudest hand-made pottery, and neither this pottery nor the swords of bronze previously mentioned have ever been discovered in dolmens. Stone beads and ornaments, and sometimes bronze arrow-heads are, however, found in dolmens, but then they occur along with weapons and objects of iron and beads of glass. The period of the dolmens is thus a continuation of that of the simple mounds. During the dolmen period, and certainly after it, the building of simple mounds still survived, but sarcophagi of wood, stone, or terra-cotta, of which there are no traces in those of the earliest date, were then used.

As the entire subject of the various modes of mound-burial practised by the Japanese from prehistoric to early historic times covers such a wide field that it could not be satisfactorily treated within the limits of these papers, I propose to confine my remarks to the dolmens only.

It will, however, be necessary for me to mention incidentally a few non-dolmen mounds, and to compare them with the dolmens, more particularly some of the former, which are contemporaneous with them and contain similar remains.

In addition to burial in mounds and dolmens, sepulture in chambers hewn in

<sup>a</sup> Mayers, "On the Stone Figures at Chinese Tombs," a paper read before the North China Branch of the Asiatic Society, 12th March, 1878.

the rock *in situ* was also largely practised by the early Japanese. I first discovered two important groups of these rock-tombs on the western frontiers of Kawachi about fourteen years ago, but subsequently met with them in other provinces in localities where the rocks were easily cut, such as tuffs and decomposed granites. Some, as for example those in Hyūga, may perhaps be of similar age to the early mounds, but those I examined were in all cases completely empty, and the remains found in others in other districts were not of earlier date than the dolmen period, so that it is difficult to speak with certainty on this point.

Standing stones, either single as "menhirs" or in "avenues" or "circles," which are not unfrequent in Europe, Africa, and the mainland of Asia, do not appear to have been ever set up by the early Japanese, as none have been found anywhere in the country. The nearest approach to stone circles is seen on a circular terraced burial-mound near Kyōto, attributed to the Emperor Tenchi (died 670 A.D.), where each terrace is encircled by a low pile of small round stones; also on a mound of earlier date covering a dolmen, near Ashikaga (prov. Shimotsuke), explored by Professor Tsuboi, of the Imperial University Tōkyō, where two belts of large pebbles are similarly placed.

More remote analogues of stone circles, although probably intimately connected with them in symbolical meaning, are the circles of terra-cotta figures which were set up around the summits of the burial-mounds of important chiefs as substitutes for their retainers and wives, who in earlier times were interred alive in the same position; also the rows of large terra-cotta tubes (fig. 11), to be described later, which fringe the peaks, terraces, and moats of many of the larger mounds. These tubes were, however, generally almost completely buried in the ground, although sometimes, and then they were of a different shape, they enclosed as a fence the immediate precincts of the tomb, in the same position as the terra-cotta figures.

Of the simple burial-mounds of earth of the earliest period we know but little, as all have been more or less completely destroyed by the hand of time or in reclaiming land for agriculture. They cannot, however, have been of very large dimensions, as all the remains representing that time have been found, as I have already stated, but shallowly buried in ground either level or only slightly elevated above the surrounding surface. In Yamato these remains consist generally of stone beads and ornaments of various kinds, associated with arrowheads and other articles of bronze. Further westward, in Aki, northern Shikoku, and especially in Kyūshū, bronze swords also have been unearthed. No stone weapons or implements have ever been found, to my knowledge, in any of these ancient burial

mounds in any part of Japan. In fact, all the evidence afforded by the remains tends to show that the Japanese had passed out of their Stone Age before they migrated from the mainland; and the discoveries of the bronze swords and the moulds for casting them, which will be described later, only in the western parts of the country, would seem to support the view that they were then in the last stages of their Bronze Age.

Excepting these earliest mounds all others enclose either dolmens or sarcophagi. Those containing dolmens are generally older than those containing sarcophagi; there are, however, several examples in which both classes are undoubtedly contemporaneous.

#### *Dolmens.*

The term "dolmen"<sup>a</sup> is used in these papers in its broad or generic sense, and signifies a stone burial-chamber, generally of rude megalithic structure, larger than a cist, and whether covered by a mound or not. Dolmens are very numerous in Japan, and many hundreds are known to me. Of these I have carefully examined 406, and made drawings of or measured 140. It would hardly be profitable were I to attempt to describe or even enumerate all these, I hence propose to notice only the chief types of the principal groups, to point out their most important features, and to refer to Table I. for the details of these and others, which can be studied at leisure by any who may wish to pursue the subject further.

#### *Distribution.*

Their distribution in the country is shown in the sketch map (Plate XL.). From this it will be seen that they occur in more or less scattered districts, chiefly in the basins of the greater rivers, on the margins of the more important plains, and

<sup>a</sup> I follow the practice of most continental authors in this use of the word "dolmen." The following writings of some distinguished archaeologists, in which the word is used in the above sense, may be cited:

G. de Mortillet, *Matériaux pour l'histoire primitive et naturelle d l'homme*, xiii. 412 *et seq.*

J. de Morgan, *Mission Scientifique en Perse*, 1896, p. 56 *et seq.*

Prof. N. Joly, *Man before Metals*, 1883, p. 147.

Prof. E. S. Morse, "Dolmens in Japan," communicated to the Boston Society of Natural History, 1879.

And Herr Dönitz, *Verhandlungen der Berliner Anthropologischen Gesellschaft*, 1887, p. 114 *et seq.*

near the coasts of the Inland and Japan seas. To a lesser extent they are found far inland, as in the provinces of Ōmi, Mino, and Shinano.

Their eastern limit is practically the north-eastern frontier of Musashi and the east of Shimotsuke, but a small group is found a little further east in Iwaki just beyond the border of the latter province. Beyond this they have not yet been discovered. Westwards they extend to the shores of the straits which separate Korea from Japan. From this distribution we may infer that during the period of dolmen-building the occupation of the country by the Japanese was mainly confined to these districts, and that the extreme north-east and parts of the wild forests and mountain tracts of the interior were still held by the aborigines; and this is confirmed by the occurrence of the aboriginal stone weapons beyond the dolmen groups in Mino and Shinano, and other provinces, and in largely increasing quantities as we proceed to the northern extremity of the island.

The districts in which the dolmens are most numerous are a tract around the junction of the provinces of Kōtsuke, Shimotsuke, and Musashi; in Kawachi and Yamato; and in the northern parts of the island of Kyūshū.

The provinces of Settsu, Bizen, and Tosa are also notable for their abundance, whilst Izumo, Hōki, Tamba, and Higo are famous besides for examples specially remarkable for their structure or for the extensive remains which some have contained.

The dolmens usually occur in groups of from twenty to eighty or more. Single dolmens are rare, and where found are invariably the survivors of a group the other members of which have been destroyed.

The situations in which they are generally found are the lower flanks of a mountain range, and the crests and slopes of the lower hills and upland tracts which bound the plains. Sites commanding distant and extensive views seem to have been preferred. In many groups they are placed so closely together that their mounds touch one another or even coalesce, but more often they are scattered over the hill sides and their summits at distances of ten, fifty, or even more yards apart.

#### *Forms of Japanese Dolmens.*

Japanese dolmens may be arranged in four great typical classes according to the general form or plan of their interiors, beginning with the most simple and ending with the most highly differentiated structures.

It must, however, be borne in mind that such an arrangement does not necessarily represent the relative age of each class, as although doubtless the complex forms were evolved from the simple forms of an earlier age, yet some of the latter, even of the rudest structure, range through almost the whole dolmen period.

In figs. 1—4 are represented in outline diagrammatically a ground plan and longitudinal vertical section of the interior of each of these four typical classes.

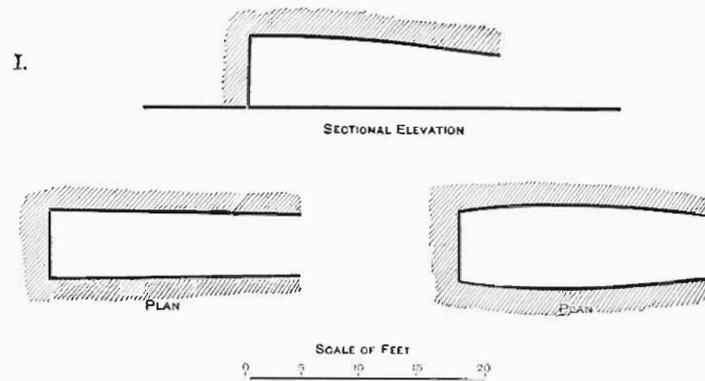


Fig. 1.

Class I. The *allée couverte* types of dolmens, which consist of long galleries with more or less parallel walls and do not possess a separate chamber.

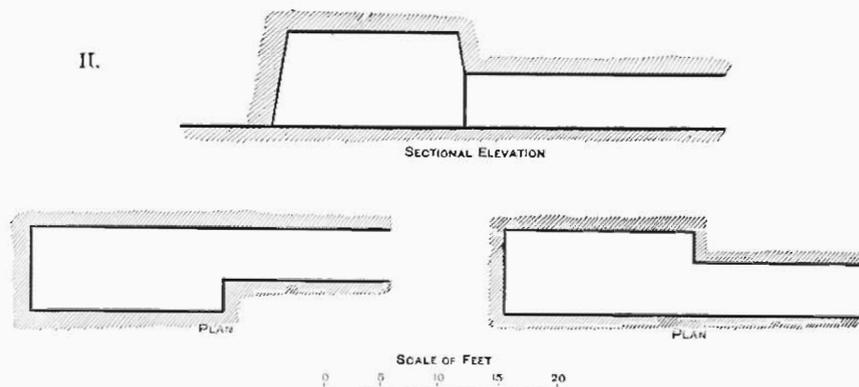


Fig. 2.

Class II. Dolmens which have a distinct chamber and gallery, in which one wall of the gallery is in a line with one wall of the chamber.

III.

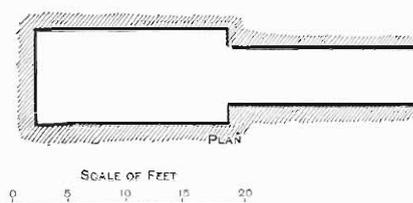


Fig. 3.

Class III. Dolmens having a more complete chamber than the last, with the gallery entering the chamber on the median line. The sectional elevation of these dolmens is the same as that of Class II. (fig. 2).

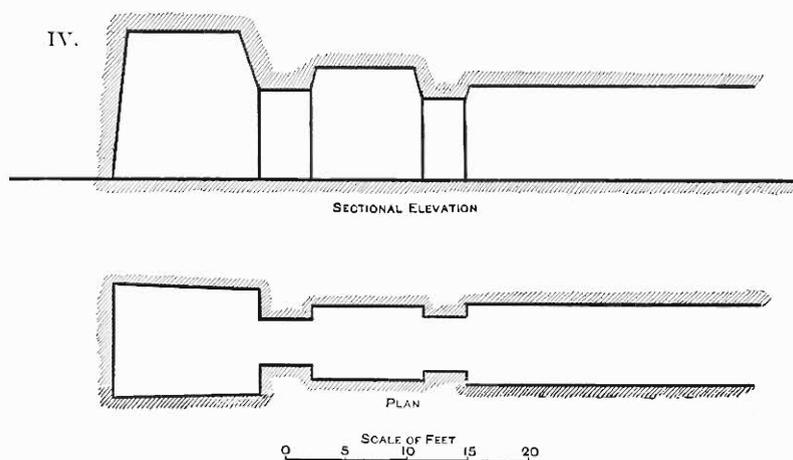


Fig. 4.

Class IV. Dolmens containing two clearly defined chambers.

In addition to the above types there are also a few exceptional forms.

There are no so-called "free standing" dolmens in Japan, *i.e.* no dolmen which originally was not covered with a mound, or which was not intended to be so covered. It is true, however, that many at the present time are partially or almost completely exposed, but in all these cases, even in the few in which but traces of the old mound remains, it can be shown incontestably that they had once been covered by one.

The "cromlech," *i.e.* a huge flattish stone resting on three stones set upright, of which we have so many examples in Great Britain, is not represented in Japan excepting where a group of dolmens has been long used as a quarry for building stones.

*The Structure of Dolmens.*

All the dolmens of Classes I. and II., and generally those of the others, are constructed of rude unhewn blocks, often weathered boulders just as taken from the mountain sides; but in some localities, where, there is an outcrop of suitable rock, some or all of the stones seem to have been roughly quarried, their natural shapes due to geological jointing and bedding being preserved. In other cases they appear to have been broken, although in only three instances have I found the marks of the wedges used in splitting them. Frequently when one of their surfaces is flat they are placed with that side inwards. The stones are laid in the walls very rudely, according to their shapes, the large interstices between them being filled with others of smaller size. Traces of a clay filling are sometimes found in the narrower joints, but no mortar or calcareous cement was ever used.

In many dolmens the sides are built roughly parallel, but sometimes gradually widen out about the middle of their length, and generally converge towards the mouth. They are always inclined inwards towards the roof, so that this is usually from one to four feet narrower than the floor. The roof has often a more or less downward slope towards the entrance.

The walls are very often, yet not always, megalithic, but whatever their structure may be the roof stones are always huge and ponderous. The capstone over the entrance to the chamber, and one or more stones in the back wall, are also often of very large dimensions. The walls even of those of comparatively late date, are never plastered or coloured, but the surfaces of the stones are left entirely bare. No stones bearing inscriptions, ornamental designs, or "cup-marks" have ever been found in any dolmen.

Besides these rude stone structures, dolmens carefully built of hewn blocks also occur; they are, however, not common, are usually of Class III., and will be described with the examples of that type.

The structure of the great majority of dolmens is well illustrated in Plates XXXVIII. and XXXIX., and figs. 5, 6, and 8.

Fig. 5 represents the interior of a dolmen at Tsukahara (Settsu) (Table I. No. 98). The chamber measures 14 feet 8 inches long, 5 feet wide, and 7 feet high, and is entered through a gallery 11 feet long. It is built entirely of more

or less weathered boulders, and, although of Class II., represents accurately the structure of the rude forms of Class I. The convergence of the walls

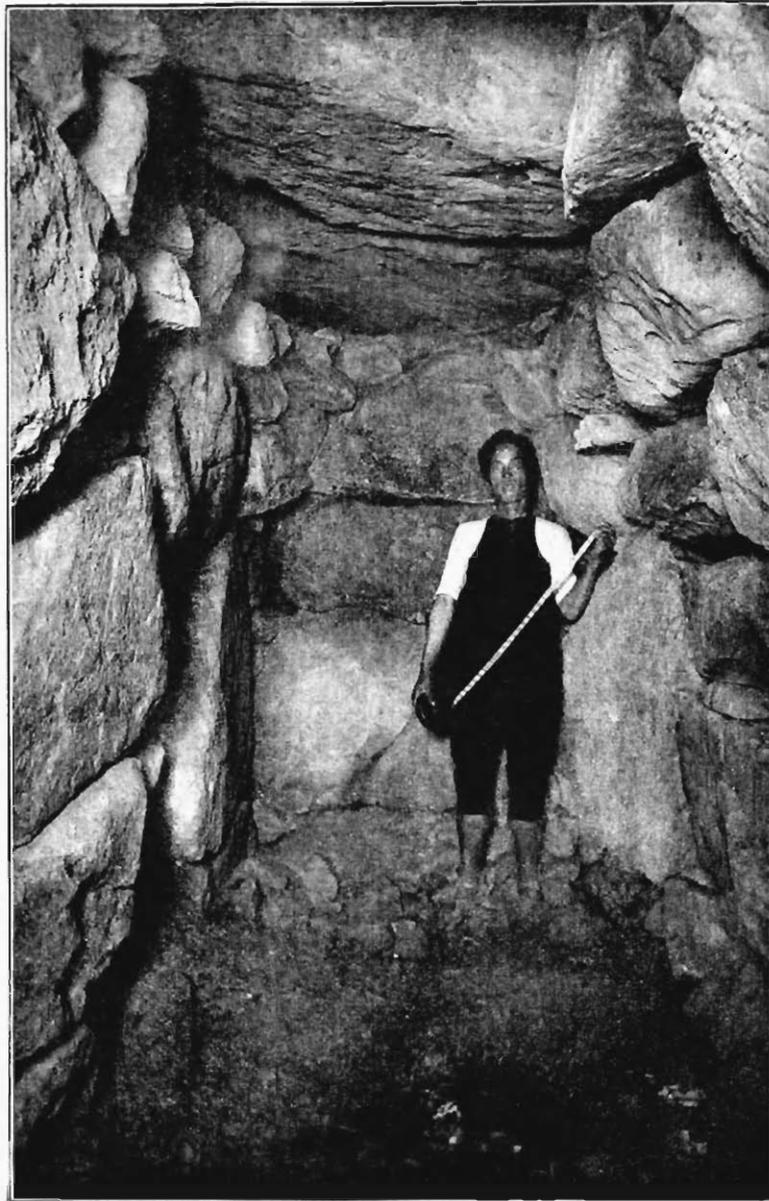


Fig. 5. Interior of Dolmen at Tsukahara (Settsu).

towards the roof is well seen in this example. It is covered by a simple conical mound.

Fig. 8. A dolmen at Abe-mura (Yamato) (No. 129 in Table I.) of still larger stones than the preceding.

Plate XXXVIII. fig. 1. The interior of a dolmen at Hattorigawa (Kawachi). This photograph was taken from the interior looking outwards, to illustrate the massive lintel stone and the large block forming the right boundary of the chamber.

Plate XXXVIII. fig. 2. A dolmen in the same group as the last, showing its entrance, the mound by which it is covered, and the roof of its chamber cropping

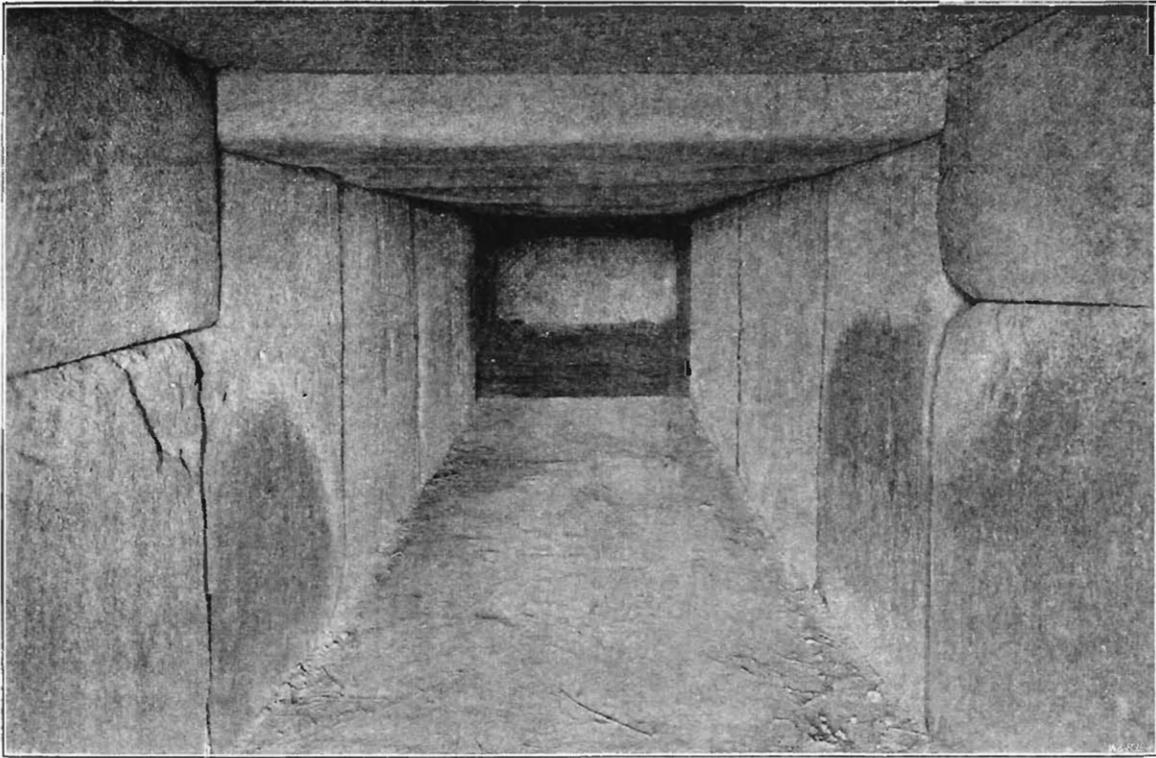


Fig. 6. Interior of Dolmen at Koshi (Yamato). (See fig. 13.)

out from the summit of the mound. Most dolmens in conical mounds closely resemble this in external appearance.

Fig. 6. The interior of a hewn-stone dolmen at the village of Koshi (Yamato).

Plate XXXIX. fig. 1. An external view of a dolmen at Myōhōji (Kawachi). The inner surface of the stones of this dolmen are all carefully dressed, the outer being left in their natural state.



FIG. 2. EXTERNAL VIEW OF DOLMEN AT HATTORIGAWA (KAWACHI), JAPAN



FIG. 1. INTERIOR OF DOLMEN AT HATTORIGAWA (KAWACHI), JAPAN



Plate XXXIX. fig. 2. The exterior of a dolmen at Dōmyōji-yama (Kawachi), from which the greater part of its mound has disappeared. The capstone of the chamber measures 10 feet in length, 8 feet 6 inches in breadth, and 6 feet in thickness.

Here I should like to say, by way of caution, that the rudeness of structure seen in certain groups of dolmens in Japan does not necessarily indicate extreme antiquity, as it is so largely dependent on the nature of the rocks in their vicinity. Thus for example, in the province of Ōmi, where the granitic rocks are so jointed that the blocks lying on the hill sides are in the form of huge slabs, we find the dolmens with well-built walls. In other provinces, where weather-worn rounded blocks of granite, or angular masses of palæozoic rocks alone are available, dolmens with narrow chambers or walls of the rudest construction only occur, as with such materials no other structure was possible. Yet the latter are not older than the former, as they all contain similar remains. One which I found near Tsukahara (Settsu) was of an elongated beehive shape, simply because rolled stones from the bed of the adjacent river were used for its walls, and this was the easiest form to construct with them.

Some characteristic types of each of the four classes of dolmens will now be considered.

#### CLASS I.

These dolmens, as will be seen from fig. 1, are simply covered galleries without a specially defined chamber, a form common in France and on the west of the Caspian Sea. Although they are never built of hewn stones, they are not of ruder structure than many of the higher forms of the other three classes, and are certainly often contemporaneous with them.

One which I found near Hamada (Iwami), (Table I., No. 22) is a good representative of this class. It is covered by a conical mound which rises about 9 feet 6 inches above the inner surface of the roof. Its stones are all rough excepting one, and this has been rudely recessed to allow another to fit into it. None are very large, the largest being one of the roof stones (9 feet by 7 feet by 2 feet 6 inches).

The dimensions of the dolmen internally are: length, 21 feet; breadth at back, 5 feet 9 inches, diminishing to 5 feet at the mouth; height, 5 feet to 5 feet 9 inches.

According to the villagers, it has always been standing open, and I hence found nothing in it.

This form of dolmen I have also met with in the provinces of Mino, Kawachi, and Bizen, and one was reported to me in Toza. (*See Table I.*)

#### CLASSES II. AND III.

The dolmens of these classes may be conveniently studied together as they are found intermingled in nearly every important group. In all we have a more or less well-defined approximately rectangular chamber, longer than broad, entered through a gallery of varying length. In Class II. either the east or the west wall of the chamber is in a continuous line with one wall of the gallery, the division between chamber and gallery being only marked on one side. In Class III. there is a perfectly distinct chamber, the gallery entering it on the median line.

This division between chamber and gallery is formed not only by stones projecting from one or both walls, but also by one of the roof stones, generally of a very massive character, being placed at a lower height than the others, and so forming a rude lintel over the entrance to the chamber (figs. 9 and 14 and Plate XXXVIII. fig. 1). The height and breadth of the entrance so formed is in most cases not much less than those of the gallery. Dolmens with a gallery continuous with their west side are seldom seen, whilst the opposite form is common.

Those with a perfect chamber (Class III.) are by far the most numerous of all in every province of Japan excepting Kawachi, where there seems to have been a preference for the one-sided form, not however to the complete exclusion of the other.

All the dolmens of Class II. which I have explored are, with one exception in Izumo, of the same rude structure that I have already described; but those of Class III., whilst being also generally rude, are sometimes built of well-hewn blocks. In the capacity of their chambers neither class differs much from the other, although the largest I have found is one of Class III.

The orientation of Japanese dolmens generally may be conveniently described here, as it is well illustrated in these two classes. In common with the rude stone monuments of other races, they are built as a rule in a definite direction, and, whether they occur singly or in groups, have almost always an approximately southerly aspect. (*See Table I.*)

In most provinces, especially Kawachi, Yamato, Tamba, and Bizen, great importance appears to have been attached to this aspect, as I have observed there so many examples in which, in order to obtain it on the slopes of some of the



FIG. 1. FRONT VIEW OF DOLMEN AT MIYOHŌJI (YAMATO), JAPAN



FIG. 2. DOLMEN AT DONYŌJI-YAMA (KAWACHI), JAPAN



hills, the difficulties of construction must have been enormous, whilst with another bearing there would have been none. But even in these provinces there are one or two dolmens in some groups in which there is a departure from the general rule, the reasons for which are not evident. On reference to Table I. it will be seen that seven in all are noted,<sup>a</sup> six of which have approximately western aspects, and one bears N.N.E. In Hōki and Izumo three are directed towards W.S.W.

The province of Iyo is exceptional; there there is no uniformity, and they face almost every point of the compass. (Table I. Nos. 28 to 35.)

The reasons which have been advanced for the southern aspect of tombs are well known to archæologists, and need not be adduced here. I may, however, say briefly that in Japan its origin has probably some basis on the ancient sun-worship, of which there are many survivals in the country. The influence of the sun was believed to be beneficent to the spirits, hence these chambers of the dead were directed towards its meridional position.

The dolmens of Class II. are covered by mounds which are generally of simple form. Those of Class III. are found in mounds of every kind.

The mound which is of most frequent occurrence is of a simple conical shape, rising from a circular or oval base, sometimes with a flat top, and often so much weathered that it barely covers the dolmen, the capstone of the gallery mouth, and part or even the whole of the roof, and occasionally the walls, of the chamber being exposed. These mounds vary in diameter from about 15 feet in some of the diminutive dolmens of Mino to about 90 or 100 feet in those of larger size in Kawachi and elsewhere. All I have examined are composed of the earth of the locality excepting at Matsushiro (Shinano), where there is a large cairn (height 23 feet, diameter 105 feet) of angular stones, without earth, which is said to contain a dolmen.

In these simple mounds, and in these only, except in a few rare cases, the floor of the dolmen is on the same level as the natural surface of the ground in front of it. In all others it is raised to a greater or less height above it.

In fig. 7, is given a sectional elevation and a plan of a dolmen of Class III. covered by one of these conical mounds. This dolmen is situated on the lower slope of the range of hills near Shiba (Kawachi), a little to the north of the chief dolmen groups of the province. It is of considerable interest, as I obtained from its chamber an important collection of metallic and other objects, which are now in the British Museum and will be described subsequently.

The long diameter of the mound measures 94 feet. Its top rises about 5 feet

<sup>a</sup> Table I. Nos. 5, 50, 51, 79, 107, 111, and 120.

above the inside of the chamber roof. The chamber is somewhat irregular in plan, exhibiting a departure from the normal approximately rectangular form, one side being 13 feet 8 inches long, and the opposite only 11 feet 8 inches, and the back 10 feet 5 inches wide, whilst the front is only 7 feet 11 inches. Its height is 10 feet 3 inches.

The walls are built of rough stones from the hill side of varying sizes and shapes very rudely fitted together, leaving large gaps between them which are filled with smaller stones. They converge more than is usual towards the roof, hence three stones of only moderately large size suffice to cover it.

