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# Japanese Kofun in Maps given by a Spaceborne Digital Elevation Model based on Multiple Satellite Data Sets

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## **Japanese Kofun in Maps given by a Spaceborne Digital Elevation Model based on Multiple Satellite Data Sets**

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**Abstract:** In the proposed discussion we stress the possibility to use maps from Spaceborne Digital Elevation Models (DEMs) to analyze the locations of Kofun, the ancient tombs in Japan. Some of these tombs have the form of very large tumuli. The Digital Elevation Model here used is that proposed by Yamazaki, Ikeshima, Tawatari, Yamaguchi, O'Loughlin, Neal, Sampson, Kanae and Bates, in the Geophysical Research Letters, 2017, and implemented at the web site [it-ch.topographic-map.com](http://it-ch.topographic-map.com) . On Kofun and their orientation, a large literature in Japanese exists: we will give references about related archaeoastronomical studies too. Details about the burial chambers in the kofun having a keyhole-shape are given. The presence of two burial chambers inside is giving a direction coherent with the long axis of the tumulus. We will also recommend the reading of detailed discussions (in Italian), that have been provided by G. Poncini in the Enciclopedia dell' Arte Antica (1995) and M. Hudson about archaeology in Japan 2002.

**Keywords:** Kofun, Daisen Kofun, Daisenryo Kofun, Zenpōkōen Kofun, Japan, Satellites, Spaceborne Digital Elevation Models, Archaeoastronomy, Cultural Astronomy, Google Earth, Satellite imagery, Keyhole tombs of Sahara, Keyhole tombs of Arabia.

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### Introduction

An image of the day (October 11, 2017), provided by NASA Earth Observatory (Patel, 2017), is showing an area in Japan, with some specific sites encircled. The largest one is the Daisenryo Kofun (alternately, Daisen Kofun). Kofun are large tombs formed by tumuli. Of the Daisen Kofun, Kasha Patel (2017) tells that it is shaped like a “keyhole”, however the structure is quite different from the keyhole tombs observed in the Sahara (Sparavigna, 2013, 2014, 2018). In Japan, this site and others, defined as keyhole kofun, consist of three-tiered mounds, surrounded by moats (Fig. 1 on the left). The mounds is composed by two parts: the part in the front of the mound is of trapezoidal shape, the rear part is round. Actually, the Japanese name of a keyhole-shaped mound is “zenpōkōen”, which means literally “square front, rear round”.



*Fig. 1 - On the left, a kofun as we can see from a Google Earth image, and on the right a keyhole tomb of Sahara, made by fences of stones. Many thanks to Google Earth.*

We observed in 2013, 2014, and 2018 the keyhole tombs in Sahara (Fig.1 on the right), and the orientation of their main axes in the direction of the sunrise, by means of Google Earth satellite images. We can easily see that the keyhole tombs in Japan (Fig.1 on the left) and those of Sahara are totally different. So it would be better to use, for these burial sites in Japan, the term “zenpōkōen”, “square front, round rear”.

In (Patel, 2017), it is told that Daisenryo Kofun is one of about fifty burial sites still intact today in the city of Sakai, near Osaka. “Each kofun (which means “ancient grave”) varies in size and takes different shapes - but most often keyholes, squares, or circles. Kofun were popular in Japan between the third and sixth century, which is referred to as the Kofun Period” (Patel, 2017). The image of the day from NASA is giving the Mozu-Furuichi Kofun Group. Kasha Patel gives a detailed explanation of the colors seen in the image.

“The Daisenryo Kofun is the largest in Japan, but little is known about what lies inside. One glimpse came in 1872, when a severe storm damaged the site and revealed a treasure-trove of valuables from inside - helmets, glass bowls, and clay figures known as haniwa. Because kofun are considered sacred religious sites, further archaeological research was prohibited. Even today, no one is permitted to go beyond the bridge over the second moat!” (Patel, 2017). This sentence tells that archaeological investigation on kofun are forbidden, however many archaeological studies exist, and evidence is provided by the large literature in Japanese on Kofun and Kofun Period.

About Daisenryo, on October 23, 2018, it was told in [The Mainichi](#) that “The Imperial Household Agency and the municipal government of this western Japan city began excavating "Daisen Kofun," the largest ancient mounded tomb in the country, on Oct. 23”. Of the storm of 1872 and the related archaeological studies, we will talk in a section devoted to Daisenryo. In fact, it is not true that “little is known about what lies inside”.