A pavement of flat irregularly broken natural slabs forms the floor of the

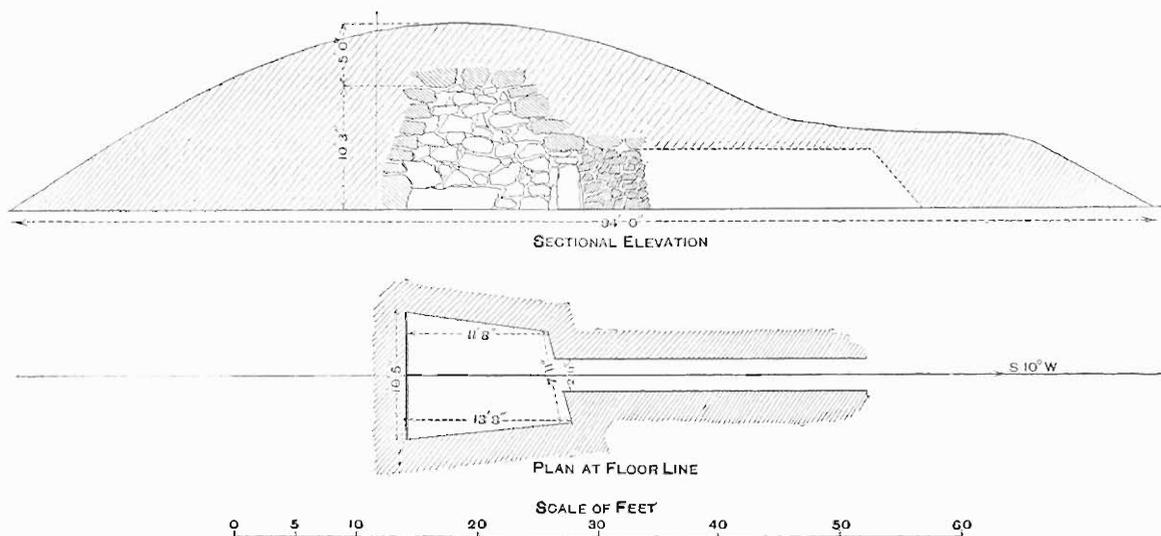


Fig. 7. Dolmen at the village of Shiba (Kawachi).

chamber, a feature of uncommon occurrence. Generally the floor of a dolmen consists simply of the ground on which it is built, or of one or more layers, several inches in thickness, of waterworn stones or pebbles spread over the entire bottom of the chamber. In a few I have found remains of a bed of beaten clay of such hardness that it seemed to be a kind of cement, but on analysis it yielded no lime.

The gallery, which is about 24 feet long, 5 feet high, and 3 feet wide, enters the chamber at the middle of the south end. It is closed here by a wall of stones, not less than 5 feet in thickness, built across it. I may say here that I obtained access to the interior of this dolmen through a gap below one of the roof-stones, and after completing my exploration of the chamber I attempted to explore the gallery, but

on removing about 4 feet of the stone wall the end of the chamber began to collapse and operations had to be suddenly suspended. In other dolmens I have found a similar wall built across the gallery to prevent access to the chamber.

In a large dolmen at Enya near Imaichi (Izumo) this wall is constructed of hewn blocks laid between the portal stones at the junction of the chamber and gallery; whilst at another, also in Izumo, it is built of round stones 8 or 9 feet distant from the same point. In rare cases the mouth of the gallery was closed by a single large stone. At the present time most are open or full of earth only.<sup>a</sup>

Whether a dolmen was allowed to stand partially open or not for some time after the body had been placed in it cannot be determined with absolute certainty but the position of the above wall, as well as the well-defined step in the roof of the gallery of some, would seem to mark off part of the gallery for a special purpose.

The occurrence too in this part of ceremonial vessels in many dolmens, and of a second chamber in others, tend to support the view that partial access was possible for the presentation of offerings and libations to the manes of the dead subsequent to the performance of the funeral rites. Similar offerings seem to have been made still later outside the mound, as fragments of the same pottery are not unfrequent there. At the present day these ceremonial rites in honour of the dead still survive in the prayers and sacred dances accompanied by offerings of the products of the mountain, river, and sea which are held periodically in front of some of the imperial burial-mounds.

Another example of Class III. is a megalithic dolmen, containing a stone sarcophagus, near the temple Monju-in at Abe-mura (Yamato) (Table I. No. 129). In the grounds of the same temple are two others, one of which is built of hewn masonry.

This dolmen (fig. 8) is a fine specimen of megalithic structure, and is one of the few remaining in this province which still contain a hewn stone sarcophagus. Several of the stones both of its walls and roof are of a very large size; the hinder roofstone being about 10 feet long by 11 feet broad, and one or two others are of similar dimensions. The total length of the dolmen from its entrance to the back wall of the chamber is  $38\frac{1}{2}$  feet; the chamber being 14 feet 8 inches long, 8 feet 3 inches broad, and 6 feet 11 inches high; and the gallery 23 feet 9 inches long, 6 feet 5 inches broad, and 5 feet 3 inches high.

<sup>a</sup> In a dolmen at Ashikaga (Shimotsuke) opened by Prof. Tsuboi, access to the chamber had been effectually prevented by filling it up to the roof with small round stones.

In the middle of the chamber, placed longitudinally, is a sarcophagus of carefully hewn stone (Table II. No. 26), the coffer and the cover being each cut out of a single block. The former, measured externally, is 7 feet 10 inches long, 4 feet 9 inches broad, and 3 feet 1 inch deep. I was not allowed to remove the cover, so that its internal capacity is doubtful, but if we compare it with others I have measured (Table II.), the cavity for receiving the body would be approximately 6 feet 2 inches long, 3 feet 1 inch broad, and 2 feet 1 inch deep. Both coffer and cover are of a very ponderous character. The cover alone, which overlaps the coffer about  $1\frac{1}{2}$  or 2 inches, and is 2 feet 1 inch in thickness, is not

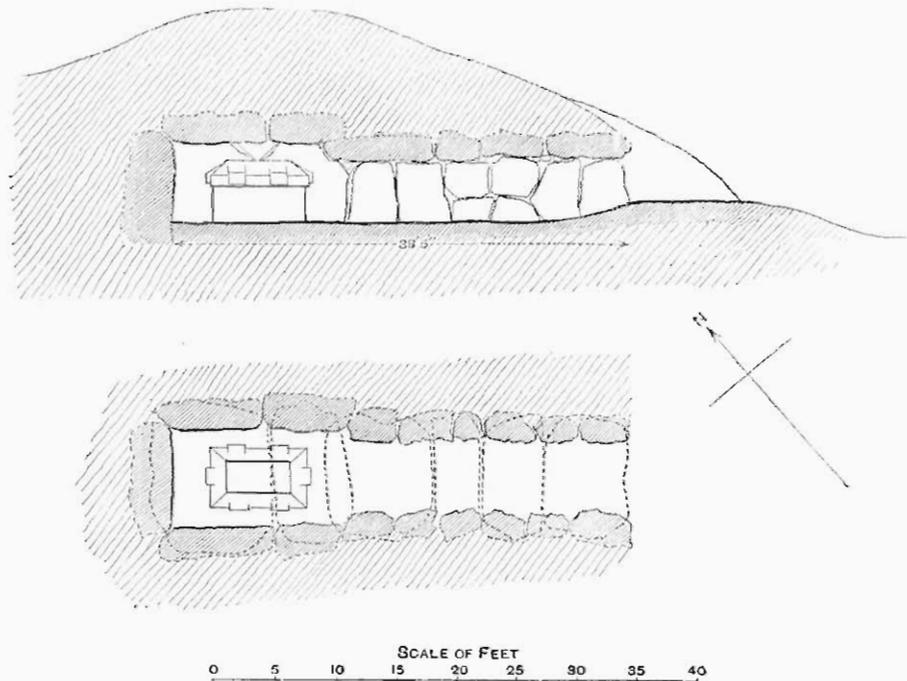


Fig. 8. Dolmen containing a hewn-stone Sarcophagus at Abe-mura (Yamato).

less than 4 tons in weight. The projecting lugs seen on its sides and ends are intended for the attachment of ropes for lowering it into position.

Burial in stone sarcophagi placed in the chamber of a dolmen seems to have been not infrequent, and although I have only found twenty-four (Tables I. and II.) in all the dolmens I have explored, yet doubtless many, especially those of less massive character, have been removed by the farmers and broken up for building stones. In two places, in fact, I have found their covers used as bridges, but no trace of their coffers.

This sarcophagus is a typical specimen of the Japanese stone sarcophagi which are hewn out of solid blocks, although in dimensions and a few details of

construction we find considerable variations. Other stone sarcophagi constructed of hewn slabs are also found in dolmens, but they are of less frequent occurrence than the preceding. Besides these others of wood and terra-cotta were also in use.

In a rude megalithic dolmen at Mi-no-hara (Settsu) I found two sarcophagi (Table II. Nos. 21 and 22) in its chamber, one being of hewn blocks and the coffer of the other of hewn slabs, so that both forms were contemporaneous. In the chambers of the dolmen at Imaichi (fig. 14) there is also one of each type.

Particulars of these sarcophagi and of others I have found are contained in Table II.

All the dolmens I have thus far described are contained in conical mounds

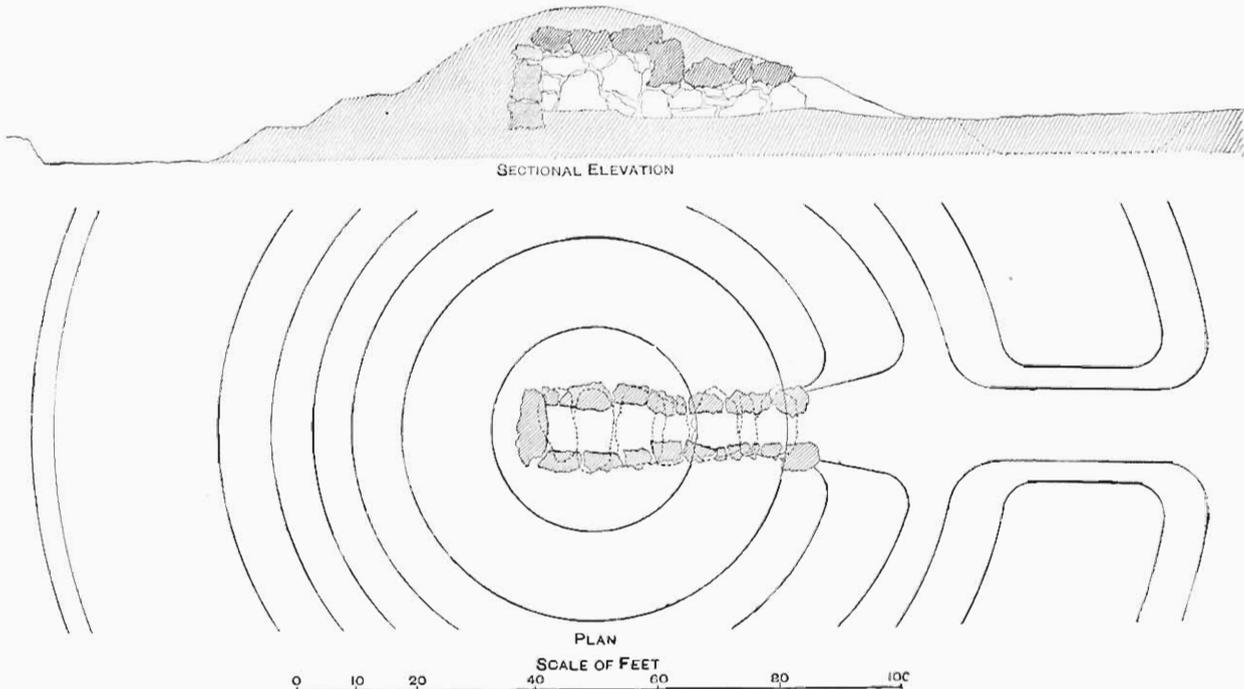


Fig. 9. Dolmen at Andogahashi (Yamashiro).

with straight sloping sides, but this simple form of mound is sometimes departed from probably on account of the rank of the person buried in the dolmen chamber. In these cases, whilst the general conical form is preserved, the sides are not straight, but are formed of one or more well-defined terraces. These mounds are usually of large size varying from about 80 to 200 feet in diameter, and from 20 to 25 feet in height. They are frequently surrounded by a moat, and sometimes have a rectangular base. A typical specimen with two terraces, with the dolmen contained in it, is represented in fig. 9. It is situated at Andogahashi (Yamashiro),

forming one of a group of about sixteen dolmens which are scattered around the village. The long diameter of the mound is 132 feet, its short diameter 124 feet, its height 25 feet, and it is surrounded by a moat 28 feet wide.

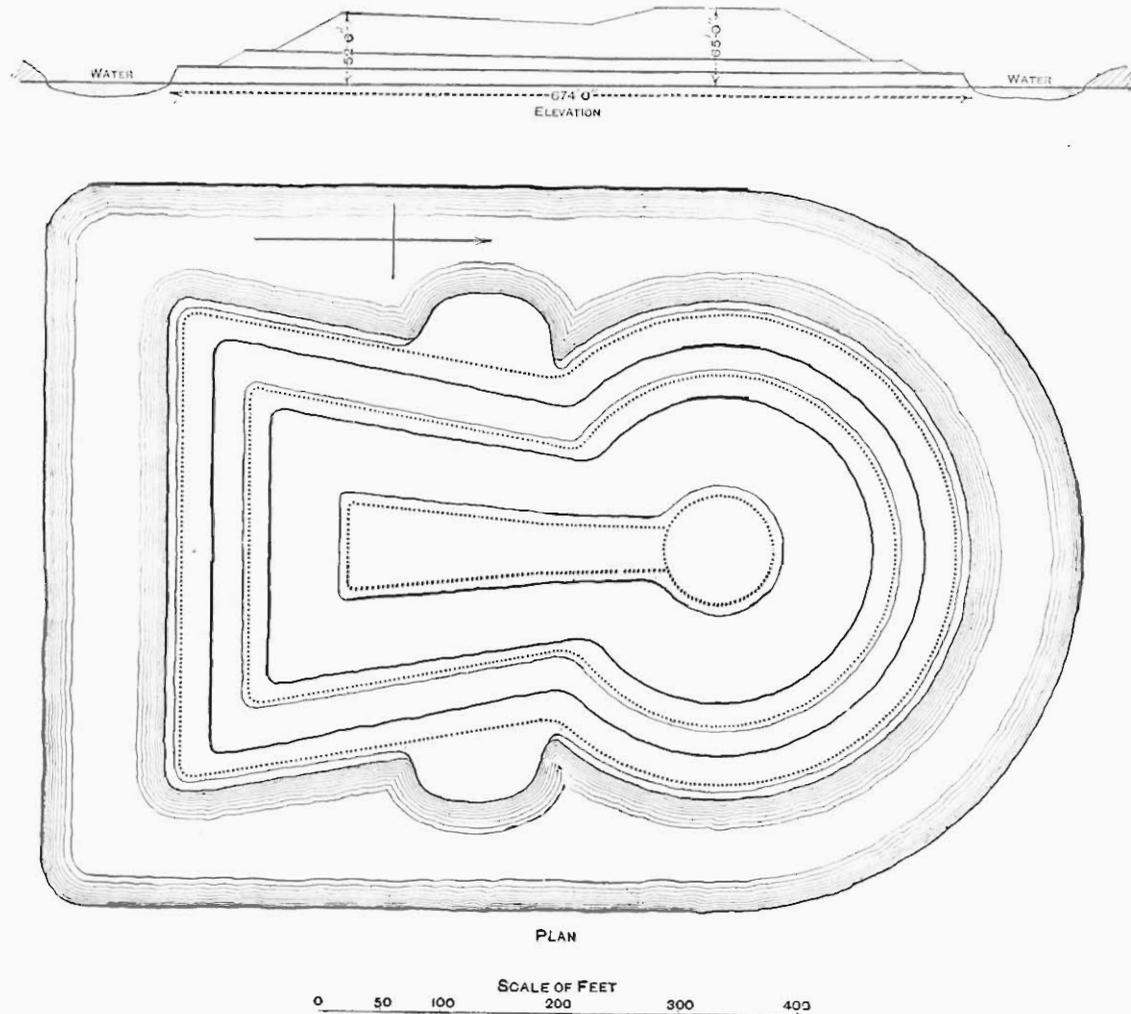


Fig. 10. Double Mound near Nara (Yamato). (The dotted lines on the plan represent the positions of the rows of terra-cotta tubes.)

The dolmen (Table I. No. 115) is of Class III., rudely built of irregular unhewn blocks of a hard palæozoic clay slate. In its walls and roof there are several megalithic boulders; one of which is the lintel stone. The total length of the dolmen from its entrance to its back wall is 44 feet, its chamber being 18 feet long, 8 feet 5 inches broad, and 11 feet 4 inches high, and its gallery 26 feet

2 inches long, 5 feet 2 inches broad, and 5 feet 8 inches high. Its floor is on the same level as the top of the first terrace. No traditions are attached to it, although it is the most important dolmen in the province, and according to the villagers it has always been open and nothing has ever been found in it.<sup>a</sup>

Another class of mounds, generally known as "imperial burial-mounds," and sometimes containing dolmens, is of more than usual interest, as, so far as my knowledge goes, no mounds even remotely resembling them occur in any country except Japan. From their form they may be not inaccurately termed "double" mounds, although they never contain more than one dolmen. Unlike those we have already considered, they are almost always situated on the plains, a few only being found on the level parts of upland plateaus. Fig. 10, which is drawn from my surveys, represents a typical one in the neighbourhood of Nara (Yamato). Although it is of considerable size it is not one of the largest, yet I have selected it for description, as it is in a better state of preservation than any others I have seen. I was also able to go upon it and make careful measurements, as it had not, until I called attention to it, received official recognition as an imperial tomb; whereas in other cases this was prohibited, and I had then to make my observations from outside the moats.

As seen in plan it appears to consist of a circular mound combined with another intermediate in form between a triangle and a square. But as there are no triangular mounds in Japan, and no symbolic use of the triangle until comparatively late times, I think, the form may be regarded as a combination of a circular with a square mound. This curious shape is doubtless not without symbolic meaning, yet Japanese archæologists have not been able to give any satisfactory interpretation of it. The circular end rises in the form of a truncated cone forming a flat peak 113 feet in diameter at its summit, and this is always the highest part of these mounds. The square end, on the other hand, has no distinct peak, its summit being an inclined plane also flat, about 215 feet long, rising at a gentle angle from the inner slope of the conical peak and terminating

<sup>a</sup> The other typical examples of dolmens with terraced mounds which I have examined are the following, all with only one terrace:

At Ōkamedani (Yamashiro) (Table I. No. 116), mound 74 feet long diameter, 20 feet high.  
No moat.

At Tsuma-machi (Hyōga) (Table I. No. 18), mound 126 feet long diameter, 20 feet high.  
Moat 35 feet broad.

At Habikiyama (Kawachi), mound 210 feet long diameter, 196 feet short diameter, 25 feet high. Moat 48 feet broad.

in a long straight edge, 90 feet long, at right angles to the middle line of the mound.

Some of these mounds, especially when seen from a distance, appear to have two peaks, and from this feature the name "futa-go.yama" or twin hills<sup>a</sup> has been applied to them, but on examining them closely I have always found that there was only one original peak, and that the other had been formed by the excessive weathering of the narrower part of the square end.

The word 皇陵 *Misasagi* (or *Teiryō Ch.*), is often applied to them as a specific name, but this is not strictly correct, as its meaning is merely "imperial mausoleum," and in that sense is used for all imperial tombs of whatever form, whether they are mounds or not.

The burial, whether in a dolmen or sarcophagus, invariably took place in the round part of the mound. In the square part no remains of any interment have ever been found, but on its surface, fragments of ceremonial vessels sometimes occur, indicating that some of the funeral or subsequent rites were celebrated there. The chief dimensions of this mound are as follows:—

|                                       |   |   |   |   |          |
|---------------------------------------|---|---|---|---|----------|
| Total length of base                  | . | . | . | . | 674 feet |
| Extreme breadth of square end         | . | . | . | . | 425 ,,   |
| Diameter of round end                 | . | . | . | . | 420 ,,   |
| Height of conical peak                | . | . | . | . | 65 ,,    |
| Height of terminal edge of square end | . | . | . | . | 52½ ,,   |

The relative proportions which these measurements bear to one another differ in nearly every one of these double mounds, so that, although they are all of the same fundamental type, yet in exact outline and plan they present considerable variations.

They have usually terraced sides. In the example shown in the diagram there are two well-formed terraces completely encircling it. In some smaller mounds there is only one terrace or none, but in those of the largest size there are often three, sometimes four.

<sup>a</sup> Other names by which they are popularly known are:

Hyōtan-yama = Hill resembling a bottle gourd.

Samisen-dzuka = Mound of the shape of a Japanese lute.

Cha-usu-yama = Hill of the shape of a mill for grinding tea.

At the re-entering angle on each side, a projection, about 55 feet broad, now generally of irregular form, but probably originally semicircular, extends from the lowest terrace into the moat, and upon this there is generally a low circular mound.

The moat has an average breadth of 100 feet, and completely surrounds the mound. Nearly all these double mounds possess a wide moat, although some from their position on sloping ground are not surrounded by one. Others, as the huge mound of the Emperor Nintoku (Izumi), and another also of vast size, near Fujiidera (Kawachi), had two moats encircling them. Around the outer embankment of the moat of several of the larger mounds small conical mounds are ranged at varying distances apart.

A curious feature which they all possess is the rows of terra-cotta tubes, termed *haniwa*, with which the borders of their summits, terraces, and moats are fringed. One of these tubes is represented in fig. 11. It is 1 foot 1 inch to 1 foot 3 inches in diameter, 1 foot 5 inches long, and about  $\frac{1}{2}$  to  $\frac{3}{4}$  inch thick, and is strengthened by three horizontal ridges encircling it. Two holes, 2 inches in diameter, are pierced in it opposite each other near its middle.

In each row these tubes are set upright, from 3 to 6 inches apart, with the holes at right angles to the mound, and are almost completely buried in the earth, about an inch or so only being exposed. On this mound the row which encircles the entire summit is 8 feet, that on the upper terrace only 4 feet from the edge. On the lower terrace the tubes are exposed, and are being washed away by the water of the moat. The total length of the rows, if placed in a straight line, would exceed  $1\frac{1}{3}$  mile, whilst the number of tubes, at the lowest possible computation, is not less than 4740, exclusive of those on the outer embankment of the moat.

It is difficult to determine, with absolute certainty, the exact intention of the early Japanese in using these rows of terra-cotta tubes. It may be that they were placed in the positions we have seen, for structural reasons, to aid in preserving the form of the summit and terraces of the mound and the embankment of the moat

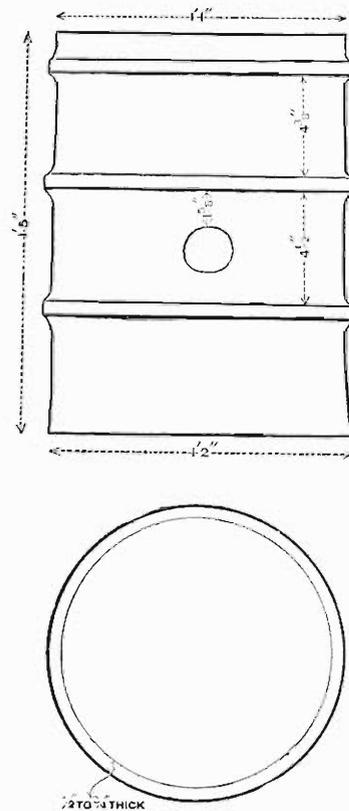


Fig. 11. One of the terra-cotta tubes on the Double Mound near Nara.

from being destroyed by weathering, but, if so, it is not obvious why they were ever buried as far as 8 feet from the edge they were intended to protect.

On the other hand, as I have already advanced, they may have been intended to represent the retainers who in earlier times were immolated on the mound, but to this it may be objected, that they would then have borne at least some rough resemblance to the human form, or some indications that they represented it. They occur, too, on mounds upon which rude terra-cotta human figures (figs. 40, 41) have been found along with them. Possibly there may be some truth in both suppositions.

The largest double mounds are situated in the provinces of Izumi, Kawachi, and Yamato, but many others of smaller but still imposing size I have also found in the provinces of Kōtsuke, Settsu, Hōki, Izumo, Yamashiro, Bizen, and Hyūga. They vary in dimensions from a diminutive example, Yoroidzuka, "the armour mound" in Hyūga, only 125 feet long and 18 feet high, to the stupendous piles officially recognised as the tombs of the Emperors Nintoku<sup>a</sup> and Richū<sup>a</sup> in Izumi, and Ōjin<sup>a</sup> in Kawachi, none of which are less than 1,200 feet in length and 60 feet in height. The first of these three is specially noteworthy for its vast extent, being about 90 feet high, and with its moats, covering about 80 acres of ground.

The manner in which the dead were disposed in these double mounds is by no means uniform. The greater number do not contain a large chambered dolmen, but only a sarcophagus of stone or wood not very deeply buried in the round peak. This I have found in some cases surrounded with a low wall of stones, over which larger slabs were laid; in others these walls are wanting, and huge boulders then seem to have been simply placed over the coffin.

One of the largest and most noteworthy of those containing a dolmen (fig. 12) is situated in the village of Mise, in the most classic region of the province of Yamato. The vast proportions of this mound, and the magnitude of the dolmen within it, exemplify well the importance which the early Japanese attached to the sepulture of their illustrious dead. It is much dilapidated, as, with the exception of the irregularly rounded mound which originally formed its eastern peak, it has been long under cultivation and is entirely clothed with terraced fields. Yet, on

<sup>a</sup> The approximate dates of the deaths of these emperors, according to Japanese records, are as follows :

Ōjin 310 A.D.

Nintoku 399 A.D.

Richū 405 A.D.

account of its vast bulk, agricultural operations have failed to destroy altogether the chief features of its original form.

The mound, when first erected, cannot have been less than 1,000 feet long and 600 feet broad, although now it is slightly smaller, and the peak is 84 feet high. Fig. 12 represents it in longitudinal elevation, and in transverse sectional elevation through the dolmen, and brings very forcibly before us the comparative insignificance of the dolmen when contrasted with the vast dimensions of the mound.

The dolmen is situated below the round peak and lies within the mound at right angles to its long axis, on a level with the second terrace, and 20 feet above the present ground line. This, with rare exceptions, is the position occupied by

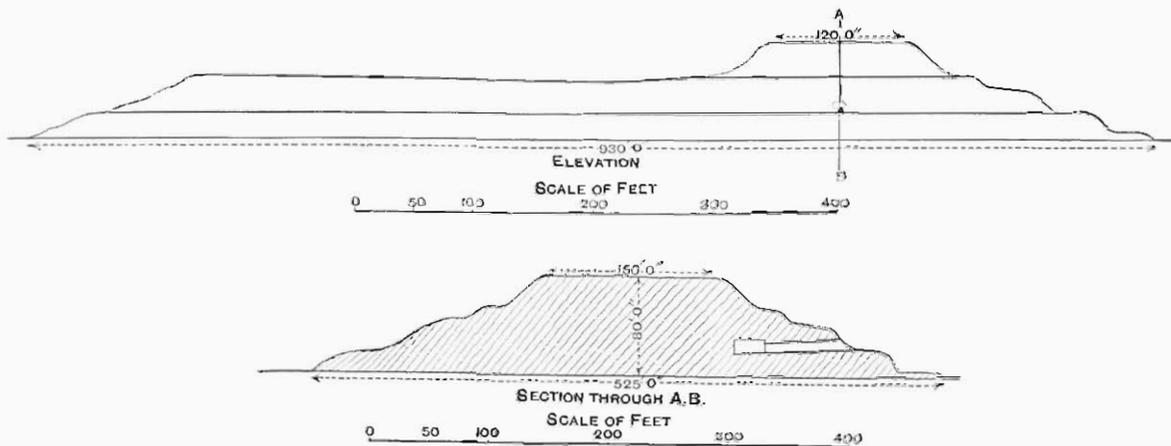


Fig. 12. Double Mound at Mise (Yamato).

In the elevation the entrance of the dolmen is seen in the side of the mound below the peak. The transverse section shows the position of the dolmen within the mound.

dolmens in all mounds of this form. It is the largest dolmen I have found in Japan. The gallery is about 60 feet long, 8 to 10 feet high, and of variable breadth of from 4 to 8 feet. Its roof consists of six huge undressed stones, one of which is 16 feet long. Its walls are built of similar cyclopean blocks, all of the rudest irregular forms. I was, unfortunately, only able to penetrate about 40 feet into the gallery when the depth of water and mud which had accumulated in it became too great for any further advance, so that I did not reach the chamber, but, so far as I could see it, it seemed to be of the same structure as the gallery. There are two sarcophagi of hewn stones within it, one placed transversely against the back wall and another longitudinally near the middle; a portion of the cover of the latter only was just visible above the water. The dimensions of the chamber are

given in the *Sei Sekki Dzu Shi*<sup>a</sup> as, length about 24 feet, breadth 18 feet. These measurements, however, must be received with some reserve, but the chamber is certainly a large one.

For some time it seems to have been recognised as the tomb of the Emperor Mommu (died 686 A.D.) and the Empress Jitō (died 782 A.D.), but there are no grounds for such attribution, and it is without doubt of a very much earlier time, probably not later than the beginning of our era.

The smallest double mound which I have found containing a large chamber is one of a rather extensive group of dolmens with simple mounds which is scattered over the lower slopes of Mount Kazuraki, near the village of Teraguchi (Yamato). The mound is 167 feet long and 32 feet high. The dolmen (Table I., No. 123) is the largest in the group, and both gallery and chamber are of rude megalithic structure. Its total length is 46 feet 6 inches, the dimensions of its chamber being: length, 20 feet 6 inches; breadth, 9 feet 10 inches; height, 11 feet 9 inches; and of its gallery: length, 26 feet; breadth, 5 feet 10 inches; height, 6 feet 10 inches. Its position in the mound is abnormal. In common with all others it is situated below the round peak, but, instead of being at right angles to the long axis of the mound it is in a line with it. Fragments of the same pottery which is found in the normal forms also occur in it, so that it may be regarded as being contemporaneous with them.<sup>b</sup>

That the large double mounds are the tombs of men of the highest rank or of pre-eminent power is, I think, not open to doubt. None else could have been honoured by the erection of burial mounds of such stupendous size and extensive area. Their vast bulk implies the labour of many hundreds of men for a considerable time for their construction, and this only a chief with supreme power could command.

According to Japanese archæologists, the earliest is the tomb of the Emperor Annei (c. 4th century B.C.), and the latest that of Bidatsu (died 585 A.D.). Whilst not accepting the strict accuracy of these dates, there seems to be no reason to doubt that several are as early as one or two centuries before our era,

<sup>a</sup> A Japanese treatise on burial-mounds and tombs, published 1853.

<sup>b</sup> Several examples of dolmens in large double mounds intermediate in size between those just described occur in other provinces; of these the most important I have examined are the burial mound attributed to the Emperor Keitai (died 531 A.D.) at Otā (Settsu), one near Inaichi (Izumo) which will be considered later, and another near Omuro (Kōzuke) (Table I. No. 81). The last had been previously visited by Sir E. M. Satow, who gave an account of it in the *Transactions of the Asiatic Society of Japan*, viii. 313.

and that they continued to be built for five or six centuries afterwards. During this range in time nearly all the emperors, who are mentioned in the ancient books, the *Kojiki* and the *Nihongi*, and many others whose names are not recorded and whose existence has been forgotten, were probably buried in these double mounds. But, as I have already pointed out, I have also found these mounds of imperial form in the important dolmen districts of Izumo, Hōki, Bizen, Kōtsuke, and Hyūga, which are remote from the central provinces the seats of the recognised emperors. This would seem to indicate that these regions were once independent centres, or were governed by chiefs who were regarded as equals with the central ruling family.

According to the statements of Japanese records, the care of the Imperial tombs was intrusted to special resident officers from very early times, a custom surviving at the present day. But the appointment of custodians was frequently discontinued, sometimes for a considerable time; the mounds were then neglected, and their sanctity was disregarded, and it is probably owing to this that many are now under cultivation, and, with numerous others, are not recognised as imperial tombs. Yet, notwithstanding these breaks in the regular succession of custodians, it is not unreasonable to suppose that the most important mounds, those which from their imposing size form such conspicuous objects on the plains, would not altogether lose the early traditions attached to them, and would at least retain the names of the emperors whose tombs these traditions indicated them to be. If any reliance may be placed on this supposition, then the enormous mounds of Nintoku, Richū, and Ōjin may be considered to be the tombs of the emperors whose names they bear, although in the great majority of lesser magnitude the attribution will be doubtful. From this it follows that the building of double mounds reached its zenith about the fourth century of our era.

Besides the dolmens of Class III., which are constructed of rude stones and boulders untouched by the chisel, there are several remarkable examples<sup>a</sup> in which both walls and roof are partially or wholly built of blocks more or less perfectly hewn.

An important dolmen of this structure in an ordinary simple mound occurs on the lower slope of the hills on the west of the Kurayoshi plain, in the province of Hōki.

The chamber and gallery are of the same breadth, 10 feet 3 inches, and they are only separated from each other by two roughly-dressed portal stones, which are both irregular in size and position. The length of the chamber is 12 feet 6 inches, and its height at its highest part 9 feet 7 inches.

<sup>a</sup> Table I. Nos. 20, 21, 37, 38, 39, 114, 117, 119, 127, and 128.

The stones of both the walls and roof are all dressed moderately flat on their exposed surfaces, and the walls especially afford a good example of early squared cyclopean masonry with carefully made joints and without mortar. A point worthy of note in its construction is the evident endeavour of the builder to preserve as far as possible the huge size of the two largest stones in the east wall, these have hence not been hewn square, but their angular portions where they did not meet have been cut into squared recesses into which small blocks were fitted.

This dolmen is also interesting as it is one of the few which contain a cist of rudely-shaped slabs. The cist, too, is the largest I have found, although it is exceeded in size by a hewn-stone sarcophagus in a dolmen in the next province. Its internal dimensions are : length, 7 feet 2 inches ; breadth, 3 feet 10 inches ; and depth, 4 feet 4 inches. The front slab has been broken, but part of it is still in the chamber.

The dolmen was evidently the tomb of a powerful chief, and a capacious cist was needed to contain the armour, weapons, ornaments, and other appurtenances of the camp and court, which were buried without stint with a warrior's remains.

The roof of the chamber is a single stone, which cannot be less than about 12 feet long, 13 feet broad, and 3 or 4 feet thick.

The next dolmen (Table I. No. 119), also of primitive hewn masonry, is probably of an earlier type than the last, and its structure recalls several examples of Etruscan walling. It is situated at Myōhōji, in Yamato, in one of the most important dolmen districts of the province.

An external view of the front of this dolmen, showing parts of the stones of the gallery cropping out from a much-weathered conical mound is given on Plate XXXIX. fig. 1.

The total length of the dolmen from the entrance to the back wall is 36 feet, and the chamber measures at the floor 16 feet 6 inches in length, 10 feet 6 inches in breadth, and is 9 feet in height. The walls are built in two courses of large blocks of hornblendic granite, squared, and fitted together without mortar. Their surfaces are not dressed flat, but with a slight curvature, and where the corners of adjacent blocks have not met they have been cut away, not as in the last dolmen into square recesses, but obliquely, and a triangular block has been fitted into the gap. The sarcophagus (Table II. No. 23) had been rifled long ago, but on carefully clearing out the earth and stones, which almost filled it, I found a small quantity of vermilion in a slight depression in the bottom. I also found several fragments of ordinary dolmen pottery in the earth of the chamber floor.

A remarkable feature in this dolmen is the roof stone of the chamber. This

is an immense block of granite carefully dressed on its under surface, but in other parts left in its natural state. It is the largest stone I have found in any dolmen, its extreme measurements being, length 20 feet, breadth 12 feet, thickness 7 feet, and its approximate weight 80 tons.

As late as the seventeenth century it was held to be the tomb of the empress

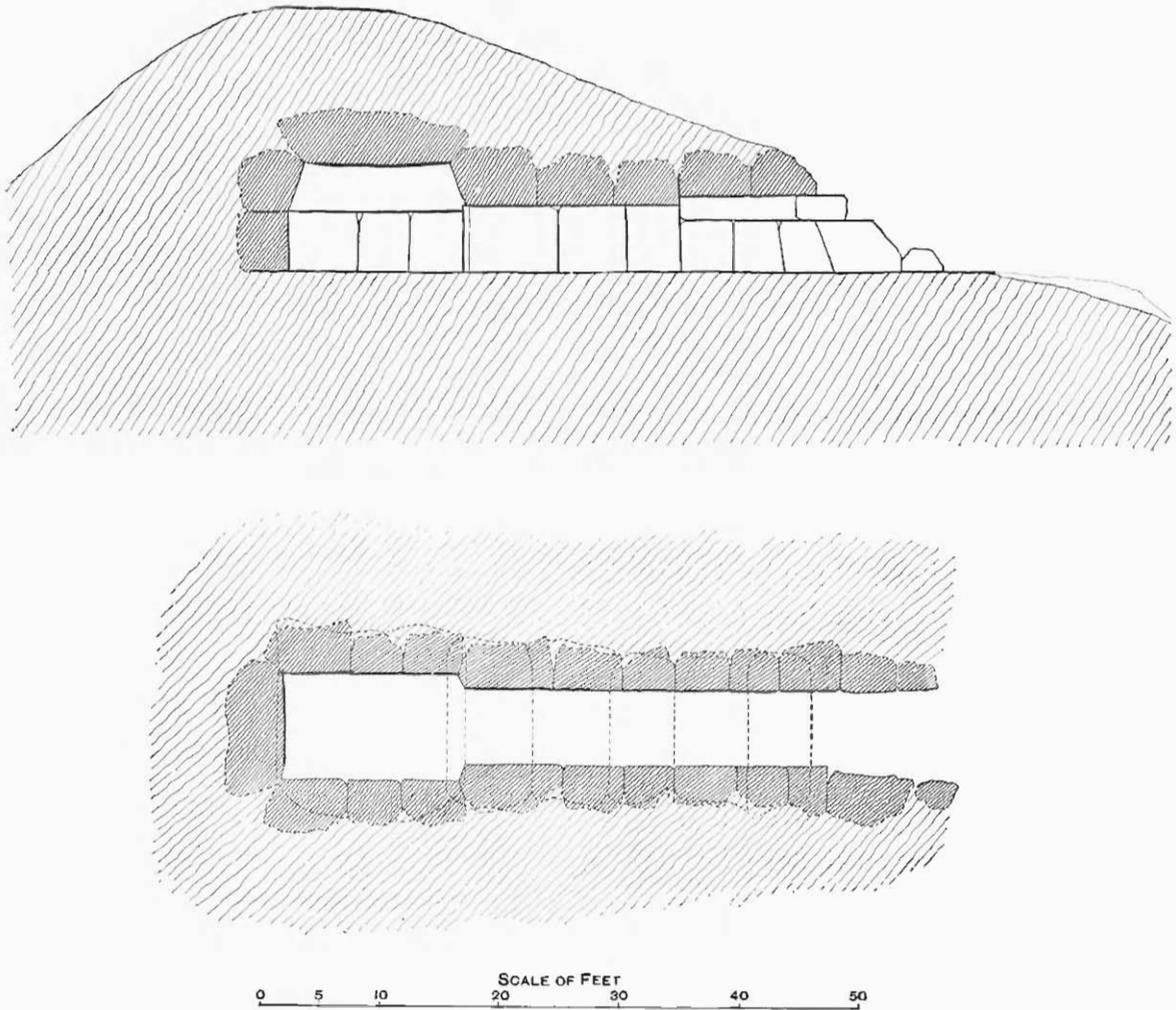


Fig. 13. Dolmen of hewn stones at Koshi (Yamato).

Saimei (died 671 A.D.); but since that time it has not been recognised as an imperial tomb.

A more magnificent example of hewn megalithic masonry, unequalled by any other in Japan for its admirably dressed and perfectly fitted stones, is a dolmen (Table I. No. 127) at Koshi (Yamato) (figs. 13 and 6), about a mile to the south-east of that last described. It is contained in a conical mound with two

terraces now much cut away on one side to accommodate some of the houses of the hamlet and on the other encroached on by fields. Originally the mound was not less than 160 feet in diameter. Its height is 36 feet.

The dolmen is entered from the upper terrace, which is on the same level as its floor. Its total length internally is 44 feet, but the gallery is prolonged 7 feet further without a roof. The chamber is 15 feet long, 8 feet 10 inches broad, and 8 feet 10 inches high, and the gallery 36 feet 7 inches long, 6 feet 5 inches broad, and at the entrance of the chamber 5 feet 6 inches high. At a distance of 17 feet 10 inches from the chamber there is a step of 8 inches in the roof of the gallery, a feature seen also in some rude stone dolmens, against which a barrier of some kind was fixed to prevent access to the chamber but still allow sufficient space in the outer part of the gallery for the performance of ceremonial rites.

The structure of the interior is also illustrated in fig. 6, representing the gallery.

The stones, which are granite, are very skilfully cut and dressed on the sides presented to the interior of the dolmen, but their backs are as usual left in the rough state.

The roof of the chamber is a single huge block similarly cut, and measuring about 14 feet 6 inches long by 11 feet 6 inches broad.

No local tradition or any imperial or heroic name are attached to this dolmen. The villagers say that it once contained a stone sarcophagus, but they had never heard of any pottery or other remains having been found in it. It is now used by a farmer as a store house, and has been swept out from time to time, hence a most minute search failed to reveal anything to give a clue to its age. Its well-hewn masonry removes it far from the early part of the dolmen age, for many centuries must have been required for the evolution of such a perfect structure from the rudely built dolmens of that time, and would seem to place it not far from the close when dolmen building had reached its utmost development.

Another dolmen (Table I. No. 128) of hewn stones, at Abe-mura (Yamato), probably represents the decadent period in the dolmen building age, as in the construction of the walls of the chamber, which are built of small squared blocks in regular courses, it exhibits a complete departure from the traditions of the early dolmen builders. In fact, the only features it possesses in common with the older structures are the megalithic character of its gallery, and the ponderous stone which forms the roof of its chamber.

We now reach the last of the chief classes of dolmens.

CLASS IV.

These dolmens are of a more elaborate form than those of the other classes. They are, however, contemporaneous with many of simpler plan and are, I believe, of earlier date than the hewn stone structures we have just considered. All I have found are, with one exception, constructed of rude undressed stones.

In these dolmens there are two distinct chambers, one behind the other, as well as an entrance gallery.

The outer chamber appears to have been generally used for the performance of the funeral rites, or of subsequent ceremonies in honour of the dead who were placed in the inner chamber, although in the example described below there is a sarcophagus in it also.

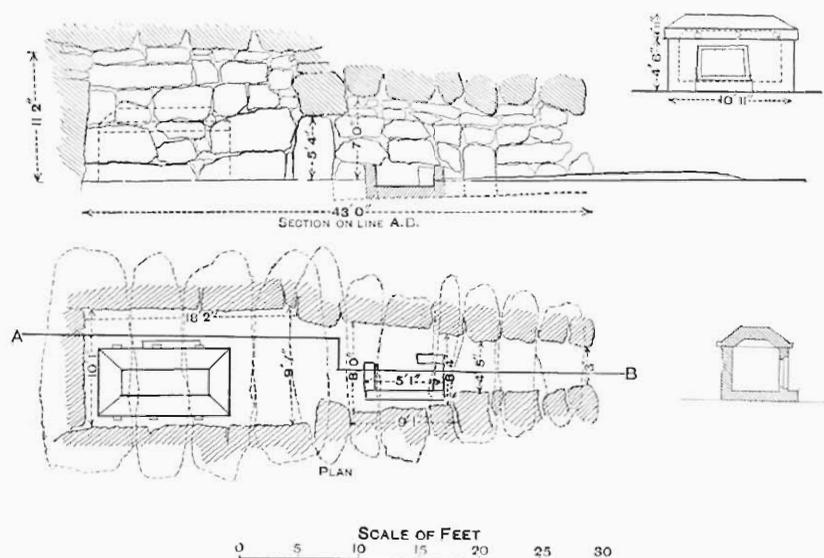


Fig. 14. Dolmen containing two stone Sarcophagi at Imaichi (Izumo).  
With Elevation and Transverse Section of largest Sarcophagus.

These double chambered dolmens are of rather rare occurrence, and in all the districts I have explored I have only found six, viz.: one in the central provinces at Hattorigawa (Kawachi), three near Kuroda (Buzen), and two near Imaichi (Izumo).

One (Table I., No. 36) near the Buddhist temple Dainenji in Imaichi (Izumo), is represented in sectional elevation and plan in fig. 14. It is contained in a large double mound 42 feet high, much weathered and cut away, yet traces of two terraces can be distinctly seen. Originally the mound must have been about 300 feet long.

The dolmen lies as usual under the round peak but in an abnormal position, being in a line with the long axis of the mound instead of at right angles to it. The only other example of a dolmen lying in this direction is that at Teraguehe, already described. It is constructed rudely of rough unhewn stones.

The total length is 43 feet, and its breadth, which is 10 feet at the inner extremity, diminishes to 3 feet at the entrance. The inner chamber, which is the most capacious, has the following dimensions: length, 19 feet; breadth, 9 feet 9 inches; height, 11 feet 2 inches. Placed longitudinally in it is a huge sarcophagus (fig. 14), hewn out of a single block of hard volcanic tuff, measuring internally at the top 9 feet long by 3 feet  $7\frac{1}{2}$  inches broad, at the bottom 9 feet 4 inches long, 4 feet 5 inches broad, and 3 feet 6 inches in depth. Its cover is of the usual roof-shaped form, with projecting lugs, and is 1 foot 11 inches thick.

This sarcophagus is the largest I have found, and is remarkable also for the curious opening hewn in its front side. The opening is 4 feet 4 inches long by 2 feet 4 inches high, and is recessed to receive a slab by which it was closed. Below it the bottom of the sarcophagus projects in the form of a step, upon which the slab rested. This peculiar feature is seen in three other sarcophagi (Table II. Nos. 8, 9, and 10), in dolmens not far distant, and seems to be confined to the province of Izumo, as it has not yet been found elsewhere.\* As to the purpose it can have served I am unable to offer any explanation. It is too large to be intended for the introduction of offerings of food, or for the egress or ingress of the spirit of the dead.

The outer chamber is much smaller than the inner, being only about 10 feet long, 9 feet high, and tapering in breadth from 8 feet at the inner end to 6 feet 4 inches at the other. It also contains a sarcophagus (Table II. No. 5), but this is constructed of hewn slabs, and its interior only measures 5 feet 1 inch long, 2 feet 5 inches broad, and 1 foot 10 inches deep. This dolmen was opened in A.D. 1825, when a large quantity of metallic remains were taken out of the large sarcophagus, and many vessels of pottery from both chambers. The metallic objects were straight iron swords, iron spear and arrow-heads, check pieces of horse bits, and horse ornaments of iron plated with copper. Several of these, which are still kept in the temple, I examined carefully, but found nothing either in their shapes or ornament to distinguish them from the objects found in single-chambered dolmens.

Two dolmens (Table I. Nos. 13 and 14) of magnificent proportions, of the same type and similar structure as the last, are situated near the village of

\* For apertures in terra-cotta sarcophagi, see fig. 15.

Kuroda (Buzen). One, which is slightly larger than the other, alone will be described.

There is nothing special about its mound, which is a simple conical one, abutting against the end of a low spur. The total length of the interior of the dolmen is 68 feet 6 inches, and for a distance of 45 feet 6 inches from its back wall it is roofed with stones of large size. Rude megalithic blocks form the walls of the chambers, and somewhat smaller stones those of the gallery. The dimensions of the inner chamber are: length, 10 feet 9 inches; breadth, 10 feet 8 inches; and height, 12 feet. A granite sarcophagus (Table II. No. 2) hewn out of a single block is placed transversely near the back wall. The outer chamber is much smaller than the other, only measuring 7 feet 4 inches long, 7 feet broad, and 11 feet 7 inches high. According to local tradition, it is the tomb of Haya-hime, a princess of the time of the Emperor Keikō (71 to 130 A.D.), the ruins of whose palace are said to occur on the high ground bordering the neighbouring valley. The valley bears the significant name *Gosho-ga-tani*, i.e. the "valley of the palace." The dolmen unfortunately afforded no evidence of its age, as it had been completely rifled, and nothing is known of the objects it contained. All I found in it was a small fragment of a sepulchral vessel of ordinary dolmen pottery. That the district was an important one during the dolmen age is attested by the numerous dolmens, more than a hundred, which are scattered over it.

One of the groups contains the smallest double-chambered dolmen I have met with, its total length being only 16 feet.

Besides these four great classes of dolmens there are several examples of other forms, but most of these may be regarded as mere modifications of them.

A few, however, are of a special character.

One of the most interesting, a modification of Class III., is a dolmen at Rokuya, near Kameyama (Tamba) (Table I. No. 105). The chief peculiarity in its construction is the massive rude stone shelf which projects from the back wall and extends across the whole breadth of the chamber. It is particularly characteristic of the group which occurs near this village, and is rare, although not altogether unknown elsewhere.<sup>a</sup>

The shelf of this dolmen projects 5 feet 3 inches from the back of the chamber, is 1 foot 1 inch thick, and 2 feet 8 inches above the floor. It is built into both

<sup>a</sup> I only know of three dolmens with a similar shelf in other provinces, viz.:

At Yamanouchi, province of Chikugo.

At Asada, province of Chikugo.

At Ifanda, province of Awa (Island of Shikoku).

the sides and back walls. In a similar dolmen of this group a long narrow slab of rough stone about 10 inches high is set up across the floor below the edge of the shelf, forming a cist-like space under it. This space was covered with a layer of selected pebbles of black slate, which had been brought from the bed of a river about a mile distant. Upon this layer were lying remains of human bones, beads, and other personal ornaments. This rude arrangement was hence evidently intended to serve the purposes of a burial-cist. In point of antiquity, it might seem at first sight to belong to a very early time in the dolmen age, preceding the use of hewn stone sarcophagi, but the splendid and highly wrought metal objects found on the shelf and in the chamber indicate a much later period.

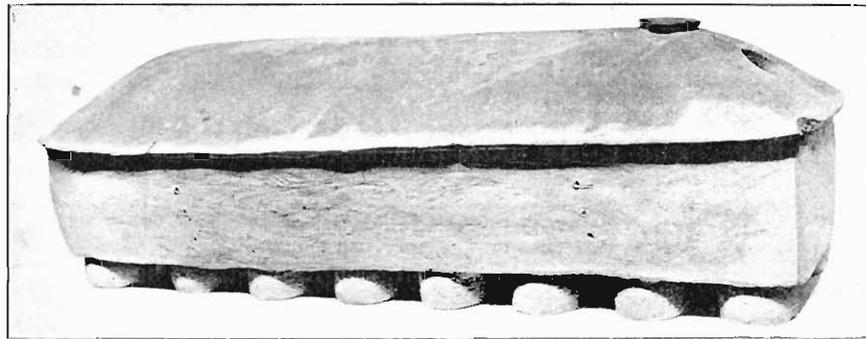


Fig. 15. Terra-cotta Sarcophagus from a Dolmen at Sakuraidani (Settsu).

Another is a dolmen (Table I. No. 68) of unique form which I discovered at Dōmyōji-yama (Kawachi), an external view of which is given in Plate XXXIX. fig. 2. The greater part of its mound has disappeared, and probably also part of its chamber, as the steep slope of granitic detritus on which it is situated has suffered much from weathering.

It consists of a megalithic chamber about 12 feet long by 5 feet 3 inches broad, with a cist, extending behind its back wall, still nearly covered by the remains of the mound. This cist is built of large blocks of stone so hewn and fitted together that they form a long well-shaped nearly rectangular cavity. Its dimensions are those of an ordinary sarcophagus, viz. length 6 feet 2 inches, breadth 2 feet 3 inches, depth 2 feet 9 inches. It is open only at the end next the chamber, and here there are remains of a shallow recess into which the stone closing it was fitted.

On the same hills are several cists (Table I., Nos. 66 and 67) without dolmens, but they are all of a common type, long, narrow chambers built of small stones, roofed with small rough slabs, and generally only covered with about a foot of

earth. They have all been plundered, and I have never found anything in them excepting fragments of dolmen pottery.

Besides sarcophagi of stone, others of terra-cotta, as I have stated above, also occur in dolmens.

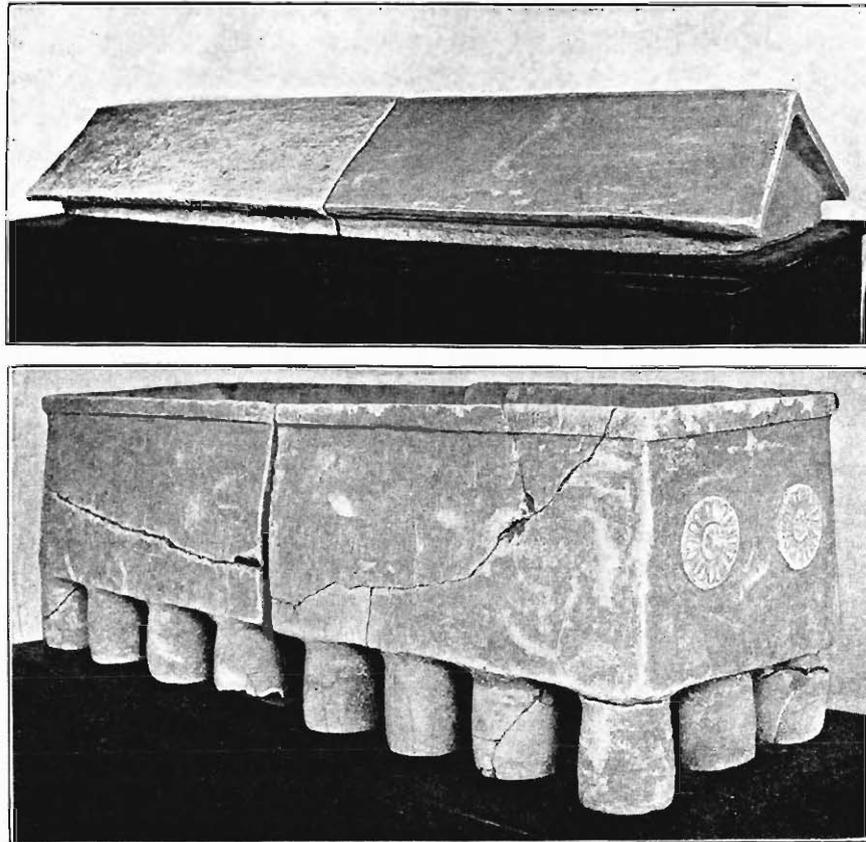
In fig. 15 is represented one which I was fortunate in obtaining shortly after it had been taken out of a dolmen at Sakuraidani (Settsu);<sup>a</sup> it is now in the British Museum. It is of unusually small size, its internal measurements being: length 4 feet 9 inches, breadth 1 foot 4 inches, depth  $7\frac{1}{2}$  inches. Its sides are about 1 inch in thickness. It stands on eighteen hollow cylindrical feet, and each of its long sides is pierced with six small holes. The cover is rudely roof-shaped and at each end there is a circular hole  $3\frac{3}{4}$  inches diameter, into which the flat stopper shown in the figure was fixed (fig. 15).

When this sarcophagus was opened, it is said, that it contained nothing but earth and there was nothing else in the dolmen, but neither it nor the chamber was carefully examined, as the chief object in destroying the dolmen was to obtain stones for the foundation of the neighbouring temple. Internally it bears the markings known as *Chōsen-guruma* or "Korean wheel," which will be described later.

The finest terra-cotta sarcophagus which has yet been discovered is that shown in figs. 16 and 17. It was found near the village of Isokami in Bizen, and is now in the Imperial Museum, Tōkyō, and the only records there, are that it was taken out of a burial-mound, so that whether the mound contained a dolmen and this sarcophagus was in its chamber is not definitely known, but from its construction, having eighteen feet like that last described, it was evidently, I think, intended to be placed on a flat surface such as the floor of a dolmen, and not to be simply buried in a mound of earth. It is constructed in two pieces and measures internally: length 5 feet  $1\frac{1}{2}$  inch, breadth 1 foot 7 inches to 1 foot  $9\frac{1}{2}$  inches, depth 1 foot 2 inches; its sides being  $1\frac{1}{2}$  to 2 inches thick. The two medallions on one end of the coffin are of special interest. They are 5 inches in diameter, and are the earliest examples of the use of a crest or badge which have survived. The device resembles a flower with eight double petals, forming sixteen rays closely analogous to, but still differing from, the chrysanthemum badge of the Imperial family.