In the following discussion, we will consider the orientation of kofun. We will stress the possibility to use maps from Spaceborne Digital Elevation Models to analyze the locations of the mounds. The DEM used is that proposed by Yamazaki, Ikeshima, Tawatari, Yamaguchi, O'Loughlin, Neal, Sampson, Kanae and Bates, in the Geophysical Research Letters, 2017, and implemented at the web site <https://it-ch.topographic-map.com>.

On Kofun and their orientation, a large literature in Japanese exists: we will give references about related archaeoastronomical studies too. Details about the burial chambers in the kofun having a keyhole-shape are given. The presence of two burial chambers inside is giving a direction coherent with the long axis of the tumulus. We will also recommend the reading of two detailed discussions (in Italian), that have been provided by G. Poncini in the Enciclopedia dell' Arte Antica (1995) and M. Hudson about archaeology in Japan 2002.

## **Early Japan**

Let us see the period in the history of Japan when kofun appeared (we can find concise information in [www.japan-guide.com](http://www.japan-guide.com)). The first period of the early Japan is the Jomon Period (13000 BC to 300 BC). During this time, inhabitants of the Japanese archipelago were gatherers, fishers and hunters. During the Yayoi Period (300 BC to 250 AD), the rice cultivation was imported round 100 BC. Agriculture induced the evolution of social classes, and the country began to unite under powerful land owners. “The Yayoi period brought also the introduction of iron and other modern ideas from Korea into Japan. Again, [as in the case of the Jomon period] its pottery gave the period its name”. Then, we find the Kofun Period (250 – 538). During this period, “a center of power had developed in the fertile Kinai plain, and by about 400 AD the country was united as Yamato Japan with its political center in and around the province of Yamato (about today's Nara Prefecture)”.

The name of this period in the history of Japan is coming from the tombs that we have previously introduced. “Yamato Japan extended from Kyushu to the Kinai plain, but did not yet include the Kanto, Tohoku and Hokkaido. The emperor was ruler of Yamato Japan and resided in a capital that was moved frequently from one city to another. However, the Soga clan soon took over the actual political power, resulting in a system in which most of the emperors only acted as the symbol of the state and performed Shinto rituals. During the Asuka Period (538-710), the influence from the mainland increased strongly thanks to friendly relations to the kingdom of Kudara (or Paikche) on the Korean peninsula. Buddhism was introduced to Japan in the year 538 or 552 and was promoted by the ruling class”.

From [en.wikipedia.org](http://en.wikipedia.org): “The Kofun period (古墳時代, Kofun jidai) is an era in the history of Japan from about 300 to 538 AD (the date of the introduction of Buddhism), following the Yayoi period. The Kofun and the subsequent Asuka periods are sometimes collectively called the Yamato period. ... Continuing from the Yayoi period, the Kofun period is characterized by a strong influence from the Korean Peninsula; archaeologists consider it a shared culture across the southern Korean Peninsula, Kyūshū and Honshū. (Barnes, 2015). The word kofun is Japanese for the type of burial mound dating from this era, and archaeology indicates that the mound tombs and material culture of the elite were similar throughout the region. From China, Buddhism and the Chinese writing system were introduced near the end of the period. The Kofun period recorded Japan's earliest political centralization, when the Yamato clan rose to power in southwestern Japan, established the Imperial House, and helped control trade routes across the region”. (Denoon et al., 2001).

## **La tomba dell' Uji No Kami (in Italian and English)**

In [www.giapponeinitalia.org](http://www.giapponeinitalia.org), testo redatto nel 2021, troviamo discussi i tumuli del periodo Kofun. “Facendo un passo indietro, nel periodo Yayoi, già possiamo trovare in nuce questa forma di sepoltura. Tuttavia, come vedremo, germoglierà appieno solo nel periodo Kofun. Le forme di queste collinette ... poteva variare da forme geometricamente semplici, a più complesse. ... la più caratteristica è “a buco di serratura” , in giapponese zenpōkōen. Al suo interno, il defunto era accompagnato da un’innumerabile serie di oggetti e manufatti che hanno permesso agli archeologi di ricostruire con precisione abitudini e società. ... Il manufatto più rappresentativo è l’haniwa, una statuetta in terracotta che riproduceva un elemento della vita reale, fossero case, persone o animali.” Prosegue poi l’articolo dicendo che il territorio era suddiviso in “regni indipendenti l’uno dall’altro, con una famiglia nobile a capo e un *kami*<sup>1</sup> protettore”. Questo sistema sociale ha un nome ben definito, che è *uji-kabane*. Il termine *uji* indica la famiglia in senso ampio, e quindi indica un insieme di individui legati da vincoli di sangue o meno, che controlla un territorio. L’uji è un “clan”.