<sup>a</sup> On the sites of several ruined dolmens of the same group, I found remains of three similar sarcophagi and in the chamber of a dolmen about two miles distant fragments of another. I also discovered the feet and parts of the covers of two in rock-hewn tombs near Kokubu (Kawachi).

Burial in stone sarcophagi, in both simple and double non-dolmen mounds, was occasionally practised, as I have already stated. The most notable example<sup>a</sup> I have found is a mound near Dōmyōji (Kawachi), on the summit of which a stone sarcophagus of the ordinary type is nearly completely exposed, and fragments of another are lying alongside it. Its dimensions are given in Table II. No. 17.



Figs. 16 and 17. Terra-cotta Sarcophagus and Cover from Isokami (Bizen).

This sarcophagus is said to have been always in this exposed position with its broken cover, yet on carefully clearing it out I found a small glass bead and a little vermilion, which showed it to be contemporaneous with the dolmen period.

The mound is 132 feet in diameter and 23 feet high.

This mode of burial continued to be practised for some time after the dolmen period, and certainly up to 705 A.D. as in a sarcophagus which was found in a large mound at Tennōji, near Ōzaka, a vessel of gilt bronze bearing that date was found.

<sup>a</sup> For others see Table II. Nos. 18 and 19.



MAP OF  
**JAPAN**  
 showing the  
 DISTRIBUTION OF DOLMENS  
 BURIAL MOUNDS AND ROCK-HEWN TOMBS.

- π Group of Dolmens.
- ▲ Rock-hewn Tombs.
- + Double Mounds.
- Simple Mounds.

Scale of Miles.  
 0 20 40 60 80 100

PART II. — THEIR CONTENTS AND AGE.

IN most European countries rude megalithic dolmens are associated with a rude stage in the civilisation of the races by whom they were built. The remains found in them are few, and where they occur they are mostly of stone or bronze, and rarely of iron. But in Japan all the dolmens, even the rudest, belong to the iron age. Stone and bronze weapons, with the exception of bronze arrow-heads, are entirely absent from their chambers, and the use of these materials only survives in objects for personal ornament, and for the purposes of decoration.

The Japanese, indeed, during their dolmen age had reached, as we shall see from the extensive remains they have left us of their work, a very high stage of civilization; they were expert metallurgists and workers in metals, skilful as potters, and had even then developed those artistic traits for which in later times they have become so distinguished.

When a warrior was laid in these rude stone chambers of the dead, his wants in a future world, where he was supposed to continue his existence, were supplied in unstinted measure. He was clothed in his robes, adorned with his personal ornaments, his implements of war and of the chase, and the bits and trappings of his horse were all placed near him. Around and at the entrance of the dolmen chamber were arranged offerings of food, water, wine, and flowers, in vessels of pottery, some of which are of elaborate forms. The remains found in dolmens which I have unearthed myself, and those which I have examined in the Imperial Museum, Tōkyō, and in the hands of collectors in the dolmen districts I have visited, are so numerous, that it will only be possible for me, within the limits of this paper, to deal with one or two of the chief finds, and such of the representative specimens in others as will be necessary for a clear comprehension of dolmen burials.

First in importance are the human remains.

During the dolmen period the bodies of the dead were not cremated,<sup>a</sup> and there

<sup>a</sup> Cremation in Japan only dates from the establishment of Buddhism in the country (sixth and seventh centuries, A.D.), and the first of the imperial line whose body was burned before burial is said to have been the Empress Jitō (d. 702), but this is rather doubtful. However, in 840 A.D., the body of the Emperor Junna was undoubtedly cremated, and it is worthy of note in connection with the rites as then followed, that the cremation did not take place near the tomb but about three miles distant, and that two mounds, both of which I visited, were erected to his memory, one to mark the site of the cremation and the other the spot where the ashes were buried.

are the strongest grounds for believing that in the still more remote times of the earliest simple burial mounds inhumation alone was practised.

Unfortunately no well or even moderately preserved skeleton has yet been found in any dolmen. The damp atmosphere of the chamber and the free infiltration of water through the spaces between the stones in both walls and roof appear to have been most destructive to bone, removing nearly the whole of its organic matter and resolving it into bone earth. So much so, that when human bones are found they are always in such a state of decay that they can be rubbed to powder between the fingers, and occur in such small fragments that so far it has not been possible to obtain any useful measurements.

Even the bony parts of the teeth I have found to be entirely destroyed, the enamel of the crowns alone being preserved as thin hollow shells.

Generally the dead appear to have been laid on the floor of the chamber, but, as we have already seen, burial in sarcophagi of wood, stone, or terra-cotta placed in the dolmen was also practised.

When the sarcophagus was of stone it might be supposed from its closely fitting cover that the bones would not have perished. Most, however, have been rifled in bygone times, and in the few which have been opened during recent years no bones are said to have been found, so that in these also the bones had decayed and were in the form of earth or very small fragments.

As a rule only one burial,<sup>a</sup> or at most two took place in each dolmen. The exact position in which the body was placed has only been determined in a few cases, and in these the head lay towards the south and the feet to the north.

In a dolmen at Shiba (Kawachi), which I explored, the remains of a wooden sarcophagus were lying on the floor of the chamber in a north and south line. One or two fragments of skull were at the south end, and the greatest number of cylindrical jasper beads and two curved beads, usually worn together as a necklace, were also found in the same position. The contents of this dolmen had, however, been partially disturbed, yet, notwithstanding this, I think it is almost certain that the body was laid with its head to the south.<sup>b</sup>

<sup>a</sup> In an *allée couverte* in Shimotsuke explored by Professor Tsuboi, a most indefatigable archaeologist, the remains of fourteen bodies were found, probably a chief with the members of his family or retainers, the skulls and other bones being in a fragmentary condition and all intermingled. This case may be regarded as an exceptional one, as the testimony of the metallic remains found in dolmens, where the bones have been destroyed, is all in favour of the view, that not more than one or two persons were buried in each.

<sup>b</sup> In two rock hewn tombs in Buzen, very early in the dolmen period, the skull lay towards the entrance (south) and the feet towards the back.

In a dolmen explored by Professor Tsuboi, at Ashikaga (Shimotsuke), containing a single burial, the teeth and pieces of the skull were at the south-west side, and the bones of the feet at the north-east of the chamber, the body in this case being laid transversely near the back wall. On the other hand, in a stone sarcophagus which I opened in a mound of post-dolmen times in Kawachi, the skull was at the north end.

The position of sarcophagi in dolmens does not aid us in determining whether the body was buried with its head to the south or north, and, as I have already stated, there are no satisfactory records of bones having been found in them. Out of twenty-three which I examined sixteen lay in a north and south direction, so that we may conclude that generally the dead were placed in a north and south line.

The remains found in the early simple mounds are weapons of bronze, sometimes associated with personal ornaments of stone.

No very precise records have been kept of the conditions under which they were found, or whether any pottery was associated with them, as they have generally been unearthed during agricultural operations. The swords occur only in those portions of the islands in which the Japanese first settled, thus they are most numerous in northern Kyūshū, a few have been found in some of the provinces on the shores of the Inland Sea, but none further east. They have never been found in dolmens. (See map, Plate XL.)

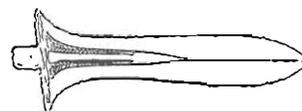


Fig. 18. Bronze Sword.

In fig. 18 is represented one of these bronze weapons. In this form of sword, or probably halberd, the blade, which is 1 foot 2 inches long, is two-edged, is strengthened by a central ridge and two converging ribs, and cast with a short tang for the attachment of a hilt or handle.



Fig. 19. Bronze two-handed Sword.

A more common form is illustrated in fig. 19.<sup>b</sup> In this both blade and hilt are cast in one piece. Its total length is 2 feet 9 inches and its breadth  $4\frac{1}{2}$  inches.

<sup>a</sup> See Evans's *Ancient Bronze Implements*, 262 et seq.

<sup>b</sup> From a paper by Mr. T. Kanda (formerly Governor of the Hyōgo Prefecture) on "Ancient Bronze Swords," *Bulletin of the Tōkyō Anthropological Society*, April, 1886, p. 39.

The casting, however, is in the rough state, and possibly, when finished, the blade might be slightly diminished in breadth. Yet it would still be a rather unwieldy weapon, although from its length of its hilt,  $10\frac{1}{2}$  inches, it was intended to be used as a two-handed sword.

About forty-five of these bronze weapons, with two or three of less common forms, and four stone moulds which were used in casting them, have been unearthed.

The bronze arrowheads are of the shapes illustrated in fig. 20, and their use survived during part of the Iron Age. Specimen *a*<sup>a</sup> was obtained from an early mound in Yamato, *b*<sup>b</sup> from one of later date in Kawachi, and *c* from a double mound in the same province. The locality of the still later form *d*<sup>c</sup> is unknown.

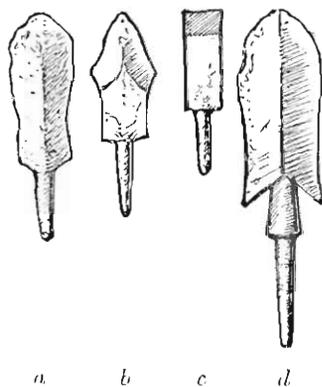


Fig. 20. Bronze Arrow-heads.  
† linear.

No bronze celts have yet been found in Japan.

Before proceeding to consider seriatim the various objects, which, according to the beliefs of the early Japanese, were held to be necessary for the wants of the dead in the spirit world and were buried with them, I will first give an account of the contents of a dolmen which I explored in the village of Shiba (Kawachi).

The dolmen has already been described. On entering the chamber through a gap below one of the roof-stones, the sides and roof were seen to be thinly coated with a red powder, as if they had been dusted with it, and the stones of the floor were afterwards found to be similarly covered.<sup>d</sup> The floor was entirely covered with fine earth, which had penetrated through the crevices in the roof and walls and had accumulated to the depth of from 6 to 10 inches. There were several footprints on the surface, as some government officials had visited the dolmen shortly before me. They took away one or two fragments of pottery which were exposed. The farmer, too, on whose ground it was situated, had also been in it and removed some things, but these I afterwards obtained from him. The chief contents, however, being protected by the layer of earth, escaped discovery.

<sup>a</sup> British Museum.

<sup>b</sup> British Museum.

<sup>c</sup> From a paper "On Ancient Bronze Arrowheads," by Kanda. *Op. cit.* ii. 124.

<sup>d</sup> An analysis of the powder showed that it consisted of ferric oxide and contained no vermilion, although that substance was found in small quantities adhering to some of the beads and inside one of the covered pots.

In the exploration of this dolmen I made the following arrangements for the determination of the position of any objects which might be found. The floor was divided into twenty divisions by means of a frame consisting of three longitudinal and four transverse laths of bamboo firmly bound together and laid on the surface of the earth. Each division was numbered and had two baskets, a large and a small one, assigned to it for the reception of the objects it might contain.

Beginning with division No. 1, the earth was carefully scraped away in layers and sifted, first through a coarse and then through a fine sieve, in order that nothing, however small, should escape detection; this was continued until the slabs covering the floor had been reached. The other divisions were treated in the same manner. I had hoped by these precautions to be able to determine the original position of every object, but I soon found, from the irregular distribution of some of the beads and fragments of a human skull, that in several places the remains had been displaced. The displacement seemed to be of ancient date, was fortunately only partial, and had not been accompanied by plunder.

A large quantity of decayed wood, in powder and fragments, spread over an area of about 7 feet 6 inches by 4 feet, showed that the body had been buried in a sarcophagus of pine boards placed longitudinally on the floor of the chamber about 1 foot from the east and 3 feet from the north wall. The boards had had a thickness of about  $2\frac{1}{2}$  inches, and had been fastened together with nails having lozenge-shaped heads and other iron fittings.

The collapse of the sarcophagus, when its sides had decayed, may have been the cause of the irregular distribution of some of the objects, such as the horse furniture, arrow-heads, &c. which may have been placed on the top of the cover.

Personal ornaments of metal, many beads of glass and jasper, and arrow-heads were found within the space covered by the decayed wood. These, with the possible exception of the arrow-heads, had been put into the sarcophagus with the body. They were nearly all in the southern half, and the arrow-heads in the northern half of the *débris*, indicating that the body had lain with its head to the south.

A curious feature of the remains which I found in this dolmen is the extraordinary number of beads, 1,108 in all. Of these 791 are of glass, all dark blue, with the exception of a few only, which are green or amber coloured, 17 of silver, 123 of baked clay, 133 of steatite, and 41 of jasper.

There were besides three "curved beads," *magatama*, consisting respectively of chalcedony, rock crystal, and steatite. The glass beads are rudely globular, with ground flat ends, and are perforated with drilled holes. They vary from  $\frac{3}{16}$  inch

to  $\frac{5}{16}$  inch in diameter. Those of baked clay are of similar form and size. The silver beads are mere hollow spheres of extreme thinness of the same size. The steatite beads are smaller than the other, and are in the form of short cylinders about  $\frac{1}{8}$  inch long and  $\frac{3}{16}$  inch in diameter, very rudely fashioned. The jasper beads, which are of the kind commonly called "bugles" (Jap. *kuda-tama* or "tube beads"), are large, well cut and polished cylinders of this hard stone, of a fine green colour, and varying from  $\frac{3}{4}$  inch to 1 inch in length, and from  $\frac{1}{4}$  inch to  $\frac{5}{16}$  inch in diameter. They are pierced from end to end by a carefully drilled hole, sometimes of extreme fineness, and never bear any engraved designs. A variety of these, always made of rock-crystal, resembling in form two truncated hexagonal pyramids placed base to base, with carefully cut and polished faces, is occasionally found, but rarely more than one in each dolmen. Both these steatite and jasper beads are very ancient forms of stone ornaments, and are not seldom found in the early burial-mounds along with arrow-heads of bronze unaccompanied by any objects of iron.

Among the most important of the stone ornaments, never made of metal, and very rarely of glass, are the curved beads called *magatama* (fig. 21).<sup>a</sup> They are of the shape of a comma with a thickened tail, and have a hole pierced through the head, so that they might be strung with cylindrical or other beads to form a necklace. That they were so worn is proved by the representations of such necklaces on the terra-cotta figures



Fig. 21.  
Magatama.  
 $\frac{1}{2}$  linear.

previously alluded to. They are ordinarily about  $\frac{1}{2}$  inch to  $1\frac{1}{2}$  inch in length. A few of much larger size, reaching to 4 inches, have been found, but these must have had some other use. In one find of 52, which I obtained from a mound in Yamato, no other beads were present, so that they must sometimes have been worn alone. They are very widely distributed, having been found in nearly every group of dolmens or mounds in Japan. They also occur in Korea. The stones of which magatama are made are rock crystal, steatite, jasper, agate, and chalcedony, and more rarely chrysoprase and nephrite. The last two minerals are not found in Japan.

The distribution of these various kinds of beads in the dolmen was peculiar. Only one-sixth of the whole were found in the *débris* of the sarcophagus, and

<sup>a</sup> The origin of this ornament has been and is a subject of hot controversy among Japanese archæologists and the most abstruse theories regarding it have been propounded, but it would seem not altogether improbable that it arose in remote times simply as an imitation of the claws of wild animals, which were then strung together as necklaces, and was gradually substituted for them.

these were chiefly in three lots, two of blue glass (100 and 52) and one of jasper (17). Outside the sarcophagus, near the middle of the back wall of the dolmen, was a lot of 507 of blue glass, and between this point and the east wall the silver beads were somewhat irregularly scattered. Along the base of the west wall, about one foot distant from it, were three other lots; one consisting of the whole of the burnt clay beads, another of the whole of the steatite beads mingled with 25 of green glass and 9 jasper bugles, and the third of 41 ordinary blue glass beads. It is difficult to account for this distribution; it may be that the wife of the warrior was laid on the west side of the chamber, but in that case the beads would most probably have been placed on the body as they were worn and their positions are incompatible with this view. On the other hand, the occurrence of two spindle whorls in this part of the dolmen would be in its favour, as they can hardly have formed part of the equipment of a warrior.

No bones excepting two small portions of skull about 1 inch square in a pulverulent condition and the hollow crowns of 19 teeth were found. One piece of skull was near the south end of the sarcophagus, the other, together with 9 teeth, was in the south-west corner of the dolmen. The remaining teeth were in the south-east corner and near the middle of the west side. There were no traces whatever of charred bones, and the fragments of skull and teeth had not been acted on by fire. The burial was in fact long prior to the introduction of cremation.

The warlike weapons which I found in this dolmen were forty arrowheads, a long sword, a fragment of another, and a dagger, all of iron. Most of the arrowheads were found amongst the wood of the sarcophagus, the arrows having been placed originally either on the cover or alongside the body. They are of a rather formidable character (fig. 27).

The other weapons had been laid on the floor of the chamber where they were found. The long sword lay along the side of the west wall near the entrance, the dagger at the opposite extremity of the same wall, and the fragment of a blade against the back wall.

The long sword is 3 feet 5 inches in length (blade 2 feet 10 inches, tang 7 inches), has a straight back and one cutting edge, and is of the form (fig. 24*a*) which, as we shall see later, is characteristic of the dolmen period in Japan. The tang is pierced with three rivet holes for the attachment of the grip.

The total length of the dagger is 10 inches, but it has lost a small portion of both its point and tang.

In several dolmens, in other provinces, swords and spears have been found in

the same positions as these and not on or near the body, but in some containing stone sarcophagi, as at Enya and Imaichi, all the weapons, with the exception of the spears, were found within the sarcophagi.

A horse bit, and several halberd-shaped metal appendages of horse trappings similar to fig. 30*a*, as well as rings, buckles, and other horse furniture, were found in the space north of the sarcophagus and partly in its *débris*. Originally they had doubtless lain on the cover, and had been projected thither when the sarcophagus broke down. In other instances, as at Imaichi (Izumo), the horse furniture was found on the covers of stone sarcophagi, and in the Tamba group of dolmens, on the rude stone shelf below which the body was laid.

The bit, which is in a very fragmentary condition, is furnished with cheek-pieces of iron somewhat heartshaped, similar to fig. 30*d*, and with their outer surfaces ornamented with small bosses.

The halberd-shaped ornaments, of which portions of three were found, are also of iron, but are plated externally with thin sheets of copper coated with gold.

The personal ornaments, other than beads, consisted of four silver finger or ear rings, two silver armlets  $2\frac{3}{4}$  inches in diameter, and two curious slender ornamental rods of gilt copper expanded at one end into flat spatulate heads. Besides these there were numerous fragments of thin gilt copper fillets, unfortunately all so much broken that their original shapes could not be made out. They were mostly decorated with a simple wave-pattern in lines of punched dots. Adhering to their inner surfaces were portions of a woven hempen fabric, which had been converted into oxide of iron and was thus preserved. They doubtless formed ornamental attachments to ceremonial or official robes.

These personal ornaments were chiefly found in the *débris* of the sarcophagus.



Fig. 22. Metal ornament of Horse Trappings.  $\frac{1}{2}$  linear.

Ten curious objects (fig. 22), each about  $1\frac{3}{4}$  inch long, of thin copper gilt and full of decayed wood, were found along with the horse furniture, and may perhaps have been used for the decoration of some part of the trappings of the horse.

The spindle whorls which I have already mentioned are both of steatite; one is plain, but the other (fig. 23) is decorated on its upper surface in incised lines with the simple archaic pattern of a very early age, a series of triangles filled with crossed lines, and on its base with the device shown in the figure.

According to the beliefs of dolmen times the needs of the dead in the other world were of as materialistic a character as in that they had left. Vessels

containing food, water, and wine were hence placed with them in the tomb, and from time to time in after years, were also offered with religious ceremonies on the outside of the burial-mound. I was unable to examine the exterior of the mound of this dolmen on the south side, on which the vessels of the later offerings were usually placed, as it was covered with forest and dense brushwood.

The dolmen chamber yielded sixteen vessels of pottery, several imperfect, but I was able to repair most of them with more or less completeness.

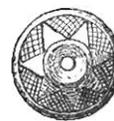
The most important vessel by reason of its size and form is a large tazza (fig. 38*f*). It is 1 foot  $8\frac{3}{4}$  inches high, and is the largest which has yet been found; the only other which approaches it in height being one in the Imperial Museum, Tōkyō (1 foot  $7\frac{3}{4}$  inches high), which was taken from a dolmen in the province of Mino.

The pedestal is pierced with four horizontal rows of triangular, and one row of long rectangular, apertures, and is ornamented besides with a rudely incised pattern of acutely waved lines between the perforations. The bowl is  $15\frac{1}{2}$  inches in diameter, and bears internally the markings known as *Chōsen guruma*, "Korean wheels," which will be described later, and externally two belts of waved lines, one of which has been made with a comb of twelve teeth. This tazza had been placed on the west side of the sarcophagus near its northern end. Close by it, but nearer the back wall, was another of smaller size. Near these large tazzas were three others only 4 inches high; two of which are similar to but smaller than that shown in fig. 38*a*, and have their pedestals pierced with three perpendicular slits, the pedestal of the other being unpierced.

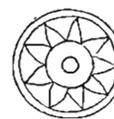
Fragments of eight shallow-covered bowls (fig. 38*b*) varying in size from  $4\frac{5}{8}$  inches to  $6\frac{1}{2}$  inches in diameter and  $3\frac{1}{2}$  inches high were also found, one near each corner at the back of the chamber and the others on the west side of the sarcophagus in the space between it and the wall. This is the most common form of sepulchral vessel and is found in every dolmen group. Bones of fish and of birds are said to be sometimes found in them, but all the above were empty excepting one, which contained a little vermilion.

The large wide-mouthed water vessels which occur in most dolmens are only represented here by two potsherds of insignificant size.

Among the *débris* of the sarcophagus, at its north end, was an unsymmetrical flattened globular vessel resembling fig. 38*l*, with a short neck placed excentri-



Upper surface.



Base.  
Fig. 23. Spindle  
Wheel.  
Diam.  $1\frac{3}{4}$  inch.

cally in its upper side. It is of uncommon occurrence, and was evidently intended to hold water or wine.

The next vessel (fig. 38*k*) was probably used for libations of wine. It is  $5\frac{1}{2}$  inches high, and is in the form of a vase, with a hemispherical base and a wide trumpet-shaped mouth. In one side of its body is pierced a circular aperture sloping downwards. In a few rare examples this aperture is prolonged in the form of a spout; but in all other cases it appears to have had a tube of bamboo inserted in it, through which the wine could be poured.

All this pottery consists of a rather hard-burnt grey earthenware, and has been shaped on the potter's wheel.<sup>a</sup>

The dolmens of other groups have also yielded valuable collections of remains of an extensive and varied character. The most typical objects of these, especially those which illustrate most forcibly the stage to which civilisation had attained during the dolmen period, or which throw some light on the date of its beginning and of its close, will now be considered. Unfortunately, none of the dolmens or mounds which were opened before about 1878 A.D. were explored by competent persons, so that, even in the case of some of the most important finds, neither the positions of the objects, nor even whether they were taken from a simple burial-mound or from a dolmen chamber, have been recorded.

The metal objects, from their special importance, first demand our attention.

**SWORDS.**—Amongst the most important objects in the remains which the dolmens have yielded iron swords occupy a foremost position.

It might be expected that the transition from the bronze to the iron weapon would be gradual and that both would for some time at least be in contemporaneous use, yet there is not a single instance in which both have been found together. It should also be noted that the shape of the iron sword is entirely distinct from that of bronze, and that no intermediate forms are known.

This one-edged sword has one special characteristic, *i.e.* it has a perfectly straight back, and is thus distinguished from the swords of later times, all of which have a slight curvature. It is, in fact, essentially the sword of the dolmen period first appearing at or near its beginning, then dying out and being replaced by the curved blade at its close.

These swords are of two kinds, long and short. The former are most numerous, and the length of their blades from guard to point varies generally from 2 feet

<sup>a</sup> The whole of the remains which I obtained from this dolmen are in the British Museum.

6 inches to 3 feet. The latter vary from 1 foot 8 inches to 2 feet. Occasionally short daggers occur, the shapes of which are derived from the iron and not from the bronze sword.

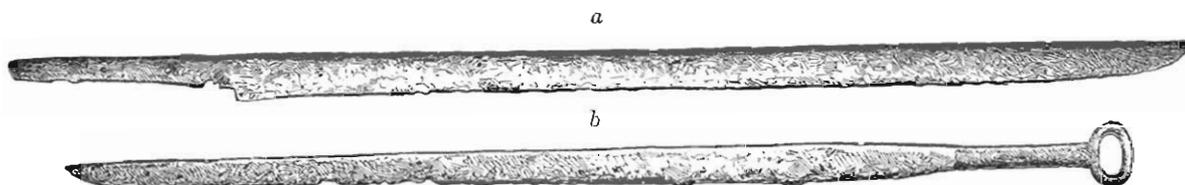


Fig. 24. Iron Swords of the Dolmen Period.

Two typical examples of the long sword are represented in fig. 24.

The sword fig. 24*a* is one of fourteen (eleven long and three short) which were taken from a dolmen in the province of Higo.<sup>a</sup>

The blade is 3 feet  $\frac{1}{2}$  inch and the tang 8 $\frac{1}{2}$  inches long, the total length being 3 feet 9 inches.

A sword,<sup>b</sup> of similar length and shape, I obtained from a dolmen in the Rokuya group (Tamba).

Fig. 24*b* is one of two other swords from the Higo dolmen, both of which are peculiar in having a ring<sup>c</sup> forged at the end of the tang, which had originally been thickly plated with silver. Its length from pommel to point is 2 feet 8 inches.

No guards or scabbards were found with the above swords. The latter may have been of leather or wood, and so have perished. But guards of iron, copper, and bronze have been found with similar swords in several dolmens, yet in almost every case they were fewer in number than the blades. In most dolmens only blades occur; I am hence inclined to believe that it was often the custom to bury unmounted blades, just as in later times they were always so kept when not in use.

<sup>a</sup> The curator of the Imperial Museum, Tōkyō, where these swords are kept, had been unable to ascertain with certainty whether the mound contained a dolmen or not, but from the perfect condition of several objects of delicate workmanship which were found with them, I think they were undoubtedly taken from a dolmen chamber.

<sup>b</sup> In the British Museum.

<sup>c</sup> A sword with precisely the same kind of pommel was found in a dolmen near Ueda, in the far distant province Shinano. Similar ring pommels are seen on ancient Danish swords. Worsaae, *Danish Arts*, p. 151, fig. 187.

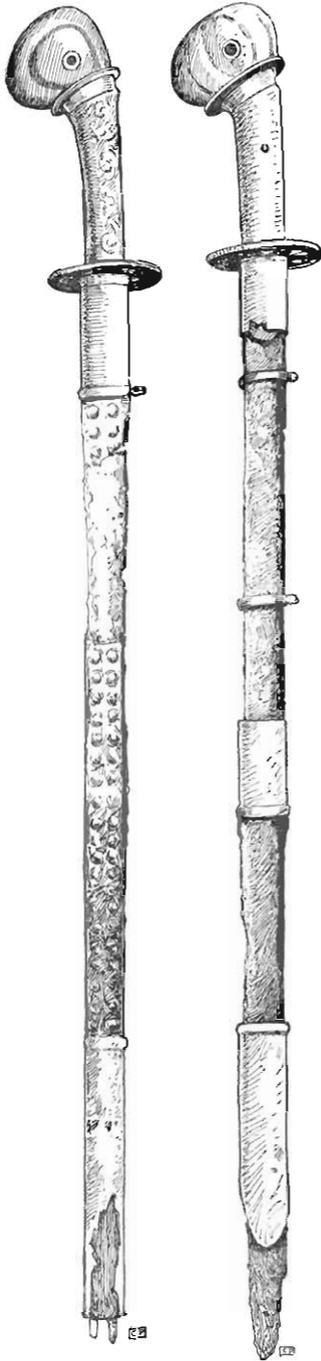


Fig. 25. Swords with ornamental mounts.

Fragments of the metal work of the hilts and scabbards occur among the objects obtained from most groups, but most are so broken up and imperfect that until the discovery in 1880 of two splendid specimens of swords with their furniture almost complete, it was impossible to determine what they had been used for.

These swords are shown in fig. 25. They were taken from a dolmen near the village of Ōmi (Musashi), together with two other swords, remains of an iron helmet and cuirass, a small dirk with silver mounts, many arrowheads, and three gold-plated rings (fig. 33).

The two swords are remarkable for the richness of their ornament. The upper one is 2 feet  $6\frac{3}{4}$  inches long from the guard to the point, and the hilt  $7\frac{3}{4}$  inches. The grip is of wood, enclosed in copper plates coated with gold and decorated with fine punched scrollwork. The pommel is of a curious form, and consists of the same metal expanded into a large bulb-like head. At the junction of the pommel with the grip there is a thin washer which projects beyond the grip, and adjoining it a narrow collar. The guard is also of copper, coated with gold, and is pierced with ten four-sided trapezoidal apertures. Three broad bands and two rings of silver encircle the wooden scabbard, the latter having loops for the attachment of the cords or chains by which the sword was suspended. The other sword is very similar to this, but the body of its scabbard is covered with plates of gilt-copper, which are beautifully ornamented with bosses in *repoussé* work in high relief.

The guard which has been most frequently found with these straight iron swords is shown in fig. 26. This is the typical form of the sword-guard of the dolmen period in Japan, and is not found in later times. It is sometimes of copper or bronze coated with gold, more often of iron, and is generally perforated with these trapezoidal apertures. In a few

rare cases the perforations are circular. Still more rarely the guards are of plain unpierced iron.

These one-edged straight swords, with their peculiar guards and hilts, differ *in toto* from those of post-dolmen times, and are of great importance in aiding us in the determination of the approximate date beyond which the dolmen period did not extend.

Three socketted spear-heads, two of which resemble those of mediæval and later times, were found along with the Higo swords.<sup>a</sup>

IRON ARROWHEADS.—These are of extensive occurrence. They have been found in dolmens of every group which have not been rifled of their contents in bygone times.

Sometimes, as in those of early date from Hyūga, their forms are derived from the more ancient arrowheads of bronze. But generally they are entirely different, and are of decided “iron” forms.

One of the forms of most frequent occurrence is shown in fig. 27.<sup>b</sup> It consists of a double barbed head forged at the end of a round or square stem. Their length is generally about  $6\frac{1}{2}$  inches from the point to the end of the tang, the stem and head projecting about  $4\frac{1}{2}$  inches beyond the extremity of the shaft. Single barbed one-sided heads, resembling the above double barbed form cut in half lengthwise, are also not uncommon.



Fig. 27. Iron Arrowhead.



Fig. 26. Sword Guard of gilt copper. Size  $3\frac{3}{8}$  inches by  $2\frac{1}{4}$  inches.

ARMOUR.—No bronze armour has yet been found in Japan.

Iron armour, too, is by no means of very common occurrence, either in simple mounds or dolmens. It is just possible that it may not have been universally worn, although fragments have been found in all the chief centres occupied by the dolmen builders.

On the other hand, it is certain that its reported absence from some dolmens

<sup>a</sup> Spear-heads are of uncommon occurrence in dolmen remains, probably because spears were the weapons of the ordinary fighting men, and not of the chiefs who alone were entitled to sepulture in dolmens.

<sup>b</sup> British Museum. From the Shiba dolmen.

is due to its having been so much destroyed by rust that, owing to its thinness, it escaped recognition.

I may say here, that in many dolmens the iron objects are completely converted into shapeless agglomerations of rust, in which the forms of even massive objects can only be made out with great difficulty, and in all these armour would have been unrecognizable.

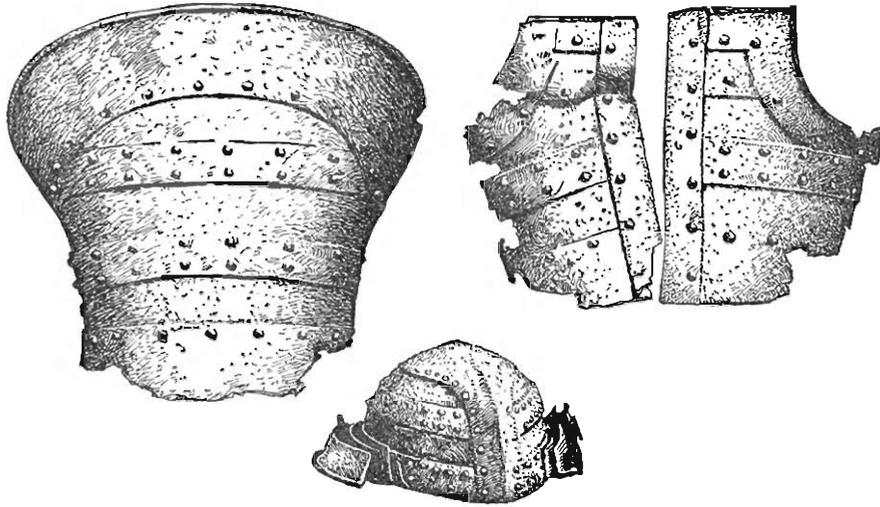


Fig. 28. Iron Cuirass and Helmet.  $\frac{1}{4}$  linear.

In fig. 28 are represented some pieces of armour<sup>a</sup> and a helmet of special interest which were found, together with the swords mentioned above, in the Higo dolmen. The cuirass is formed chiefly of horizontal plates of iron very skilfully forged and riveted together with iron rivets. Another cuirass from this dolmen is in a fragmentary condition, the back only being preserved; it is of the same form as the other, but the plates had been fastened together with thongs or cords instead of rivets. Both cuirass and helmet are entirely different in form and construction from those of historical times, but they agree very closely with the armour represented on the terra-cotta figures which, during the early centuries of our era, were set up around the summits of the tumuli of chiefs and rulers, in place of living retainers who before that time had been buried alive in the same position. An illustration of one of these figures is given in fig. 41. The model-

<sup>a</sup> Along with this armour there were found, amongst other objects, fifty-two beads of blue glass, eleven cylindrical beads of green jasper, and a covered dish all identical with those I obtained from the dolmen at Shiba (Kawachi).

ling, it is true, is somewhat rude, yet it is sufficiently distinct to show that the armour is practically of the same form as the above.

No shields or any pieces of metal or other materials which could have formed parts of them have been found in any dolmen.

**HORSE FURNITURE.**—Of all the metal objects found in dolmens, not even excepting the sword, the bits and other furniture of the warrior's horse are generally the most richly ornamented. Two remarkable examples of horse-bits,<sup>a</sup> with elaborate cheek-pieces, are illustrated in fig. 29. These I obtained from the rude megalithic dolmen, at Rokuya (Tamba). They were found lying on the rude stone shelf which projects from the back wall, and below which the body of the warrior was laid.

The cheek-pieces of the upper bit are flat plates, with a beautiful curved outline. Each consists of a plate of hammered iron, to the exterior of which, in order to protect it from oxidation and for purposes of display, a thin sheet of copper, coated with gold, is attached by means of studs running round its margin.

The lower bit is of similar construction, but of a more elaborate design. Each cheek-piece is in the form of an eight-pointed star in pierced open work and decorated with ornamental studs.

There are several other forms of these cheek-plates, all being more or less decorated, and some having small circular bells of bronze attached to their rims. One of the plainer kinds, made of iron only, which I found in the Shiba dolmen, has been described.

In fig. 30 are represented several other ornamental objects for the decoration

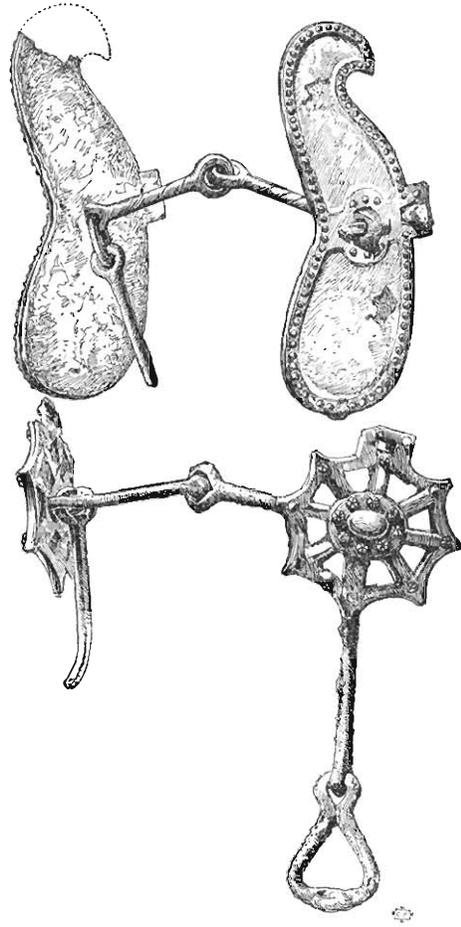


Fig. 29. Horse-bits. Rokuya Dolmen.  
 $\frac{1}{4}$  linear.

<sup>a</sup> British Museum.

of the horse. The most important, *a*, *b*, *c*, *d*, and *e*, consist of flat iron plates, which, with the exception of *d*, are all covered with thin sheets of gilt or silvered

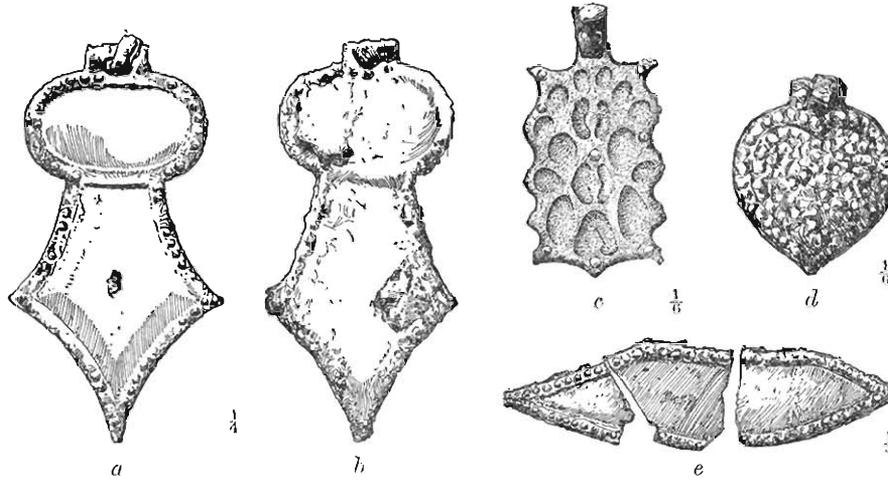


Fig. 30. Ornamental appendages of the Trappings of Horses.

copper in precisely the same manner as the cheek-pieces of the bits just described. These were attached as ornamental appendages to various parts of the harness and trappings. The forms which are of most frequent occurrence, *a*, *b*, and *c*, seem to have been in extensive use during the dolmen period, as they have been found in several groups of dolmens in widely separated districts.

In the figure, *a* represents one of six which were found with the horse-bits (fig. 29) on the shelf of the Rokuya dolmen, *b* one of four from a dolmen at Ryōseki, near Kochi (Tosa), *c* one of two from Shiroishi (Kōtsuke), *d* one from the Shiba dolmen, and *e* one of two from the Rokuya dolmen.

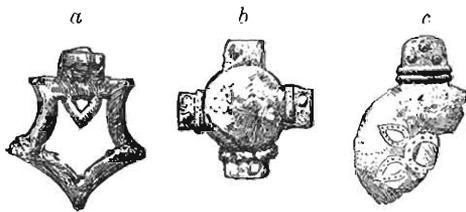


Fig. 31. Other ornaments of Horse Trappings.  
 $\frac{1}{4}$  linear.

The smaller objects, fig. 31, *a*, *b*, and *c*, which I obtained in considerable numbers from the Rokuya dolmen, also occur in most groups, and are identical in structure with the larger ornaments. They appear, from the texture shown by the iron oxide adherent to their lower surfaces, to have been attached, the first to leather straps, and the others to some kind of woven material, probably hemp.

Stirrup-irons are of extremely rare occurrence; only two pairs are known to

me, and they are of the form shown in fig. 32, which represents one from the Higo dolmen.

The manner in which all these objects were used in the equipment of a horse is well illustrated in the terra-cotta figures of horses<sup>a</sup> which, like the images of retainers, were set up on the burial-mounds of chiefs.

ARTICLES OF DRESS.—No articles of clothing of the dolmen period have been preserved. That they consisted of some woven material, probably hemp, is proved by the fragments which I found adhering to many pieces of metal-work from both the Shiba and the Rokuya dolmens. These had survived owing to their petrification into ferric oxide.

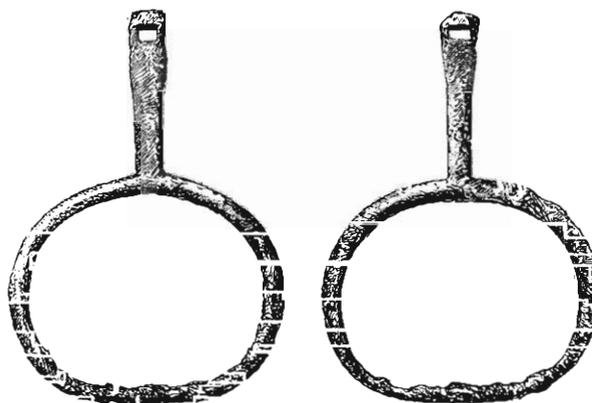


Fig. 32. Stirrup-irons. Extreme breadth  $7\frac{1}{4}$  inches.

The shapes of the garments worn can only be imperfectly made out from the terra-cotta figures mentioned (figs. 40, 41). I may, however, state here that, whatever their shapes may have been, they must have been fastened by means of bands, as pins or fibulæ are entirely absent from dolmen remains.

PERSONAL ORNAMENTS.—These occur in the contents of all dolmens, and consist chiefly of beads of stone and glass, and rings and strips of metal. The various kinds of beads have been already described.

The chief personal ornaments of metal met with are penannular rings of copper or bronze sheathed with gold or silver, beads and rings of silver, and thin copper strips and bands thickly gilt and ornamented with archaic designs. They are generally simple in character and few in number, even in those dolmens which have yielded highly ornamented swords and a profusion of richly-gilt horse ornaments.



Fig. 33. Penannular Ring. Copper plated with Gold.  $\frac{1}{4}$

The copper and bronze rings sheathed with gold or silver, called respectively *kin kwan*, "gold rings," *gin*

<sup>a</sup> An illustration of one of these horses is given in fig. 42.

*kwan*, "silver rings," are more numerous and wider in distribution than most of the other objects. An illustration of one is given in fig. 33. Those coated with gold are the most common, and as many as thirteen have been found in a single dolmen. Usually, however, there are not more than two or three, and then they are accompanied by others of simple copper or bronze. In internal diameter they vary considerably, the smallest being only about  $\frac{1}{2}$  inch and the largest about  $\frac{3}{4}$  inch.

They are all massive and heavy and have been made by covering a round bar of the inferior metals with a sheet or tube of gold, then bending it into the form of a circular ring leaving a narrow space between the ends. They resemble closely certain ancient Irish rings, and like them the junction of the gold sheet along its length cannot be seen, whilst at the ends it is simply rudely bent over and hammered.<sup>a</sup>

The smallest of these rings, which are sometimes but very rarely of solid gold, were probably used as earrings and the larger as finger rings, although some Japanese antiquaries hold that they were attached to the dress. The larger rings are never of solid gold and seldom of silver, and, in fact, objects consisting solely of these metals are extremely rare. This was possibly owing to their scarcity and consequent high value<sup>b</sup> which only permitted them to be used for covering the surfaces of more abundant materials.

The silver beads and rings obtained from the Shiba dolmen are typical specimens of their class so that further description is unnecessary.

Thin plates or strips of copper seem to have played an important part in the decoration of the robes of the dead. They are of frequent occurrence in dolmens, and are always found along with the bones, when there are any, or in that part of the chamber where the body had lain. From the Tamba dolmen I obtained numerous fragments and have also found them in dolmens in other provinces, but in all cases, owing to the thinness of the metal, its excessive oxidation and consequent brittleness, they were all in pieces of minute size. Neither their original shapes nor the mode in which they were attached to the garments could be determined. A careful examination of some of the larger fragments showed

<sup>a</sup> In Korea, at the present day, similar thick and heavy rings of solid silver, with their ends merely buttjointed and not soldered, are extensively worn as finger rings.

<sup>b</sup> Copper also appears to have been a valuable metal, although less so than the foregoing, as it is so often used, as we have already seen, merely for covering iron objects many of which would have been better fitted for their uses and more easily constructed if they had been made entirely of it.

that their upper surfaces were ornamented with archaic designs, generally of a simple geometric character, executed in straight and curved lines of closely punched dots. The method of executing their designs in these lines of dots has, as we shall see later, an important bearing on the age of the objects.

In fig. 34 is shown one of these bands from the Higo dolmen, which is in a more perfect state of preservation than any yet found elsewhere. It is a broad band of copper gilt foil ornamented with a hexagonal net-like pattern executed in the manner just described. The decorative effect is increased by small circular pendants of gilt copper foil suspended by wires from angles of the hexagons. The numerous small perforations which it bears show that it had been attached to the dress by sewing with thread.

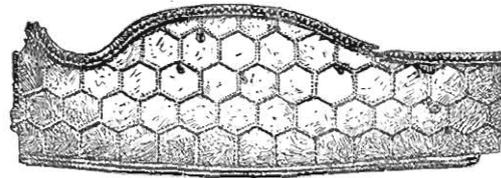


Fig. 34. Portion of a band of gilt copper worn attached to the dress.  
 $\frac{1}{4}$  linear.

Other bands from the same dolmen are ornamented with different designs otherwise they are of the same character.

Some unique specimens of personal ornaments were found along with these bands, the most important being an elaborately decorated tiara of gilt copper, unfortunately much oxidized and partly in a fragmentary condition. In addition to the punched dot decoration, it is ornamented with scroll designs in pierced work. The others are two pendants and two earrings of gold, the former having small beads of enamel-like glass mounted as gems at their lower ends.

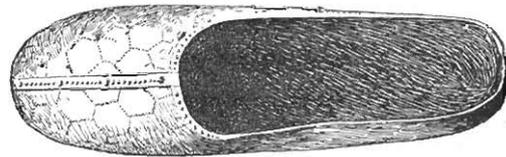


Fig. 35 represents the shoes of the Higo warrior. These are of copper, thickly gilt, and like the band (fig. 34) are ornamented with the hexagonal pattern with pendants suspended from the angles. They are  $12\frac{3}{8}$  inches long, and have spikes projecting from the bottom for the attachment of soles.

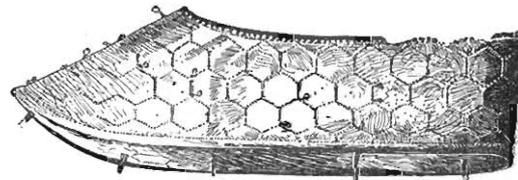


Fig. 35. Shoes of gilt copper.  
 Length  $12\frac{3}{8}$  inches.

Six Chinese mirrors were also found in this Higo dolmen.<sup>a</sup> On one there is an

<sup>a</sup> Similar mirrors, some undoubtedly of Japanese workmanship, have also been found in other dolmens.

inscription but it gives no clue to its date. The curator of the Imperial Museum, Tōkyō, however, is of the opinion, from their designs, that they cannot be earlier than the later Han dynasty (25 B.C. to 220 A.D.), nor later than the Tsin (265 to 419 A.D.). This would make the date of this dolmen not later than the fifth century of our era.

The splendid examples of metal work, some of the most typical of which I have just described, which have been found in the rude stone dolmens of Japan should guard us against regarding similar dolmens in other countries as always the work of uncivilized races.

#### *The Pottery of the Dolmen Period.*

The total absence of vessels of copper or bronze in the remains found in dolmens is noteworthy. It may perhaps indicate that such vessels were not then in use, or, if so, that they were too costly to be buried with the dead. The latter supposition is, I think, not correct, as some of the clay vessels would have been made in imitation of their forms. But no sepulchral pottery of what may be termed "metallic" shapes has ever been found.\*



Fig. 36. Terra-cotta Vase (hand-made). Height, 7½ inches.

All dolmen groups have yielded considerable quantities of pottery, and so many of the vessels of every kind have been found entire, that the custom, of which there is said to be evidence in other countries, of breaking the vessels which had been used in the burial rites, does not seem to have been practised in Japan. The vessels are most numerous in the chamber of the dolmen where the funeral offerings were made, but they are also found in the gallery, and in that case are those which were probably used in ceremonies subsequent to the day of burial. They also occur on the summit of the square end of the double mounds, in which place part of the funeral rites seems to have been performed.

\* The exclusive employment of earthen vessels according to Schrader (*Prehistoric Antiquities of the Aryan Nations*, 367), was long retained in Greece and Italy in matters of ritual and the non-use of metal vessels for sepulchral offerings may be similarly explained. I may add that even at the present day on important occasions the health of the Mikado is drunk in saucers of unglazed earthenware.

Another position in which they are found is the south side of the base of most mounds, where the anniversary ceremonies in honour of departed ancestors were held.

This pottery may be divided into three classes according to the nature of the material of which it is made: I. Lightly burnt Terra-cotta; II. Hard burnt Earthenware; III. Coarse Terra-cotta.

The most ancient vessels which have yet been found are of Class I. They are small wide-mouthed vases of pale reddish brown colour, rudely made by hand (not on the potter's wheel) and are without decoration of any kind.

The specimen shown in fig. 36 was dug up near a simple non-dolmen mound attributed to the Emperor Jimmu<sup>a</sup> at the foot of Mount Unebi (Yamato). It was given to me by the local governor, who was present when it was unearthed. It is  $7\frac{1}{2}$  inches high and 5 inches in diameter.



Fig. 37. Terra-cotta Vessels (wheel-made).

The three other vessels in fig. 37 are of the same material, and although of archaic forms, are all wheel-made and of less ancient date than the above. These I found in a rock-tomb adjoining a group of dolmens near the village of Yasui (Izumo). They were associated with ordinary dolmen pottery.

The pottery of Class II., although of the most varied shapes, is very uniform in its general character. It is usually more or less hard burnt, of a grey colour, never glazed or painted, and almost invariably made partially or entirely on the potter's wheel.

To this class all the typical sepulchral vessels of the dolmen period belong.

<sup>a</sup> According to Japanese records, Jimmu was the first of the Imperial line. (Died 585 B.C.?)

It occurs extensively wherever there are dolmens, and is also found in all groups of the later non-dolmen mounds, but is never associated with stone implements, or with any objects earlier than the Iron Age.

The earliest of this pottery is coeval with the beginnings of dolmen building, which for reasons to be afterwards assigned is not probably later than the beginning of our era. So that the old and oft-repeated legend attributing the introduction of the potter's wheel from China to the priest Gyōgi, who is also said to have been the first maker of this pottery, in the latter half of the seventh century or the first half of the eighth, has not the slightest foundation in fact.

The decoration of this pottery is of a very simple character, and is restricted to the exterior of the vessels. The potter was yet unacquainted with the use of pigments for colouring or painting his wares, and his efforts in ornament were generally confined to arrangements of straight or curved lines scratched in the clay when soft, with a single pointed tool, or with combs with a varying number of teeth. Designs in bas-relief are never found. Not unfrequently, however, figures of birds, animals, and men are rudely modelled on the shoulders of vases, but no incised representations of these, or of designs derived from them, or from plant forms, appear on any vessel. As we have already seen, vessels with pedestals often have these pierced with triangular, rectangular, or circular perforations, which may have been intended as a form of ornament.

Ruder than any of the above are the marks of matting which more or less cover the external surface of some, especially the larger jars. The interiors too of many of the large vessels are often marked with series of concentric circles confusedly overlapping, which have been stamped into the clay when soft. This however is not intended as ornament, but is due solely to the mode in which they have been treated in order to make their sides dense and solid and free from porosity. Thus, whilst the vessel was being gently turned on the wheel, a wooden stamp with concentric circles cut on its head was pressed against the inside, at the same time that the outside was beaten with a flat wooden paddle wrapped in matting. These circular markings are termed by Japanese archæologists *Chōsen-guruma*, "Korean wheels," or *Chōsen-nami*, "Korean waves," because it is supposed by them that they were introduced from Korea. This is an entirely erroneous assumption, as, although I have seen this mode of manufacturing pottery in operation in Korea, yet the pottery of the old burial-mounds of that country never bears these markings, and they are only found on vessels of modern or comparatively recent date.

From my exploration of the sites and rubbish-heaps of three ancient potteries

which I discovered in the province of Settsu, and which from their extent could hardly have been exclusively employed in the manufacture of sepulchral pottery, I am led to the conclusion that many of the vessels found in dolmens, such as the bowls and jars, are not different from those in domestic use at the time. Some of the tazzas, vases on pedestals, and a few other forms, were, however, most probably purely ceremonial vessels.

This dolmen pottery of Class II. may be divided into three groups, viz. :  
1. Food Vessels ; 2. Vessels for Water or Wine ; 3. Vessels for Ornamental Use.

In each group the variations in shape and size are so numerous, that I can only select a few of the chief typical forms for description. Illustrations of these are given in fig. 38.

1. Food Vessels.—These consist chiefly of the following :

Shallow bowls or dishes with covers, usually about 6 inches in diameter and  $3\frac{1}{2}$  inches to 4 inches in height.

Tazzas with and without covers, 4 inches to 9 inches high, but sometimes of much greater size.

Wide-mouthed globular jars, from  $3\frac{1}{4}$  inches to 1 foot 6 inches high.

A description of the shallow bowls, fig. 38*b*, and of the largest kind of tazza, fig. 38*f*, have been given.

In figs. 38*a* and 38*d* are represented two varieties of the smaller tazzas covered and uncovered, both having vertical slits in the pedestals. The form 38*d*,  $7\frac{1}{2}$  inches high, is the most common. They were used for offerings of food, and were placed on the floor of the dolmen chamber on one side of the body, or of the sarcophagus.

The use of tazzas for offerings still survives in ancestral worship at the ancient Shintō temple of Kasuga, at Nara, where they are employed in the daily ceremonial presentations of food in front of the shrine. The tazzas so used there are of the rudest terra-cotta, shaped roughly by hand without the use of the wheel, and, although made at the present day, closely resemble the most primitive pottery of the earliest burial-mounds, in fact they cannot be distinguished from it.

The wide-mouthed jars, of which one is shown in fig. 38*m*, present few features of interest. They are rudely shaped globular vessels, with necks varying in length and form. Their decoration is usually confined to one or two bands of incised undulating lines resembling waves, made with a comb of six or more teeth, around the outside of the neck, the body being more or less covered with marks of matting and the interior with concentric circles. The larger specimens

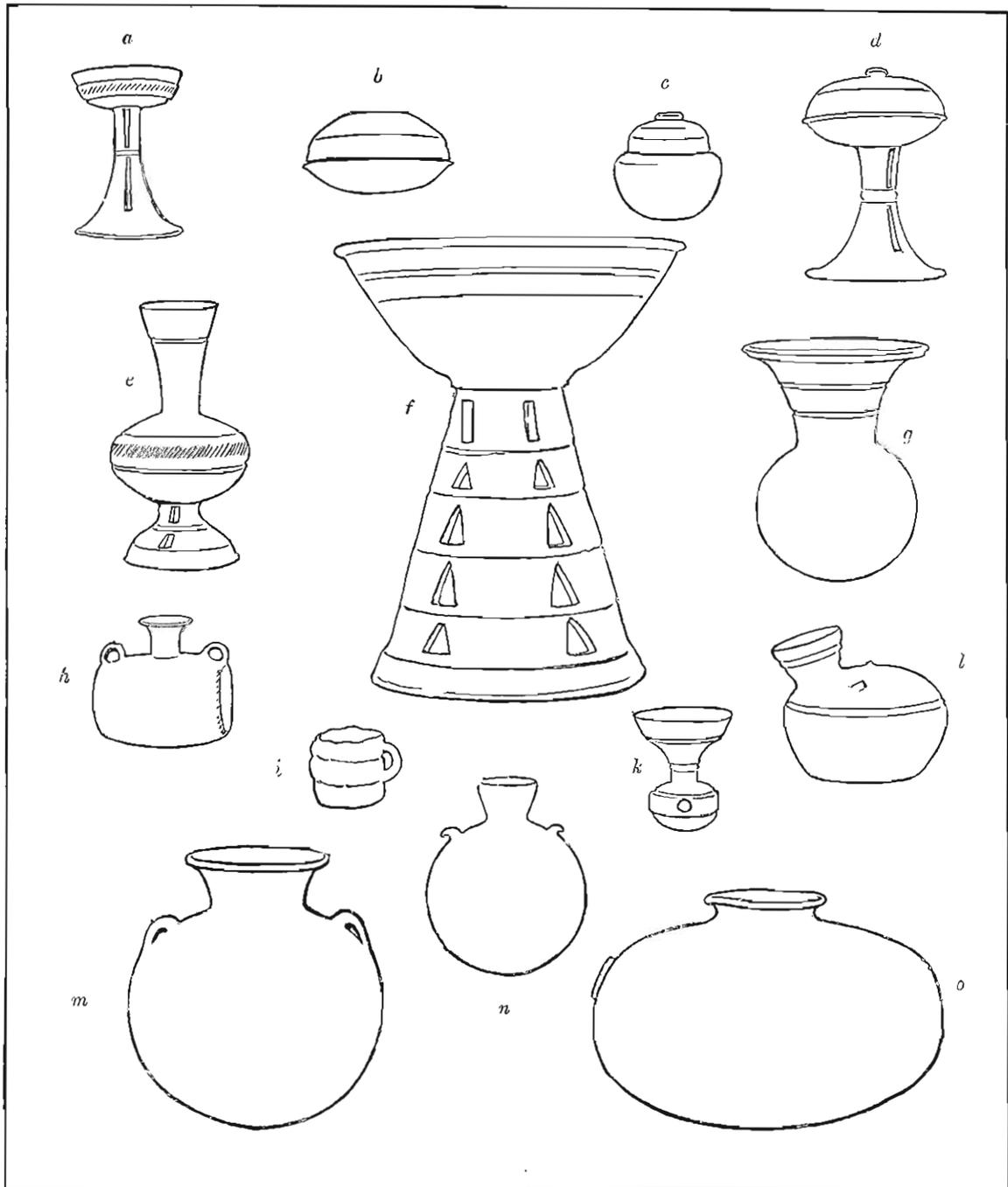


Fig. 38. Chief Types of the Pottery of Class II. from Dolmens.  $\frac{1}{2}$  linear.

may have contained grain or water, but the smaller were also used as receptacles for ornaments, especially for the curved beads (*magatama*).

2. Vessels for Offerings of Water or Wine.—Although some of the jars just described may have been used for offerings of water, yet many dolmens have yielded a special and characteristic form of water vessel, fig. 38o. This is a kind of earthenware barrel with rounded ends and a wide mouth in its side. Its average size is about 1 foot 4 inches long by 11 inches wide. A vessel of precisely the same form, excepting that sometimes one end is flat, is in use at the present day in Seoul, the capital of Korea, for holding and carrying water. Those I saw were inclosed in a slight frame of wistaria stems, with loops above for handling them when they were being filled and emptied. They were carried on the back, resting in a wooden frame. Like the ancient Japanese vessel, they are covered with marks of matting on the outside and with concentric circles on the inside.

The other vessels, bottles, and vases, etc. which were used for water or wine, exhibit an endless variety of forms. One of the most frequently occurring types of the former (fig. 38n) closely resembles the so-called pilgrim bottles of ancient Cypriote pottery, but has mere loops or curved lugs instead of handles. It is of a compressed spherical shape, one side being flat, the mouth being placed in the circumference. They were, doubtless, used as flasks, being bound with wistaria stems or split bamboo, so that they might be suspended from the neck or shoulders.

Another form is shown in fig. 38l. In this, the mouth of the vessel is placed excentrically in the rounded top. The capacity of both these forms varies from half a pint to a quart.

Fig. 38h is a small barrel-shaped vessel, also resembling a Cypriote form, which has been found in several dolmen groups, but is rather uncommon. The specimen is about 8 inches long and has two loops for suspension.

Perhaps more interesting than the preceding are the libation vases, one of which is represented in fig. 38k. I may say that libations of wine are still made before mountain shrines in many parts of Japan, and they form an essential part of certain pagan rites now practiced in Korea.

Besides the above forms, several vessels made in imitation of leathern bottles, with the stitched seams carefully modelled, have been found in the dolmens of northern Kyūshū, to which district they seem to be peculiar.

The convenience of handles and lipped mouths for vessels containing fluids

does not seem to have been recognised by the dolmen builders. On only one kind of vessel, a sort of mug (fig. 38*i*), and this has been found only in Kyūshū, is there a well-formed handle, in all others such rudimentary forms as knobs, lugs, and loops alone occur.

3. Ornamental Pottery.—This embraces all those vessels specially intended for the decoration of the sepulchral chamber, either by reason of their ornamental forms, or for holding offerings of flowers or more probably of sprigs of foliage. Of these there is also an endless variety, especially of vases, many of which are of elegant outline but of the same primitive decoration that we have seen on the preceding vessels. One of the most common, and of wide distribution, is a vase with a long neck and a pierced pedestal (fig. 38*e*). Another of somewhat rarer occurrence has a globular body without pedestal or foot, and a neck expanded into a wide trumpet-shaped mouth (fig. 38*g*).

More elaborate forms also occur but they are confined to the dolmens of chiefs whose rank or power entitled them to specially sumptuous appurtenances of the tomb. They are of marked importance, as the modelled groups of figures with which they are sometimes ornamented afford us a few glimpses of the manners and customs of the early Japanese.

Plate XLI. figs. 1 and 3, represent two of three covered vases which I obtained from the dolmen in Tamba, along with the magnificent horse bits and metal work which we have already described. They are 1 foot 4 inches in height and have pierced pedestals similar to those of the largest tazzas. Four miniature vases are attached to their shoulders. These vessels were found at the side of the cist-like space containing the body.

Another curious form from a dolmen in Kawachi is the triple vase,<sup>a</sup> consisting of three vases fastened together on a pedestal (Plate XLI. fig. 2). At the points interiors of junction with one another a small circular hole is pierced so that their communicate.

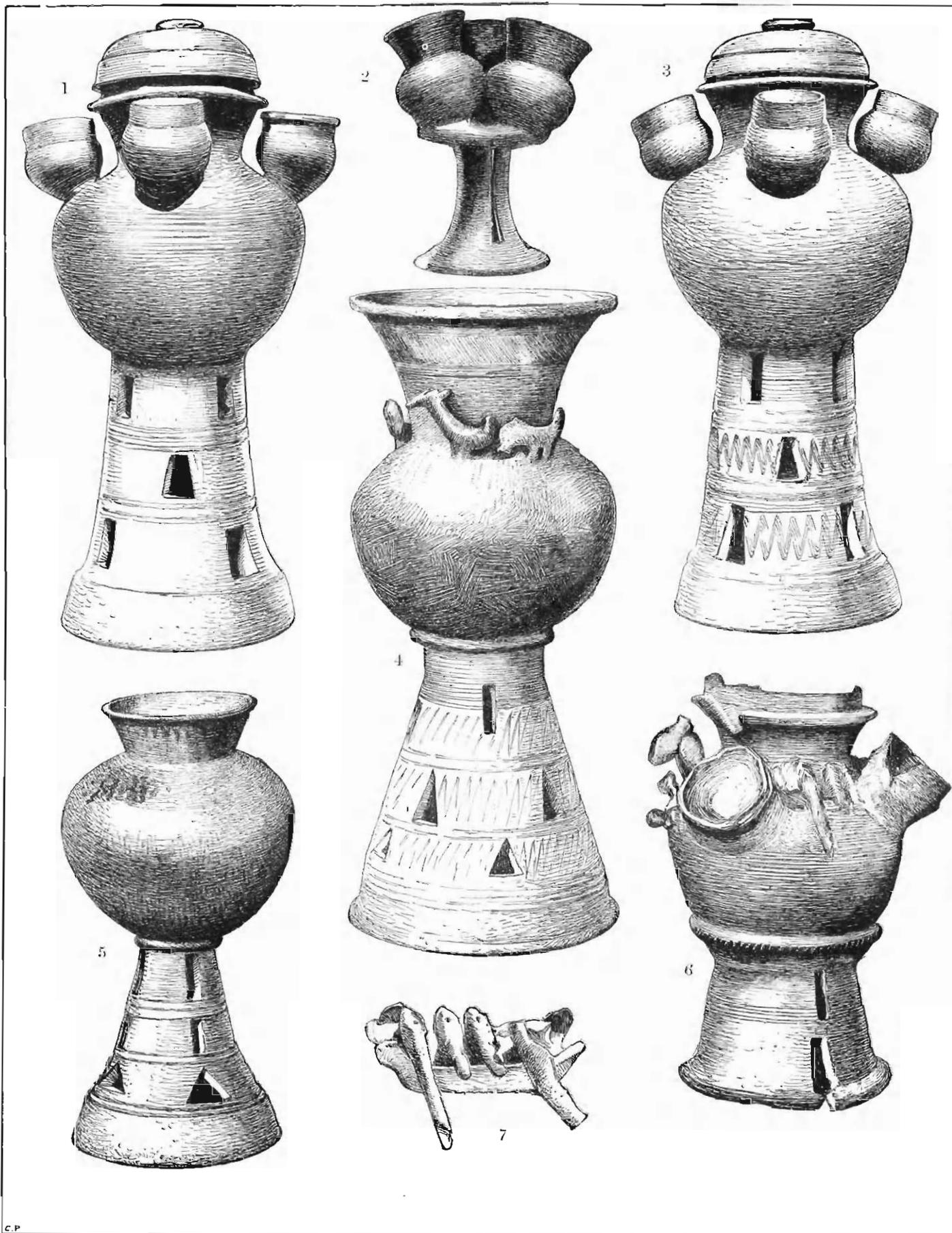
This vessel resembles, both in size and form, one which was dug up by Dr. Schliemann at Troy,<sup>b</sup> excepting that the latter has no pedestal.

The vase,<sup>c</sup> Plate XLI. fig. 6, is from one of the dolmen groups in the province of Bizen. It is 1 foot 1 inch high. On its shoulders there are three small vases and between them, very rudely modelled, are represented a stag and three does, a boar, a dog, and four men rowing in a boat. In fig. 7 the boat is represented half its full size.

<sup>a</sup> British Museum.

<sup>b</sup> *Ilios*, p. 384, fig. 356.

<sup>c</sup> British Museum.



ORNAMENTAL POTTERY.

A. lineas (representing f. 5.)



Another vase<sup>a</sup> (Plate XLI. fig. 4) is from the province of Kōtsuke. Its height is 1 foot 8 $\frac{5}{8}$  inches. There were originally seven figures on its shoulders, three are wanting, the others are a stag, boar, and two birds difficult to identify, all of the same rude modelling as the last.

The vase,<sup>b</sup> Plate XLI. fig. 5, is from the province of Yamato.

Thus far we have seen the ancient potter ornamenting with these modelled figures the same shapes which characterise his less pretentious productions and decorating their surfaces with the same primitive patterns in incised lines.

The next example<sup>c</sup> (fig. 39) shows a marked advance in his art, the body and pedestal are of well-proportioned and even elegant forms, much of the archaic character has been lost, and although the incised line decoration survives, the lines are differently arranged, and the old wave-pattern has gone. This is also from Bizen and from the same department as the last. It is about 2 feet in height and although of coarse grey pottery is a very handsome vessel. On the shoulders we have three small vases, and between two of them are two men engaged in wrestling, and on their right the umpire, whose duty it was to prevent unfair throws. The other groups are imperfect.

Figures of idols are never seen on any of these vessels of pottery; representations of human life, or of animals or birds of the chase alone occur. It is just possible that the scenes shown on them, as those of wrestling, the deer hunt, etc., are intended to represent the sports and pastimes to which the dead warrior was devoted, or in which he had displayed marked skill. Scenes of victories in battle are never found, and their absence during this period of conquest is quite inexplicable. The absence, too, of Chinese motives, such as the tiger and dragon, which were intimately associated



Fig. 39. Ornamental Vase. Bizen.  
Height 23 $\frac{1}{4}$  inches.

<sup>a</sup> British Museum.

<sup>b</sup> British Museum.

<sup>c</sup> Imperial Museum, Tōkyō.

with ancient Chinese sepulchral rites, is curious, and would seem to indicate that China at that period had less influence on Japan than has been supposed.

The coarse terra-cotta objects of Class III. are figures of men, women, horses, etc. and the tubes shown in fig. 11.

Another important feature of some of the ancient burial-mounds and dolmens is the terra-cotta figures which were set up on them at the funeral ceremonies.

Like many other races, the early Japanese practised that curious rite of animistic religion, the funeral sacrifices of men, women, and animals for the services of the dead.<sup>a</sup>

According to Chinese records contained in the *Isho-nihon-den*, translated by Mr. W. G. Aston, these sacrifices were carried on in Japan as late as the latter half of the third century of our era when on the burial of an empress one thousand male and female attendants accompanied her in death. It is just possible, however, if the record is correct, that the case mentioned may have been merely an example of a return to the ancient practice, as terra-cotta figures had been substituted for living retainers long before that time.

According to the *Nihongi* this substitution was made about the beginning of our era, but remains of these figures have been found on mounds which are probably of even an earlier date.

These figures are called by the Japanese *tsuchi-ningyō*, a term merely signifying "clay images." They are made of lightly-burnt coarse terra-cotta, generally red in colour. Owing to the perishable nature of this material when exposed to the action of the weather they would be rapidly destroyed as long as they stood above the ground, and only when by chance they were overturned and became covered with earth was there any possibility of their preservation; hence but few have

<sup>a</sup> In a paper entitled "On the Stone Figures at Chinese Tombs, &c," by Mayers, read before the North China Branch of the Asiatic Society, 12th March, 1878, the following examples of these practices in China are given:

- 678 B.C. Human beings were first slain at the grave of the deceased sovereign Wu Kung.
- 621 ,, At the death of the Emperor Muh Kung 177 were slain.
- 210 ,, At the death of the Emperor She Hwang-ti, concubines who had borne no children and others were put to death.

No other later instances are given, but it is recorded that at the tomb of Hoh K'ü-ping (117 n.c.) stone figures of men and horses were arrayed.

survived, and most of these are in a fragmentary condition. Yet in nearly every dolmen district there are tales of their having been dug up.<sup>a</sup>

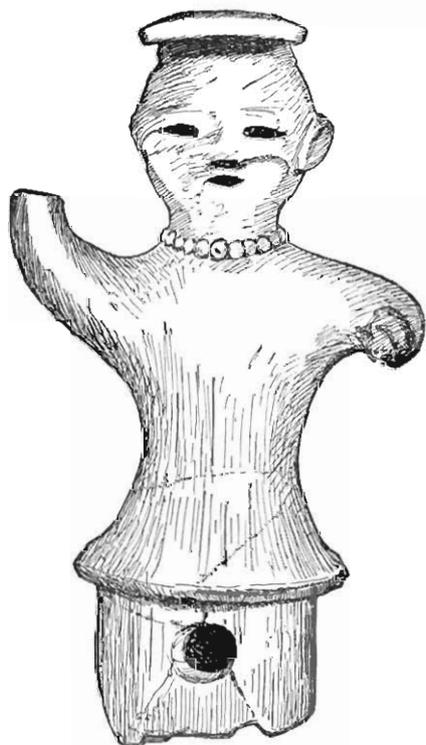


Fig. 40. Terra-cotta Female figure (*Tsuchi-ningyō*).  $\frac{1}{2}$  linear.

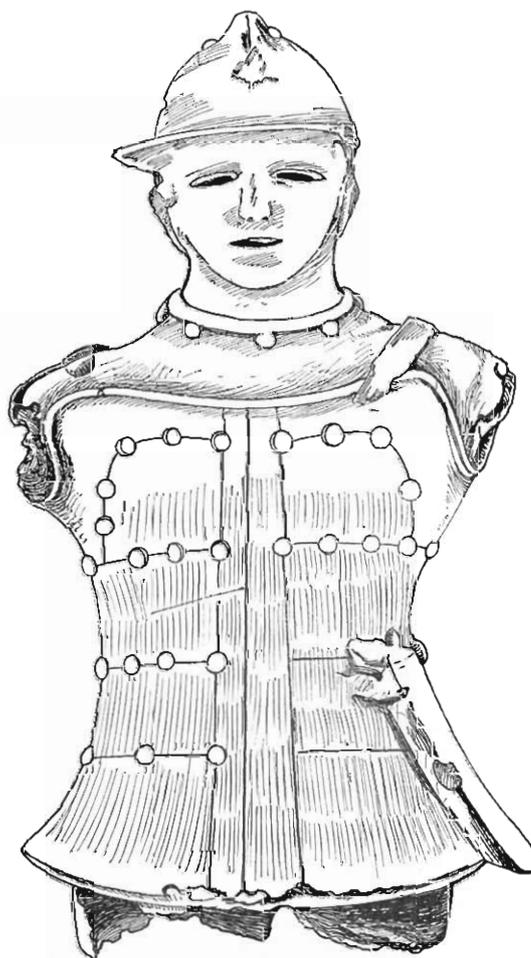


Fig. 41. Terra-cotta Male figure (*Tsuchi-ningyō*).  $\frac{1}{2}$  linear.

<sup>a</sup> In the province of Yamato after these sacrifices had ceased there was for some time a pretence of immolating victims. They were shut up in the chamber of the mound with the dead, but an opening was left through which they might escape. These persons termed *ombo* were, however, considered to be dead and had to live in districts specially set apart for them.

The custodians of burial-mounds formed another grade of men who were similarly compelled to live apart from the ordinary people. They were termed *shiku*. Both these grades usually carried on farming operations and were not regarded as being so low in the social scale as the *eta*.

Unfortunately no records have been kept of the positions in which the existing specimens were found, but there is not the least doubt, judging from the forms of their pedestals, that they were set up above the surface of the mound and not buried within it. My own opinion, which is based on the positions in which I found a pedestal on one mound, and numerous fragments of terra-cotta, not pieces of ordinary tubular *haniwa*, on others, is, that they were set up in an erect position on the level summits of the circular mounds and of the round peaks of the double mounds.

In figs. 40 and 41 are shown two typical examples of *tsuchi-ningyō*.

Fig. 40 represents one of the most interesting of these archaic figures, from a mound in the province of Kōtsuke, which I was fortunate in being able to secure, and it is now in the British Museum. Its height, measured from the top of the

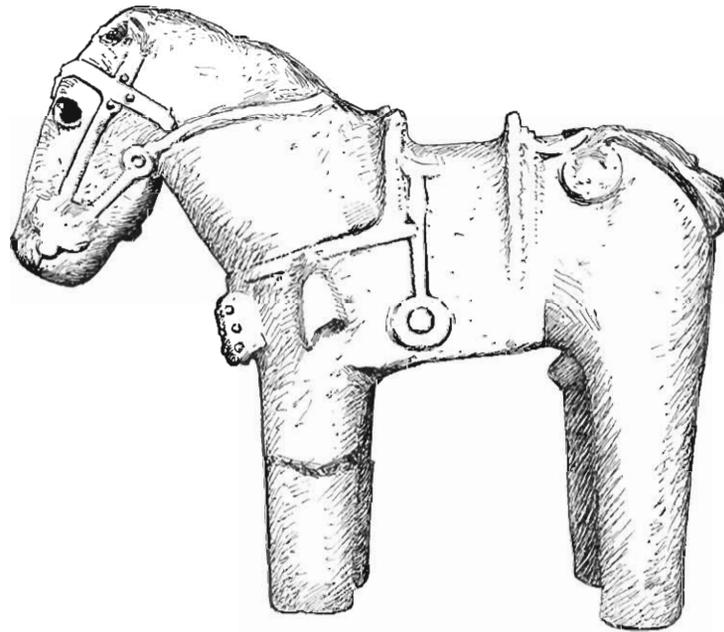


Fig. 42. Terra-cotta Horse.  $\frac{1}{16}$  linear.

pedestal, is 1 foot 5 inches. From the mode in which the hair is arranged it is evidently intended to represent a woman. Around the neck is a necklace of round beads. Other fragmentary female figures have this necklace, as well as bracelets of similar beads. The pedestal is in the form of a tube, pierced with two holes,

through which a bar of wood was probably fixed in order to assist in keeping the figure upright.

Fig. 41 is a copy of a Japanese drawing of a *tsuchi-ningyō* representing a warrior, also from a burial-mound in the province of Kōtsuke. The original figure is 1 foot 11 inches in height, measured from the top of the pedestal to the crown of the helmet. The cuirass is evidently formed of plates joined by rivets, and of the same form and construction as that from the Higo dolmen described above. The helmet is also of riveted plates.<sup>a</sup>

Fig. 42 represents one of the terra-cotta figures of horses which, like the human figures, were also set up on burial-mounds. It was found on a mound in the village of Kamichūjo (Musashi), and is now in the Imperial Museum, Tōkyō. Its dimensions are: height to the top of the back 2 feet 1 inch, extreme length 2 feet 11 inches. The cheek-pieces of the bit had originally six small bells, of which only one remains, attached to their rims, like those of the Higo dolmen. The stirrup-irons, too, are evidently of the same form as those from that tomb. The positions of the larger bells, and of the ornamental metal plates, are clearly indicated, although the latter are represented of a somewhat different shape from those usually found.

Besides these terra-cotta figures, rudely carved stone figures were also sometimes placed on mounds. The name *hayato*, or "palace guards," is usually applied to them. They are of very rare occurrence and were probably never in extensive use. One of the few which have escaped destruction is shown in fig. 43. It was found on a burial-mound in the province of Chikugo, in Kyūshū. It is a flat slab 3 feet in height, including the pedestal, and 6½ to 7 inches thick, roughly hewn to represent a man wearing a dagger. On the back are perpendicular incised lines, which are supposed by some to represent arrows.

The mound from which it was taken is one of the double form and formerly contained a dolmen, but now all the stones have been removed. On an old

<sup>a</sup> According to the curator of the Imperial Museum, Tōkyō, the date of this kind of armour is about the fourth century of our era.

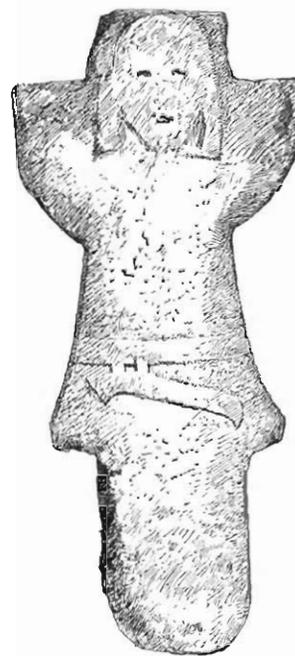


Fig. 43. Stone Figure from a Dolmen mound.

engraving (1797 A.D.) this figure is shown in position on the mound, not on the summit where the terra-cotta figures were placed, but in front of the dolmen, a little to the left of its entrance.<sup>o</sup>

On one mound near Nara (Yamato), apparently of post-dolmen times, these guardians of the tomb were represented by three rude boulders, one side of each of which was smoothed and had incised on it, in deeply cut lines, a rough drawing of a human figure having the head of a hare. They are now in the temple Tōdaiji.

#### *Age of the Dolmens.*

Two important questions remain for our consideration. First, who were the builders of the dolmens? Second, what was the date and duration of the period during which they were built? Both these I shall endeavour to answer, as far as is possible, from the results of my explorations of the dolmens themselves and examinations of their contents, referring in a few instances only to ancient Chinese and Japanese records.

That the builders of the dolmens were not the aboriginal inhabitants of the country is very conclusively proved by the evidence afforded by the "Kitchen Middens," or shell-mounds, which are found at many points on the coast of the main island, and also in Kyūshū. The contents of these mounds consist of bones of men and animals, shells, stone implements, together with vessels of pottery, but without any objects of metal whatever. The same remains become more and more abundant as we proceed to the northern extremity of the country, and still more so when we enter Yeso. The pottery is entirely distinct in its material and in the shapes of the vessels, and the nature of their decoration from that which occurs in the burial-mounds and dolmens, and neither it nor the stone weapons have ever been found in them. Neither have any pieces of dolmen pottery or anything characteristic of dolmens ever been found in shell-mounds. The identity of these remains, whether found in Yeso, or in the extreme west, prove un-

<sup>o</sup> In the *Shaku Nihongi* (written in the thirteenth century) it is stated that there were then many other figures of men and animals on this mound.

doubtedly that they belong to the aborigines, the Ainu, who once occupied the whole country and were gradually driven back to the north by a more powerful race. The contents of the burial-mounds and dolmens afford no evidence of more than one invading race, and there is such a continuity in the forms of the metal work, and especially of the stone ornaments and pottery from the earliest of these remains up to those of historical times, that we must admit that the people of that race were the ancestors of the present Japanese. There were doubtless several immigrations, but only of kindred clans. Whence they originally came is a problem so far unsolved, and the present available *data* are far too scanty to enable me even to theorise with profit on the approximate locality of their original home. But the distribution of the dolmens and burial-mounds on the coasts opposite to Korea affords very weighty evidence in favour of their having come through that country.

The island of Tsushima is so near to the Korean peninsula as to be visible from it in clear weather, and from Tsushima the outlying islets of the island of Kyūshū are also clearly seen. It is hence extremely probable that the chief immigration of the race took place by that route.

Strange to say, their traditions and the mythical legends relating to their origin only tell of Kyūshū as their birthplace, where they first arose as descendants of the gods, and are silent about any migration from the mainland, although that must have been one of the most important events in their early life.

The date of that immigration is shrouded in the mists of a far distant age and does not admit of even an approximate determination. The race seems, however, to have been settled in Kyūshū and parts of the main island for some time before they became dolmen builders, during which they erected only simple mounds for the reception of their dead. From the bronze swords and the moulds used in casting them, which have been chiefly found in Kyūshū, and the shores of the west part of the inland sea, never along with iron objects and never in dolmens, we may, I think, infer that they were then in the latter part of their bronze age and that before they advanced further eastwards they had become acquainted with iron.<sup>a</sup>

The dolmens are certainly all of the iron age, and were apparently first built

<sup>a</sup> There is no evidence of a copper age in Japan, but contemporaneous with the early iron age and up to the sixth or seventh centuries of our era we find copper in more extensive use than bronze as a decorative metal.

by the Japanese very shortly after they had become acquainted with the metal. No bronze swords have ever been found in them; bronze arrowheads are said to occur occasionally, but associated with iron swords, although I have never found any myself.

Whence the early Japanese derived the idea of dolmen building it is very difficult to say, and it is extremely improbable that it originated independently with them.

No dolmens have been found in China, but no systematic archæological explorations have been made in that country and they may perhaps yet be discovered.

In Korea there are dolmens, but they are merely cists with megalithic capstones<sup>a</sup> similar in structure to those of Western India, but having no points of resemblance to those of Japan. In fact, until passing westwards through Asia we reach the shores of the Caspian Sea only then do we find dolmens at all similar to the Japanese, and for still more closely allied forms we have to go still farther to Western Europe. It may be that the Korean dolmen is the germ from which the Japanese dolmens were developed, but if so, it is strange that not a single example of it is found in Japan.

The direct determination of the date when the Japanese first began to build dolmens is beset with great difficulties on account of the insufficiency of trustworthy *data*. Yet by calculating back from the time when dolmen building was given up, the length of the period during which it was carried on may, I think, be computed, and the date of its beginning ascertained with a possible error of not more than one or two centuries.

The approximate date of the termination of dolmen building may be taken as lying between 600 and 700 A.D., although such a time-honoured custom may have lingered on for some years afterwards and probably survived until a very much later period for some imperial interments.

The evidence on which the above approximate date is based is derived chiefly from the metallic contents of the dolmens, more especially from the form of the iron swords, and the technique and ornamental designs of their furniture, and of other objects of metal.

The famous collections of antiquities in the ancient treasure-house, the Shōso-in,

<sup>a</sup> Gowland, "The Dolmens and Antiquities of Korea," *Journal of the Anthropological Institute*, xxiv. Pl. xvi. p. 330.

and in the temple Tōdaiji, at Nara, afford much valuable aid in this determination. The collection in the Shōso-in was made in 784 A.D., when the court was removed from this ancient city to the province of Yamashiro.

Specimens of all the articles in use at the palace at that time, as well as other representative objects, were then placed in this treasure-house, which was specially built for the purpose, and they are there at the present day. Other specimens in Tōdaiji represent the early part of the Nara epoch (709-84 A.D.). Now, with the exception of one or two straight blades, which are said to have belonged to the Emperor Shōmu (died in 756 A.D.), all the swords in these collections differ entirely from those of the dolmens, both in blades and furniture. In neither is there a single specimen of the oviform pierced guard and bulb-like pommel which are especially characteristic of the dolmen period. The straight sword had, in fact, died out and been replaced by the slightly curved blade, which is never found in dolmens.

The curious mode, too, of coating iron with copper, so extensively practised in dolmen times, is not seen in any object in these collections, and when copper is used the objects consist entirely of it.

Again, the archaic ornamental designs executed in lines of punched dots have also been given up, and in their place we have elaborate patterns in incised and *repoussé* work. Hence we may, I think, infer that the dolmens are older than the eighth century.

Negative evidence in favour of their being earlier than the seventh century is as follows :

No pewter has been found in them, although pewter vessels were in use in that century.

Coins, too, are absent, although they were then in circulation.

Bronze objects are rare, yet the metal was then in extensive use.

The testimony of the ancient literature also affords support to the approximate date I have given above. According to the *Nihongi*<sup>a</sup> (Chronicles of Japan), compiled in 700 A.D., a special decree was made by the Emperor Kotoku, in 646 A.D., relating to burial-mounds and their chambers, and fixing their dimensions for various ranks, also enacting that the chambers should be built of small stones, and that valuables should not be buried in them in honour of the dead. If this decree

<sup>a</sup> Translation by W. G. Aston, *Supplement to Transactions and Proceedings of the Japan Society* (London, 1896), ii. 218 *et seq*

was enforced, and there is no reason to doubt it, megalithic dolmen building must have then terminated.

Whilst, if we compare the dimensions given in the decree with those of any of the dolmens I have explored and measured, it will be seen that there is not a single case in which they exactly agree, and only four in which they even roughly approximate, and these are megalithic. In fact, none I have examined correspond in dimensions and structure with its provisions, and therefore are presumably of earlier date.

The total abolition of burial in dolmens about fifty or sixty years later by the Emperor Mommu (697-707 A.D.),<sup>a</sup> and the introduction of cremation about the same time, is in favour of this view.

The oldest inscribed stone which I have found, which may be regarded as a tombstone, is on a mound not containing a dolmen, attributed to the Empress Gemmyō, and bears the date 721 A.D.

The date when dolmen building began in Japan does not admit of such an approximately definite determination. The evidence we have to guide us is for the most part vague in character and liable to misinterpretation, and in traversing the field it covers we feel we are often treading on uncertain ground. It is, however, by no means advisable that this question should be altogether evaded, I will therefore venture to attempt its solution, and to assign a roughly approximate time for the advent of this mode of burial, although I do so with all reserve. More systematic exploration will have to be made, especially in Yamato, Izumo, and the Island of Kyūshū, before it can be accurately fixed. One point is certain, *i.e.* that all Japanese dolmens are of the Iron Age, none have been discovered containing only bronze, and none containing implements of stone. The period during which they were built is characterised from its beginning to its close, as I have already pointed out, by its iron swords, the shape of which is entirely distinct from those of bronze. No intermediate forms showing a transition from one to the other have been found, it is hence not unreasonable to conclude that these iron swords were introduced from abroad.<sup>b</sup>

It is also by no means improbable that dolmen building was introduced about

<sup>a</sup> *San Ryō Shi*, a Japanese treatise on burial mounds.

<sup>b</sup> Some of these swords may perhaps even have been imported at first, but they are so numerous and so widely distributed that most must have been made in the country, and this view is strongly supported by the fact that in the west provinces there are vast deposits of magnetic iron sand, an ore easily reducible in the most primitive furnaces.

the same time, as this special form of sword has been rarely found in the early simple burial-mounds. Now as iron was known and in use in China as early as 1000 B.C. (Legge), and there was communication between Japan and that country at least as early as 265 B.C., the Japanese could hardly have failed to have then learned the use of the metal, and at the same time to have become acquainted with iron weapons if they had not this knowledge already. It would hence seem to be not unreasonable to assume that not much, if at all, later than this date dolmens began to be built.

The rudeness and megalithic character of the structure of a dolmen, it might be supposed, would afford some clue to its age, but in Japan these features by no means always imply great antiquity.

An exact chronological arrangement of the various types is also impossible, although, I think, the earliest dolmens will be found among those of the simplest plan, such as the *allées couvertes*. From this simple form, in the course of time, was developed the type having a distinct chamber and entrance gallery, and from this again the more highly differentiated dolmen with double chambers was evolved. A still later phase is exhibited in the six dolmens of well-hewn and coursed masonry in the provinces of Yamato and Izumo. If this view of the gradual evolution of the complex from the simple dolmen is correct, then I think we must admit that a long period of time must have been required for its accomplishment. If we allow seven or eight centuries for these developments, and this hardly seems to be a too liberal allowance, then as we have seen dolmen building ended 600 to 700 A.D., the approximate date of its beginning would be shortly before our era, a computation not differing very greatly from that given above.

The evidence derived from the number of dolmens in the country is also not without value in this computation of the length of the dolmen-building age. I have examined in all 406. Besides these, according to the estimates of local officials, village headmen, and farmers in the districts in which they occur, there are not less than 800 others including those which are more or less completely ruined. The total number of dolmens would hence be about 1,200, but this, I think, is decidedly an under-estimate and certainly falls very far short of the actual number originally erected. In every province there is abundant evidence that very many have been destroyed and the geographical names of some of the dolmen districts testify to this, thus we have Yaso-dzuka (the eighty mounds) where only fifteen remain, Sen-dzuka (1000 mounds or "great many") where there are now only about forty.

Now from their construction necessitating the labour of a large body of men, and from the nature of their contents, it will, I think, be admitted that they can only be regarded as the tombs of chiefs or of men in authority and not of the common people. Hence, as their number is so great, and their distribution is chiefly confined to a few centres of limited area and does not extend over the whole country, the period during which they were erected must have been of considerable length, and I would again suggest seven or eight centuries as its probable minimum duration.

From these considerations it would then appear that the beginning of the dolmen period may not have been widely separated in time from the commencement of our era, although it must be remembered that one or two isolated examples would tend to place it in an earlier age.

The scarcity of iron, excepting in dolmens, the rare occurrence of bronze swords in burial-mounds, and the absence of any evidence of the Japanese having been in their stone age in the islands, and their undoubtedly long settlement in the west parts of the country, are also in favour of a more remote date.

A considerable amount of light is thrown on the history, customs, and civilisation of the ancient Japanese by the dolmens and their remains.

In the early part of the period during which they were builders of dolmens, they seem to have been a collection of independent or semi-independent clans of the same race, armed with the same weapons, and having the same burial customs and religious beliefs. They occupied certain distinct centres now marked by extensive groups of dolmens and burial-mounds. These are scattered somewhat irregularly over the country, generally not far from the coast, and are separated from one another by more or less wide tracts of country where few or no dolmens are found. The country was then in fact only very partially occupied by them.

The chief centres are, as I have already pointed out, four in number, viz.

1. The Kyūshū centre, embracing the northern and eastern province of the Island of Kyūshū.
2. The Izumo centre, embracing the provinces of Izumo, Hōki, and Inaba.
3. The Yamato centre, embracing Yamato, Kawachi, and the neighbouring provinces.
4. The Musashi centre, embracing the provinces of Musashi, Kōtsuke, and Shimotsuke.

To these may perhaps be added another, Bizen, and its adjacent province, Bingo, although it is just possible that this centre is of later date than the others.

The province of Yamato, according to Japanese ancient records, was the locus of a central government. Its chief rulers are styled emperors, and are held to have been supreme in authority over the whole nation from the earliest times; but this is open to serious doubt so far as the early half of the dolmen period is concerned. The characteristic form of burial-mound for the Yamato rulers of that time is the huge double mound already described, fig. 10; but precisely the same form of mound is also found in the other centres associated with their groups of dolmens. It is true that these mounds are more numerous, and some are larger in the Yamato centre than in the others, yet, unless the clans occupying the latter were independent, or their rulers were regarded as the equals of the Yamato chiefs, no mounds of this so-called imperial form should be found in them at all. Besides, the objects which have been found in the dolmens of these other districts indicate even greater wealth and magnificence of display than those found in the Yamato centre, to which the sites of successive imperial courts are assigned. The Yamato rulers subsequently acquired sway over them, but not until a considerable part of the dolmen period had elapsed. The other less important groups of dolmens, which form as it were outliers from the chief centres, probably mark the sites of military posts, established to hold the aborigines in check, and so afford security to the main body of the clan settled on the greater plains.

The close resemblance of the contents of the dolmens in all these centres, and the similarity in the structure and form of their chambers, in spite of a few local modifications, show conclusively that in all we have to deal with one race only. The weapons, ornaments, and pottery are, with few exceptions, practically identical.

From what has been stated, it will be seen that the dolmen period in Japan from its beginning to its close was characterised by a well-developed civilisation and a culture which had advanced far beyond the limits of barbarism. During it the clans of the race had driven out the aborigines from the richest portions of the country, had become a settled and united people, and had made great progress in the industrial arts.

The high stage in civilisation to which they had attained might have been thought incompatible with the rude structures of the dolmens of undressed stone which they erected as sepulchres for their famous dead, but the remains which these dolmens have yielded, which I have had the honour of describing, demonstrate conclusively that this is not so, but that weathered boulders and unhewn

blocks were used in their construction with some definite object, probably a religious one, the meaning of which is not apparent, and not because the art of stone cutting was unknown.

Many points, however, are still obscure about this important period in the life history of the Japanese race. More explorations are required for their elucidation, and still more for tracing back that history further in pre-dolmen times. Yet I hope that those it has been my privilege to make and the facts I have endeavoured to elicit from them, may be deemed to be of sufficient interest to justify me in bringing them to the notice of the Society.

## APPENDIX.

TABLE I.—DIMENSIONS, ETC. OF JAPANESE DOLMENS.

The dolmens contained in this Table, excepting Nos. 111 to 114, were specially examined and measured by the author, as they are the best preserved examples in the provinces mentioned.

The length and breadth of the chamber and gallery in each case are the dimensions at the floor line.

When the position of the gallery is not given, it is on the median line.

| No. | Locality.       | Chamber.      |                  |         | Gallery.   |                  |         | Total L. | Direction of Entrance. | Mound.         | Notes.  |
|-----|-----------------|---------------|------------------|---------|------------|------------------|---------|----------|------------------------|----------------|---|
|     |                 | L.            | Br.              | H.      | L.         | Br.              | H.      |          |                        |                |   |
|     | PROV. BIZEN.    | ft. in.       | ft. in.          | ft. in. | ft. in.    | ft. in.          | ft. in. | ft. in.  |                        |                |   |
| 1   | Nr. Okayama     | 12 9          | 5 5              | 5 0     | —          | —                | —       | —        | S. 40° E.              | Destroyed      | "Allée couverte." Roof of three stones not covered by mound.  |
| 2   | Do.             | 15 0          | 2 1              | 1 10    | —          | —                | —       | —        | S. 10° W.              | Simple conical | A long cist built of small stones.  |
| 3   | Do.             | 31 6          | 5 6<br>to<br>7 1 | 8 0     | —          | —                | —       | —        | S. 35° E.              | Destroyed      | "Allée couverte." Roof stones about 5 feet to 6 feet by 10 feet partly uncovered.                         |
| 4   | Do.             | 14 2          | 5 0              | —       | Impf.      | 4 3              | —       | —        | S.E.                   | Do.            | Ruined dolmen. Gallery in line with W. wall.  |
| 5   | Do.             | 15 5          | 6 8              | —       | Do.        | 5 2              | —       | —        | W. 5° S.               | Do.            | Ruined dolmen. Gallery in line with N. wall.  |
| 6   | Do.             | 17 3          | 7 10             | 8 6     | 29 6       | 4 0              | 6 1     | 46 9     | S. 10° W.              | Simple conical | Roof of chamber of four stones.   |
| 7   | Do.             | 15 0          | 6 0              | 6 10    | 11 5       | 6 4<br>to<br>4 3 | 4 5     | 26 5     | S. 15° E.              | Destroyed      | Largest stone 10 feet by 4½ feet by 4½ feet. Gallery in line with E. wall.                                |
| 8   | Do.             | 17 0          | 5 1              | 3 10    | —          | —                | —       | —        | S. 15° E.              | Simple conical | "Allée couverte." Contains hewn stone sarcophagus.  |
|     | PROV. BUZEN.    |               |                  |         |            |                  |         |          |                        |                |   |
| 9   | Nr. Kabarumachi | 5 10          | 5 0              | 4 2     | Impf.      | 2 6              | 3 2     | —        | S. 30° E.              | Do. ruined     | Chamber roof of one stone.  |
| 10  | Do.             | 6 0           | 5 4              | 5 0     | 24 0       | 2 1              | 3 10    | 30 0     | S. 40° E.              | Do.            |   |
| 11  | Do.             | 8 3           | 5 6              | 7 3     | Impf.      | 2 4              | 4 1     | —        | S.E.                   | Do.            | Chamber roof of one stone. Walls also megalithic.   |
| 12  | Do.             | 6 0           | 5 0              | 7 0     | Imperfect. |                  |         | —        | S.                     | Do.            | Dolmen with double chamber.   |
|     |                 | Outer chamber |                  |         |            |                  |         |          |                        |                |   |
|     |                 | 4 0           | 5 0              | 7 0     |            |                  |         |          |                        |                |   |
| 13  | Nr. Kuroda      | 10 9          | 10 8             | 12 1    | 41 6       | 7 0              | 7 5     | 68 6     | S. 10° E.              | Simple conical | Dolmen with double chamber of fine megalithic structure. Inner chamber contains a hewn stone sarcophagus. |
|     |                 | Outer chamber |                  |         |            |                  |         |          |                        |                |   |
|     |                 | 7 4           | 7 0              | 11 7    |            |                  |         |          |                        |                |   |

| No. | Locality.                  | Chamber. |                  |                  | Gallery. |                  |                   | Total L. | Direction of Entrance. | Mound.                               | Notes.   |
|-----|----------------------------|----------|------------------|------------------|----------|------------------|-------------------|----------|------------------------|--------------------------------------|--|
|     |                            | L.       | Br.              | H.               | L.       | Br.              | H.                |          |                        |                                      |  |
|     | PROV. BUZEN<br>—continued. | ft. in.  | ft. in.          | ft. in.          | ft. in.  | ft. in.          | ft. in.           | ft. in.  |                        |                                      |  |
| 14  | Nr. Kuroda                 | 12 3     | 9 9              | 12 9             | 27 0     | 6 7              | 8 2<br>to<br>10 4 | 56 0     | S. 30° E.              | Terraced conical, with a square base | Dolmen with double chamber. Several immense stones in both these dolmens.  |
|     | PROV. HARIMA.              |          |                  |                  |          |                  |                   |          |                        |                                      |  |
| 15  | Nr. Himeji                 | 18 3     | 7 4              | 7 0              | 15 0     | 4 10             | 5 4               | 33 3     | S.                     | Simple conical                       | Roof of chamber of three stones. Contains sarcophagus of hewn slabs.   |
| 16  | Do.                        | 8 0      | 5 10             | 4 1              | 6 9      | 3 7              | 3 1               | 15 0     | S. 10° W.              | Do.                                  | The roof and each wall of the chamber are single stones. Gallery in line with W. wall.   |
| 17  | Do.                        | 12 5     | 7 4              | 9 6              | Impf.    | 4 0              | 3 11              | —        | S. 15° W.              | Do.                                  | Gallery in line with E. wall.  |
|     | PROV. HYŪGA.               |          |                  |                  |          |                  |                   |          |                        |                                      |  |
| 18  | Nr. Tsuma                  | 15 6     | 7 0              | 7 1              | 23 0     | 5 6              | 5 7               | 38 6     | S. 5° E.               | Terraced conical                     | Surrounded by moat 35 feet wide.   |
|     | PROV. HOKI.                |          |                  |                  |          |                  |                   |          |                        |                                      |  |
| 19  | Nr. Nagase                 | 8 0      | 7 8              | —                | 8 0      | 5 0              | —                 | 16 0     | W. 23 S.               | Simple conical                       | Roof stone of chamber 13 feet by 10 feet 6 inches by 2 feet. Gallery in line with S. wall.   |
| 20  | Nr. Kurayoshi              | 9 7      | 7 0              | 8 0              | 20 6     | 6 9<br>to<br>8 6 | 5 6               | 31 3     | S. 15° W.              | Do.                                  | Both built of hewn stones, some of immense size. Chamber roof of No. 20 of one stone c. 12 feet by 13 feet by 4 feet. Chamber separated from gallery by hewn slabs. No. 21 contains a cist of slabs. |
| 21  | Do.                        | 12 6     | 10 3             | 9 7              | 14 9     | 10 0             | 6 9               | 23 0     | S.                     | Do.                                  |  |
|     | PROV. IWAMI.               |          |                  |                  |          |                  |                   |          |                        |                                      |  |
| 22  | Nr. Hamada                 | 21 0     | 5 0<br>to<br>5 9 | 5 9              | —        | —                | —                 | —        | S. 5° W.               | Simple conical                       | "Allée couverte." Roof of four stones.   |
| 23  | Tsuda, near Masuda         | 17 0     | 5 9<br>to<br>6 8 | 7 8<br>to<br>6 8 | 12 10    | 4 4              | 5 6               | 29 10    | S.                     | Do.                                  | Chamber roof of five stones.   |
| 24  | Do.                        | 14 0     | 8 0              | 7 3              | 11 0     | 3 8              | 5 0               | 25 0     | S. 10° W.              | Do.                                  | Chamber roof of three stones.  |
| 25  | Do.                        | 7 6      | 4 7              | 4 7              | Impf.    | 4 0              | 3 7               | —        | S. 22° W.              | Do.                                  | Walls chiefly rounded boulders. Gallery in line with W. side.  |
| 26  | Do.                        | 11 6     | 4 3              | 5 10             | —        | —                | —                 | —        | S. 5° E.               | Do.                                  | "Allée couverte." Roof of five stones.   |

| No. | Locality.                  | Chamber. |  |         | Gallery.        |                  |         | Total L. | Direction of Entrance. | Mound.                | Notes.   |
|-----|----------------------------|----------|--|---------|-----------------|------------------|---------|----------|------------------------|-----------------------|--|
|     |                            | L.       | Br.  | H.      | L.              | Br.              | H.      |          |                        |                       |  |
|     | PROV. IWAMI<br>—continued. | ft. in.  | ft. in.  | ft. in. | ft. in.         | ft. in.          | ft. in. | ft. in.  |                        |                       |  |
| 27  | Tsuda, near Masuda         | 16 0     | 5 8<br>to<br>2 1   | 5 0     | —               | —                | —       | —        | S.                     | Simple conical        | "Allée couverte." Roof of nine stones.   |
|     | PROV. IYO.                 |          |  |         |                 |                  |         |          |                        |                       |  |
| 28* | Asakura                    | 17 3     | 7 2  | 7 5     | 11 1            | 4 7              | 5 1     | 28 4     | S. 35° W.              | Do.                   | Roof of chamber three stones.  |
| 29  | Do.                        | 18 9     | 7 0<br>to<br>5 2   | 7 2     | 7 3             | 3 4              | 4 5     | 26 0     | E. 30° N.              | Do.                   | Roof of chamber four stones.   |
| 30  | Do.                        | 13 0     | 5 6  | 6 0     | Imperfect.      |                  | —       | —        | W. 30° S.              | Do.                   | Gallery in a line with N.W. side.  |
| 31  | Do.                        | 13 6     | 6 6  | 8 0     | 10 0            | 3 8              | 4 3     | 23 6     | S.W.                   | Do.                   | Chamber roof three stones.   |
| 32  | Do.                        | 19 0     | 7 0<br>to<br>5 8   | 7 10    | 5 9             | 3 6              | 5 8     | 24 9     | N.W.                   | Do.                   | Chamber roof four stones.  |
| 33  | Do.                        | 17 0     | 6 6  | 8 0     | Stones removed. |                  | —       | —        | W.                     | Do.                   | Chamber roof three stones.   |
| 34  | Do.                        | 12 9     | 6 10<br>to<br>5 5  | 7 8     | 4 0             | 3 1              | 5 6     | 16 9     | W. 20° N.              | Do.                   | Chamber roof three stones.   |
| 35* | Do.                        | 18 0     | 6 10<br>to<br>4 9  | 8 1     | 9 0             | —                | 6 9     | 27 0     | N. 10° W.              | Do.                   | Chamber roof four stones. Gallery in a line with W. side.                        |
|     | PROV. IZUMO.               |          |  |         |                 |                  |         |          |                        |                       |  |
| 36  | Imaichi                    | 19 0     | Inner chamber.<br>9 9<br>Outer chamber.<br>8 0<br>to<br>6 4  | 11 2    | 12 0            | 4 5<br>to<br>3 0 | 7 5     | 43 0     | W. 30° S.              | Terraced double mound | Rude megalithic double chambered dolmen. Contains two sarcophagi.                |
| 37  | Do.                        | 12 6     | 5 7  | 6 0     | Impf.           | 4 8              | 4 6     | —        | S. 25° W.              | Ruined                | Walls of hewn, roof of unhewn, stones. Contains hewn stone sarcophagus.          |
| 38  | Euya, near Imaichi         | 21 6     | 8 5  | 9 9     | 22 6            | 5 8<br>to<br>3 5 | 6 6     | 46 8     | W. 25° S.              | Do. double(?)         | Built of large hewn blocks. Contains two hewn stone sarcophagi.                  |
| 39  | Yasui, near Imaichi        | 8 4      | Inner chamber.<br>8 1<br>Outer chamber.<br>7 9<br>8 0<br>6 9 | 7 3     | 8 2             | 6 0              | 6 0     | 28 6     | E. 40° S.              | Ruined                | Built of large hewn blocks. Contains two hewn stone sarcophagi in inner chamber. |
| 40  | Do.                        | 12 10    | 7 0  | 7 9     | Est. at<br>18 0 | 3 0              | 3 8     | —        | S. 15° E.              | Simple conical        | Built of rude stones. Contains two sarcophagi of hewn slabs.                     |

\* The dolmens of this group (28-35) are all constructed of weathered boulders mixed with broken blocks of granite. The largest stones are those of the roof.

## The Dolmens and Burial Mounds in Japan.

| No. | Locality.      | Chamber.       |         |         | Gallery. |         |         | Total L. | Direction of Entrance. | Mound.                        | Notes.  |
|-----|----------------|----------------|---------|---------|----------|---------|---------|----------|------------------------|-------------------------------|---|
|     |                | L.             | Br.     | H.      | L.       | Br.     | H.      |          |                        |                               |   |
|     | Prov. KAWACHI. | ft. in.        | ft. in. | ft. in. | ft. in.  | ft. in. | ft. in. | ft. in.  |                        |                               |   |
| 41* | Hattorigawa    | 15 0           | 8 7     | 8 8     | 17 0     | 5 5     | 6 0     | 32 0     | S. 25° W.              | Simple conical                | Gallery in line with E. wall.                     |
| 42  | Do.            | 11 0           | 7 0     | 9 6     | 13 6     | 4 6     | 5 5     | 24 6     | S. 25° W.              | Do.                           | Do.   |
| 43  | Do.            | 12 0           | 6 0     | 8 6     | 17 8     | 4 3     | 5 7     | 29 8     | S. W.                  | Do.                           | Do.   |
| 44  | Do.            | 13 6           | 7 2     | 10 2    | 19 0     | 5 2     | 5 6     | 32 6     | S. W.                  | Do.                           | Do.   |
| 45  | Do.            | 12 1           | 6 7     | 9 0     | 17 8     | 5 0     | 5 4     | 29 9     | S. 40° W.              | Do.                           | Do.   |
| 46  | Do.            | 11 8           | 6 3     | 8 8     | 11 10    | 4 2     | 4 5     | 23 6     | S. 30° W.              | Do.                           | Do.   |
| 47  | Do.            | 12 8           | 7 2     | 9 10    | 9 0      | 4 8     | 6 0     | 21 8     | S. 10° W.              | Do.                           | Do.   |
| 48  | Do.            | 10 8           | 6 5     | 7 10    | Impf.    | 4 4     | 5 0     | —        | S. W.                  | Do.                           | Do.   |
| 49  | Do.            | Inner chamber. |         |         | 12 6     | 6 6     | 5 3     | 43 0     | S. 35° W.              | Simple conical                | Double chambered dolmen                           |
|     |                | 11 0           | 7 0     | 9 6     |          |         |         |          |                        |                               |   |
|     |                | Outer chamber. |         |         |          |         |         |          |                        |                               |   |
|     |                | 14 6           | 8 0     | 11 0    |          |         |         |          |                        |                               |   |
| 50  | Do.            | 12 0           | 9 6     | 11 9    | 19 6     | 5 9     | 5 5     | 31 6     | W. 12° S.              | Do.                           | Contains portions of a sarcophagus of hewn slabs. |
| 51  | Do.            | 16 0           | 9 9     | 11 6    | 24 9     | 5 5     | 5 9     | 40 9     | W. 5° N.               | Do.                           |   |
| 52  | Do.            | 10 8           | 5 5     | 7 8     | 13 4     | 4 1     | 5 4     | 24 0     | S. 40° W.              | Do.                           | Gallery in line with E. wall.                     |
| 53  | Yamatake       | 18 0           | 8 0     | 9 6     | 21 5     | 4 6     | 3 8     | 39 5     | S. 25° W.              | Conical with doubtful terrace |   |
| 54  | Do.            | 11 6           | 8 0     | 10 6    | 16 0     | 4 8     | 4 10    | 27 6     | S. 5° W.               | Simple conical                | Gallery in line with E. wall.                     |
| 55  | Do.            | 13 4           | 7 9     | 10 3    | Impf.    | 5 0     | 6 0     | —        | W. 40° S.              | Do.                           | Do.   |
| 56  | Shijo-mura     | 15 0           | 7 0     | 8 7     | 12 6     | 6 0     | 3 7     | 27 6     | S. 20° W.              | Do.                           | Do.   |
| 57  | Do.            | 16 3           | 6 6     | 7 0     | 11 6     | 5 5     | 4 4     | 27 9     | S. 5° E.               | Do.                           | Do.   |
| 58  | Do.            | 15 4           | 6 6     | 8 7     | 27 8     | 5 4     | 5 9     | 43 0     | S.                     | Do.                           | Do.   |
| 59  | Do.            | 20 6           | 7 2     | 9 10    | 28 6     | 5 10    | 6 2     | 49 0     | S. 15° E.              | Do.                           | Do.   |
| 60  | Do.            | 14 6           | 5 8     | 8 3     | 18 6     | 3 6     | 4 10    | 33 0     | S.                     | Do.                           | Do.   |
| 61  | Do.            | 15 5           | 7 8     | 10 8    | Impf.    | 5 6     | 5 8     | —        | S. 20° W.              | Do.                           |   |
| 62  | Do.            | 15 6           | 7 0     | 9 9     | 6 6      | 5 10    | 6 2     | 22 0     | S. 20° E.              | Do.                           |   |
| 63  | Shiba-mura     | E. Side        | 13 8    | Back    | 10 3     | 24 0?   | 2 11    | 5 1      | —                      | S. 10° W.                     | Do.   |
|     |                | W. "           | 11 8    | Front   |          |         |         |          |                        |                               |   |

\* The walls of the dolmens of these groups (41-80) are all built of rude unhewn stones, except where specified, often of large size. The roofs are megalithic in all, stones measuring from 9 feet by 7 feet to 14 feet by 9 feet being common.

The roof stones of many are bare, standing out above the earth of the mound. In a few cases the entire dolmen is exposed.

| No.             | Locality.                    | Chamber. |                   |                              | Gallery.      |         |                  | Total L. | Direction of Entrance. | Mound.                             | Notes.   |
|-----------------|------------------------------|----------|-------------------|------------------------------|---------------|---------|------------------|----------|------------------------|------------------------------------|--|
|                 |                              | L.       | Br.               | H.                           | L.            | Br.     | W.               |          |                        |                                    |  |
|                 | PROV. KAWACHI<br>—continued. | ft. in.  | ft. in.           | ft. in.                      | ft. in.       | ft. in. | ft. in.          | ft. in.  |                        |                                    |  |
| 64              | Dōmyōji-yama,<br>Nr. Kokubu  | 12 0     | 6 2<br>to<br>6 7  | 6 4                          | 10 5          | 6 0     | 6 4              | 22 5     | S. 5° W.               | Simple conical                     | Gallery in line with E. wall. Contains hewn stone sarcophagus.<br>Do.  |
| 65              | Do.                          | 11 3     | 6 0               | 6 1                          | 10 9          | 5 5     | 4 6              | 22 0     | S. 5° W.               | Do.                                |  |
| 66              | Do.                          | 11 3     | 2 7               | 3 6                          | —             | —       | —                | —        | S.                     | Destroyed                          | Long cist. Walls of small stones. Roof exposed.<br>Do.   |
| 67              | Do.                          | 10 5     | 2 6               | 2 8                          | —             | —       | —                | —        | S. 20° W.              | Do.                                |  |
| 68              | Do.                          | 12 7     | 5 3               | 4 5                          | No gallery.   |         | —                | —        | S. 10° W.              | Do.                                | Dolmen standing above ground, with onestone for roof, and cist built of hewn blocks projecting beyond the back wall. |
| 69              | Do.                          | 13 7     | 5 7               | 8 0                          | 6 3           | 3 6     | 3 10             | 19 10    | S. 7° W.               | Do.                                | Dolmen entirely exposed. Gallery in line with E. wall.   |
| 70              | Do.                          | 16 4     | 5 0               | 7 0<br>4 0                   | Back<br>Front | —       | —                | —        | S. 4. W.               | Do.                                | "Allée converte" only partly covered with earth.   |
| 71              | Do.                          | 11 3     | 6 7               | 7 10                         | 8 5           | 3 7     | 5 8              | 19 8     | S.W.                   | Do.                                | Gallery in line with E. wall.  |
| 72              | Do.                          | 15 8     | 7 6<br>to<br>6 10 | 7 6                          | 14 9          | 4 3     | 3 6              | 30 5     | S 40° W.               | Do.                                |  |
| 73              | Do.                          | 14 5     | 3 6               | ?                            | —             | —       | —                | —        | S.                     | Do.                                | "Allée converte."  |
| 74              | Do.                          | 26 0     | 6 0               | Back<br>4 9<br>Front<br>3 10 | —             | —       | —                | —        | S. 10° W.              | Do.                                | Do.  |
| 75              | Do.                          | 10 0     | 6 0               | 6 8                          | 12 0          | 4 9     | 4 5              | 22 0     | S. 15° W.              | Do.                                |  |
| 76              | Do.                          | 9 2      | 5 8               | 5 8                          | 7 6           | 3 10    | 5 8              | 16 8     | S. 15° E.              | Do.                                | Gallery in line with E. wall.  |
| 77              | Do.                          | 13 6     | 6 0               | 7 6                          | 14 0          | 4 2     | 3 6              | 27 6     | S. 20° W.              | Do.                                | Do.  |
| 78              | Do.                          | 13 2     | 6 5               | 6 5                          | 8 0           | 4 0     | 3 3              | 21 2     | S. 20° E.              | Do.                                |  |
| 79              | Do.                          | 11 0     | 4 5               | 7 0                          | Ruined.       |         | —                | —        | W. 10° S.              | Do.                                |  |
| 80 <sup>a</sup> | Do.                          | 11 0     | 6 0<br>to<br>4 3  | 6 7                          | Impf.         | 3 0     | 4 8              | —        | S.                     | Do.                                | Do.  |
|                 | PROV. KŌTSUKE.               |          |                   |                              |               |         |                  |          |                        |                                    |  |
| 81              | Omuro                        | 17 0     | 6 6<br>to<br>5 6  | 5 9                          | 26 0          | 4 0     | 5 6<br>to<br>7 0 | 48 0     | S. 12° E.              | Double, with two terraces and moat | Division between chamber and gallery marked by vertical slabs. Two similar slabs are set up 2 ft. from the entrance. |

| No. | Locality.                    | Chamber. |                             |  | Gallery.        |                  |         | Total L. | Direction of Entrance. | Mound.                            | Notes.  |
|-----|------------------------------|----------|-----------------------------|--|-----------------|------------------|---------|----------|------------------------|-----------------------------------|---|
|     |                              | L.       | Br.                         | H.   | L.              | Br.              | H.      |          |                        |                                   |   |
|     | PROV. KÔTSUKE<br>—continued. | ft. in.  | ft. in.                     | ft. in.                                    | ft. in.         | ft. in.          | ft. in. | ft. in.  |                        |                                   |   |
| 82  | Ômuro                        | 21 0     | 8 4                         | 7 6  | 6 0             | 4 0              | 7 0     | 27 0     | S 25° W.               | Double, with one terrace and moat | Two low slabs set across the floor divide the chamber into two parts, and another separates the chamber from the gallery. |
| 83  | Oya                          | 19 6     | 7 0<br>to<br>6 0            | 6 6  | Stones removed. |                  |         | —        | S. 10° E.              | Do.                               |   |
| 84  | Nr. Oya                      | 19 0     | Back<br>9 2<br>Front<br>6 7 | 8 0<br>to<br>5 0                           | —               | —                | —       | —        | ?                      | Do.                               | "Allée converte."   |
|     | PROV. MINO.                  |          |                             |  |                 |                  |         |          |                        |                                   |   |
| 85  | Nr. Akasaka                  | 12 6     | 4 2<br>to<br>5 2            | 6 6  | 17 3            | 3 0              | 4 10    | 29 9     | S.E.                   | Simple conical                    | Chamber roof of four stones.  |
| 86  | Do.                          | 17 6     | 6 0                         | 7 6  | 17 6            | 3 0              | 5 6     | 35 0     | S.                     | Do.                               | Gallery in line with W. wall. Chamber roof of four stones.  |
| 87  | Do.                          | 17 6     | 4 0                         | —  | —               | —                | —       | —        | S.E.                   | Destroyed                         | "Allée converte" in ruined condition.   |
| 88  | Do.                          | 27 0     | 4 4                         | —  | —               | —                | —       | —        | S.                     | Do.                               | Do.   |
| 89  | Do.                          | 5 0      | 2 3                         | { Roof stones }<br>{ removed. } Imperfect. |                 |                  | —       | —        | S.                     | Do.                               |   |
|     | PROV. OMI.                   |          |                             |  |                 |                  |         |          |                        |                                   |   |
| 90  | Fumon-mura                   | 12 7     | 7 0                         | 8 0  | 10 6            | 3 6              | 4 0     | 23 1     | S. 23° W.              | Simple conical                    | Chamber roof of two stones.   |
| 91  | Taniguchi                    | 11 6     | 6 6                         | 8 9  | 10 0            | 2 9              | 4 0     | 21 6     | S. 5° E.               | Do.                               | Gallery in line with E. wall. Chamber roof of two stones.   |
|     | PROV. SETSU.                 |          |                             |  |                 |                  |         |          |                        |                                   |   |
| 92  | Sompachi                     | 21 0     | 10 8                        | 17 0                                       | 26 0            | 5 6<br>to<br>7 0 | 6 6     | 47 0     | S. 20° E.              | Terraced conical                  | Some huge stones in walls and roof. One measures c. 16 feet by 9 feet.  |
| 93  | Sakura-mura                  | 14 6     | 6 0<br>to<br>6 10           | 7 7  | Impf.<br>10 6   | 3 6              | 3 9     | —        | S.                     | Simple conical                    | Chamber roof of three stones.   |
| 94  | Nakayama                     | 17 0     | 7 4                         | 10 0                                       | 36 0            | 5 8              | 6 8     | 53 0     | S. 30° E.              | Destroyed.                        | Chamber roof of two stones. Contains a hewn stone sarcophagus.  |
| 95  | Yamamoto                     | 9 2      | 5 6                         | 6 0  | 21 3            | 3 10             | 5 0     | 30 5     | S. 10° E.              | Simple conical                    | Contains fragments of terra-cotta sarcophagus. Roof stone c. 9 feet by 8 feet.  |
| 96  | Do.                          | 12 0     | 5 9                         | 7 9  | Impf.           | 3 5              | 5 0     | —        | S. 30° E.              | Do.                               |   |

| No.              | Locality.                   | Chamber. |                  |                  | Gallery. |         |         | Total L. | Direction. of Entrance. | Mound.                                     | Notes.   |
|------------------|-----------------------------|----------|------------------|------------------|----------|---------|---------|----------|-------------------------|--|--|
|                  |                             | L.       | Br.              | H.               | L.       | Br.     | H.      |          |                         |  |  |
|                  | PROV. SETTSU<br>—continued. | ft. in.  | ft. in.          | ft. in.          | ft. in.  | ft. in. | ft. in. | ft. in.  |                         |  |  |
| 97               | Tsukahara                   | 11 5     | 6 5              | 7 5              | Do.      | 2 6     | —       | —        | S.E.                    | Simple conical                             | Built of small boulders.   |
| 98               | Do.                         | 14 8     | 5 0              | 7 0              | 11 0     | 3 2     | 5 6     | 25 6     | S. 5° W.                | Do.  | Gallery in line with E. wall.  |
| 99               | Do.                         | 14 8     | 4 6              | 6 8              | 2 10     | 3 4     | 4 2     | 17 6     | S. 23° W.               | Do.  | Gallery in line with E. wall of chamber. Chamber roof of five stones.  |
| 100              | Do.                         | 9 7      | 5 0              | —                | 5 0      | 2 7     | —       | —        | S.W.                    | Do.  | Gallery in line with W. wall of chamber.   |
| 101              | Mi-no-hara                  | 22 2     | 7 6              | 10 6             | 24 0     | 6 0     | 6 0     | —        | S. 25° E.               | Ruined conical (terraced?). Traces of moat | Contains two stone sarcophagi. Walls and roof of huge stones.  |
|                  | PROV. SHINANO.              |          |                  |                  |          |         |         |          |                         |  |  |
| 102              | Nr. Matsushiro              | 14 6     | 7 0<br>to<br>9 3 | 8 0              | 15 0     | 5 0     | 7 0     | 29 6     | S. 30° W.               | Simple conical                             | Chamber roof of four stones.   |
| 103              | Do.                         | 18 0     | 5 6<br>to<br>4 2 | 7 5              | 6 0      | 3 2     | 6 1     | 24 0     | S. 35° W.               | Do.  | Gallery in line with E. wall. Chamber roof of four stones.   |
| 104              | Do.                         | 14 0     | 6 9<br>to<br>4 9 | 6 9<br>to<br>8 3 | Impf.    | 4 0     | 6 0     | —        | S. 16° E.               | Do.  | Chamber roof of four stones.   |
|                  | PROV. TAMBA.                |          |                  |                  |          |         |         |          |                         |  |  |
| 105              | Rokuya, near Kamcoka        | 14 4     | 6 9              | 9 0              | 9 0      | 3 6     | 4 0     | 23 4     | S. 29° W.               | Conical with two terraces                  | Rude stone shelf 5 feet 3 inches broad by 13 inches thick, projects from back wall. Chamber roof of two stones.  |
| 106              | Do.                         | 11 6     | 6 6<br>to<br>8 0 | 8 0              | 18 4     | 4 9     | 4 4     | 29 10    | S.                      | Simple conical, ruined                     | Rude stone shelf 3 feet 7 inches broad by 14 inches thick, projects from back wall. Chamber roof of two stones.  |
| 107              | Do.                         | 12 0     | 7 2              | 7 6              | 22 0     | 4 0     | —       | —        | W. 5° N.                | Do.  | Rude stone shelf 3 feet 10 inches broad by 15 inches thick, projects from back wall. Chamber roof of two stones. |
| 108              | Do.                         | 11 9     | 6 5              | 8 6              | 4 0      | 3 0     | —       | —        | S. 5° W.                | Do.  | Chamber roof of three stones.  |
| 109              | Do.                         | 13 6     | 5 0              | —                | Impf.    | 3 0     | —       | —        | S. 23° W.               | Do.  | Chamber roof of two stones.  |
| 110              | Do.                         | 10 10    | 6 0              | 7 0              | Do.      | 4 2     | 5 0     | —        | S. 23° E.               | Do.  | Chamber roof of one stone.   |
|                  | PROV. TOSA.                 |          |                  |                  |          |         |         |          |                         |  |  |
| 111 <sup>a</sup> | Ryōseki                     | 12 2     | 6 0<br>to<br>5 3 | —                | —        | 2 2     | —       | —        | W.                      | —  | —  |
| 112              | Do.                         | 11 6     | 8 0              | 5 0              | —        | —       | —       | —        | S. 25° E.               | —  | "Allée convertée."   |

<sup>a</sup> 111 to 114 were reported to me by Dr. E. Naumann, late Director of the Geological Survey of Japan.

| No.              | Locality.                  | Chamber. |                  |         | Gallery. |                  |                   | Total L. | Direction of Entrance. | Mound.  | Notes.  |
|------------------|----------------------------|----------|------------------|---------|----------|------------------|-------------------|----------|------------------------|---|---|
|                  |                            | L.       | Br.              | H.      | L.       | Br.              | H.                |          |                        |   |   |
|                  | PROV. TOBA.<br>—continued. | ft. in.  | ft. in.          | ft. in. | ft. in.  | ft. in.          | ft. in.           | ft. in.  |                        |   |   |
| 113              | Ryōseki                    | 9 0      | 7 0<br>to<br>6 0 | —       | Impf.    | 2 0              | —                 | —        | —                      | —   | Roof stones all removed.  |
| 114 <sup>a</sup> | Asakura                    | 17 3     | 7 4              | 7 9     | 14 9     | 4 3<br>to<br>6 3 | 3 7               | 32 0     | —                      | —   | Built of well-squared blocks.   |
|                  | PROV. YAMA-<br>SHIRO.      |          |                  |         |          |                  |                   |          |                        |   |   |
| 115              | Andogabashi                | 17 10    | 8 5              | 11 4    | 26 2     | 5 2              | 5 8               | 44 0     | S. 5° W.               | Conical with two terraces and moat            | Chamber roof of three stones.   |
| 116              | Ōkamedani                  | 12 0     | 8 0<br>to<br>6 9 | 10 0    | 28 0     | 4 6              | 5 5               | 40 0     | S. 30° E.              | Conical with one terrace                      | Chamber roof of two stones.   |
|                  | PROV. YAMATO.              |          |                  |         |          |                  |                   |          |                        |   |   |
| 117              | Iirano.                    | 9 9      | 4 10             | 3 10    | 4 8      | 4 6              | 3 10              | 14 5     | S. 30° E.              | Simple conical                                | Built of large well-squared blocks.   |
| 118              | Samida.                    | 22 2     | 8 7              | 11 0    | 26 5     | 5 1              | 4 1               | 48 7     | S. 25° E.              | Do.   | Chamber roof of three stones.   |
| 119              | Myōhōji                    | 16 6     | 10 6             | 9 0     | 19 6     | 6 7              | 5 3               | 36 0     | S. 23° E.              | Do.   | Built of large well-hewn blocks. The roof stone of the chamber measures 20 feet by 12 feet by 7 feet. Contains a hewn stone sarcophagus.                        |
| 120              | Nr Misc                    | 20 0     | 14 0             | 14 0    | 14 0     | 4 3              | 5 0               | 34 0     | N 25° E.               | Double, with traces of two terraces           | Gallery in line with E.S.E. side. Chamber roof of four stones.  |
| 121              | Do.                        | 24 0?    | 18 0?            | ?       | 60 0     | 4 0<br>to<br>8 0 | 8 6<br>to<br>10 0 | —        | S.                     | Double with three terraces and traces of moat | Built of immense rude megalithic blocks. Chamber contains two hewn stone sarcophagi. It is the largest dolmen in Japan. One of the roof stones is 16 feet long. |
| 122              | Nr. Teraguchi-<br>mura     | 13 10    | 8 9              | 8 8     |          | Imperfect.       |                   | —        | S. 23° E.              | Simple conical                                | Chamber roof of two stones.   |
| 123              | Do.                        | 20 6     | 9 10             | 11 9    | 26 0     | 5 10             | 6 10              | 46 6     | S. 5° E.               | Double  | Chamber roof of four stones.  |
| 124              | Yamaguchi                  | 16 2     | 7 7              | 8 10    | 15 7     | 5 0              | 5 0               | 31 9     | S. 5° W.               | Simple conical                                | Chamber almost covered by one stone. Gallery in line with E. wall.  |
| 125              | Narahara                   | 18 4     | 9 10             | 13 4    | 9 0      | 5 0              | 7 0               | 27 4     | S. 23° E.              | Do.   | Chamber roof of three stones.   |
| 126              | Do.                        | 16 9     | 9 3              | 11 0    | 17 8     | 4 6              | 5 7               | 34 5     | S.E.                   | Do.   | Chamber roof of three stones. One stone 8 feet by 9 feet.   |
| 127              | Koshi                      | 14 9     | 8 10             | 8 10    | 36 7     | 6 5              | 5 6<br>to<br>6 2  | 51 4     | S 5° E.                | Conical, with two terraces and a moat         | Built of huge well-hewn blocks. Roof of chamber a single stone.   |

| No. | Locality.                   | Chamber. |         |         | Gallery. |         |         | Total L. | Direction of Entrance. | Mound.         | Notes.  |
|-----|-----------------------------|----------|---------|---------|----------|---------|---------|----------|------------------------|----------------|---|
|     |                             | L.       | Br.     | H.      | L.       | Br.     | H.      |          |                        |                |   |
|     | PROV. YAMATO<br>—continued. | ft. in.  | ft. in. | ft. in. | ft. in.  | ft. in. | ft. in. | ft. in.  |                        |                |   |
| 128 | Abe-mura                    | 16 5     | 9 2     | 8 5     | 24 5     | 6 1     | 5 8     | 40 10    | S. 5° W.               | Simple conical | Walls of chamber of hewn stones in four courses. Roof of chamber a single stone.                      |
| 129 | Do.                         | 14 8     | 8 3     | 6 11    | 23 9     | 6 5     | 5 3     | 38 5     | E. 39° S.              | Do.            | Megalithic. Stones broken, but not hewn. Contains hewn stone sarcophagus. Chamber roof of two stones. |
| 130 | Do.                         | 15 8     | 7 10    | 7 10    | 10 2     | 6 0     | 4 10    | 25 10    | S. 20° W.              | Do.            | Built of rude megalithic blocks, one measuring 10 feet by 6 feet 3 inches by 5 feet 4 inches.         |

TABLE II.—SARCOPHAGI IN JAPANESE DOLMENS AND BURIAL MOUNDS.

| No. | Description.                  | Occurrence.             | Locality.                 | Orientation. | External Dimensions. |         |         | Internal Dimensions. |         |         | Thickness of Sides. | Remarks.  |
|-----|-------------------------------|-------------------------|---------------------------|--------------|----------------------|---------|---------|----------------------|---------|---------|---------------------|---|
|     |                               |                         |                           |              | L.                   | Br.     | H.      | L.                   | Br.     | D.      |                     |   |
|     | STONE SARCOPHAGI.             |                         |                           |              | ft. in.              | ft. in. | ft. in. | ft. in.              | ft. in. | ft. in. | inches.             | The cover in all cases is a single hewn block.                                    |
| 1   | Coffer of a single hewn block | In dolmen Tab. I. No. 8 | Bizen. Nr. Okayama        | S. 15° E.    | —                    | —       | —       | 5 4                  | 2 3     | —       | 6 to 7              | Cover gone.   |
| 2   | Do.                           | Do. No. 13              | Bizen. Kuroda             | W. 10° S.    | 7 11                 | 3 10    | —       | 6 3                  | 2 4     | 1 9     | 9 to 10             | Cover 1 foot 9 inches thick.  |
| 3   | Coffer of hewn slabs          | Do. No. 15              | Harima. Nr. Himeji        | S.           | —                    | —       | —       | 5 9                  | 2 2     | 2 3     | 6½                  | Cover 1 foot 1 inch thick.  |
| 4   | Coffer of natural slabs       | Do. No. 21              | Hōki. Nr. Kurayoshi       | W. 15° N.    | —                    | —       | —       | 7 2                  | 3 10    | 4 4     | e. 6                | Cover gone.   |
| 5   | Coffer of hewn slabs          | Do. No. 36              | Izumo Imaichi             | S. 30° W.    | —                    | —       | —       | 5 1                  | 2 5     | 1 11    | 9 to 10             | In outer chamber. Cover 11 inches thick.  |
| 6   | Coffer of single hewn block   | Do. No. 36              | Do.                       | Do.          | 10 11                | 5 6     | 4 6     | Top.<br>9 0          | 3 8     | 3 6     | —                   | In inner chamber. Cover 1 foot 11 inches thick. Large opening hewn in front side. |
|     |                               |                         |                           |              |                      |         |         | Bottom.<br>9 4       | 4 6     |         |                     |   |
| 7   | Coffer of three hewn blocks.  | Do. No. 37              | Do.                       | S. 25° W.    | —                    | —       | —       | 7 4                  | 2 9     | 1 6     | 7                   | Cover 1 foot 5 inches thick.  |
| 8   | Coffer of single hewn block   | Do. No. 38              | Izumo. Enya, nr. Imaichi  | W. 25° S.    | 9 1                  | 4 4     | 4 1     | Top.<br>7 4          | 2 10    | 3 2     | 7 to 10             | Large opening. hewn in front side. Cover 1 foot 8 inches thick.                   |
|     |                               |                         |                           |              |                      |         |         | Bottom.<br>7 9       | 3 3     |         |                     |   |
| 9   | Do.                           | Do. No. 38              | Do.                       | S. 25° E.    | 6 10                 | 4 5     | 3 0     | 5 10                 | 3 1     | 2 3     | 6 to 8              | Do.   |
| 10  | Do.                           | Do. No. 39              | Izumo. Yasui, nr. Imaichi | S. 40° W.    | —                    | —       | —       | 6 6                  | 2 7     | 1 7     | 8 to 9              | Large opening hewn in front side. Cover 2 feet 2 inches thick.                    |
| 11  | Do.                           | Do. No. 39              | Do.                       | Do.          | —                    | —       | —       | 7 1                  | 3 2     | 1 3     | 6 to 7              | Cover gone.   |

| No. | Description.                    | Occurrence.                         | Locality.              | Orientation.     | External Dimensions. |         |         | Internal Dimensions. |                       |         | Thick-ness of Sides. | Remarks.  |
|-----|---------------------------------|-------------------------------------|------------------------|------------------|----------------------|---------|---------|----------------------|-----------------------|---------|----------------------|---|
|     |                                 |                                     |                        |                  | L.                   | Br.     | H.      | L.                   | Br.                   | D.      |                      |   |
|     | STONE SARCOPHAGI<br>—continued. |                                     |                        |                  | ft. in.              | ft. in. | ft. in. | ft. in.              | ft. in.               | ft. in. | inches.              |   |
| 12  | Coffer of hewn slabs            | Do. No. 40                          | Do.                    | S. 15° E.        | —                    | —       | —       | 4 11                 | 2 3                   | 1 8     | 7½                   | The cover in all cases is a single hewn block.<br>Cover 7 inches thick. |
| 13  | Do.                             | Do. No. 40                          | Do.                    | Do.              | —                    | —       | —       | 5 8                  | —                     | —       | —                    | Ruined. Ends only left.<br>Cover of two rough slabs.                    |
| 14  | Coffer of rudely hewn slabs     | Do. No. 50                          | Kawachi. Hattori-gawa  | W. 12° S.        | —                    | —       | —       | 5 7                  | 3 1                   | 2 5     | 17                   | Ruined. Cover a boulder hewn on lower side only.                        |
| 15  | Coffer of single hewn block     | Do. No. 64                          | Kawachi. Dōnyōji-yama  | S. 5° W.         | 7 0                  | 3 3     | 2 6     | 5 8                  | 2 3                   | 1 4     | 7½                   | Cover 1 foot 3 inches thick.  |
| 16  | Do.                             | Do. No. 65                          | Do.                    | Do.              | 6 9                  | 3 4     | 2 5     | 5 7                  | 2 2                   | 1 3     | c. 7                 | Do.   |
| 17  | Do.                             | On summit of burial mound (conical) | Kawachi. Nr. Dōnyōji   | S.               | —                    | —       | —       | 6 2                  | 1 9                   | 1 4     | c. 5                 | Do.   |
| 18  | Do.                             | In burial mound (ruined)            | Kawachi. Nr. Furu-ichi | N 15° E.         | —                    | —       | 2 1     | 5 8                  | Top. 1 10<br>Btm. 1 5 | 0 10    | c. 5½                | Cover 1 foot 5 inches thick.<br>Head of skeleton N. 15° E.              |
| 19  | Coffer of hewn slabs            | Double mound                        | Kōtsuke. Ambori        | W. 20° S.        | —                    | —       | —       | 5 9                  | 2 3                   | 2 7     | c. 8                 | Cover gone.   |
| 20  | Coffer of single hewn block     | In dolmen Tab. I. No. 94            | Settsu. Nakayama       | S. 30° E.        | 5 10                 | 3 6     | 2 4     | —                    | —                     | —       | —                    | Cover 1 foot 7 inches thick.  |
| 21  | Do                              | Do. No. 101                         | Settsu. Mi-no-hara     | S. 25° E.        | 6 7                  | 2 9     | 2 3     | 5 5                  | 1 11                  | 1 2     | c. 5                 | Cover 10 inches thick.  |
| 22  | Coffer of hewn slabs            | Do. No. 101                         | Do.                    | Do.              | —                    | —       | —       | 6 0                  | 2 11                  | 3 1     | c. 9                 | Cover 2 feet 3 inches thick.  |
| 23  | Coffer of single hewn block     | Do. No. 119                         | Yamato. Myōhōji        | S. 23° E.        | 7 9                  | 3 9     | —       | 6 1                  | 2 3                   | 1 6     | 9 to 10              | Cover 1 foot 3 inches thick.  |
| 24  | Do.                             | Do. No. 121                         | Yamato. Misc           | One S.<br>One W. | —                    | —       | —       | —                    | —                     | —       | —                    | Dimensions unknown as dolmen full of water.                             |
| 25  | Do.                             | Do. No. 122                         | Yamato. Abe-mura       | E. 39° S.        | 7 10                 | 4 9     | 3 1     | —                    | —                     | —       | —                    | Cover 2 feet 1 inch thick.  |

| No. | Description.                             | Occurrence.             | Locality.              | Orientation. | External Dimensions. |         |         | Internal Dimensions. |         |         | Thick-ness of Sides. | Remarks.                                       |
|-----|--|-------------------------|------------------------|--------------|----------------------|---------|---------|----------------------|---------|---------|----------------------|--|
|     |  |                         |                        |              | L.                   | Br.     | H.      | L.                   | Br.     | D.      |                      |  |
|     | STONE SARCOPHAGI<br>— <i>continued</i> . |                         |                        |              | ft. in.              | ft. in. | ft. in. | ft. in.              | ft. in. | ft. in. | inches.              | The cover in all cases is a single hewn block. |
| 27  | Coffer of single hewn block              | In ruined dolmen        | Yamato.<br>Nr. Gose    | S. 23° W.    | 7 10                 | 3 10    | 3 6     | 6 2                  | 2 6     | 1 9     | c. 8                 | Cover 2 feet thick.                            |
|     | TERRA-COTTA SARCOPHAGI.                  |                         |                        |              |                      |         |         |                      |         |         |                      |  |
| 28  | Coffer in one piece                      | In dolmen now destroyed | Settsu.<br>Sakuraidani | —            | —                    | —       | —       | 4 9                  | 1 4     | 0 7½    | c. 1                 |  |
| 29  | Coffer in two pieces                     | ?                       | Bizen.<br>Isokaminura  | —            | —                    | —       | —       | 5 2                  | 1 8     | 1 2     | 1½ to 2              |  |