“Al vertice era l’*uji no kami*, il capofamiglia, discendente diretto dell’*ujigami*, il kami protettore della stirpe. Attorno a questo gruppo ne ruotavano altri, vincolati ad esso ed altrettanto rigidi in termini di successione: i *be*. I *be* erano unità lavorative al servizio di un uji, devote al kami da cui ricevevano benevolenza e protezione, strettamente divise per occupazione. [Esistevano] *Be* di pescatori, contadini, musicisti, tessitori, cantastorie e così via”. I *be* erano la “forza motrice” di ognuno dei clan comandati dalla nobiltà guerriera. “I rapporti tra gli uji erano, come ci si può aspettare, fondati su guerra e diplomazia. La rete costruita lungo il Giappone di punti di potere era necessariamente portata in un secondo momento ad concentrarsi in un punto, il futuro centro imperiale.” Emerge così lo Yamato<sup>2</sup>.

“Il clan Yamato si guadagnò il ruolo di uji egemone nel territorio giapponese, e il periodo kofun ci mostra finalmente i petali del primo crisantemo, la famiglia imperiale discendente da Amaterasu. L’uji no kami era un capo guerriero ma anche un autorità spirituale, e i riti di purificazione avevano un ruolo fondamentale nella vita scandita dai ritmi naturali. Non stupisce dunque che il clan Yamato, discendente dalla dea del Sole, abbia attratto tanto la fedeltà quando la devozione di famiglie meno potenti. Le tombe kofun, oltre a moltissime armi e armature, conservano una moltitudine di specchi di bronzo, simbolo del culto solare. Un gioiello, una spada e uno specchio erano i simboli del potere che nel periodo Kofun, si tramandavano gli uji no kami.”

L’articolo ricorda poi i rapporti del Giappone con la Corea. E poi conclude con il termine *kabane*, ovvero i “titoli”. “Si tratta del fornire un nome al rapporto tra gli uji no kami dei clan vicini al clan Yamato, in una gerarchia di ranghi alla quale faceva capo quest’ultimo”. I *kabane* erano titoli nobiliari a tutti gli effetti. Essi “sancivano tanto il

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1 Kami è la parola giapponese per indicare una divinità, un nume, o uno spirito soprannaturale.

2 Il popolo Yamato o Wajin (letteralmente "popolo di Wa") è il gruppo etnico nativo dominante del Giappone. Wa e Yamato erano i nomi che la Cina antica usava per riferirsi a un gruppo etnico che viveva in Giappone.

livello quanto il ruolo all'interno della corte, e sono il tratto distintivo della politica interna del periodo kofun. I più ambiti erano muraji e omi, veri e propri maestri di cerimonia. A fregiarsi di un simile onore furono ben presto anche i membri di un clan di origine coreano, i Soga. Già da tempo veniva riconosciuto il valore all'interno della società Yamato a nobili coreani, ma i Soga, grazie soprattutto all'introduzione del buddhismo a corte, nella metà del VI secolo, crebbero in importanza”.

In [www.giapponeitalia.org](http://www.giapponeitalia.org), 2021, we find discussed the society of Kofun period, the name of which is coming from that of the ancient tumuli. In the Yayoi period, we can already find this form of burial tumulus “in nuce”, but it flourished only in the Kofun period. The shapes of these artificial hills ... could range from geometrically simple to more complex shapes. ... the most characteristic is the "keyhole", in Japanese zenpōkōen. Inside it, the deceased was accompanied by an innumerable series of objects and artifacts that allowed archaeologists to accurately reconstruct habits and society. ... The most representative artifact is the haniwa, terracotta statuettes that reproduced elements of real life, whether they were houses, people or animals. The article continues by telling that the territory was divided into kingdoms, independent of each other. Each kingdom had a noble family at its head and a kami as its protector. This social system has a definite name, which is uji-kabane. The term uji indicates the family in a broad sense, and therefore indicates a set of individuals linked by blood ties or not, which was controlling the territory. The uji is a "clan".

At the top of this system there was the uji no kami, the head of the family, a direct descendant of the ujigami, the kami protector of the lineage. Other people revolved around this group, bound to it and subjected to rigid rules: the be. The be were units of workers, which were in the service of a uji, devoted to the kami of it, from which they received benevolence and protection, strictly divided by their occupations. Be of fishermen, farmers, musicians, weavers, storytellers and so on existed. The be were the "driving force" of each of the clans led by the warrior nobility.

Relations between the uji were, as might be expected, based on war and diplomacy. The network built along the Japan, made of local centers of power was necessarily forced, at a later time, to concentrate on one center, the future imperial center. In this manner, it emerged the Yamato. The Yamato clan earned the role of hegemonic uji and the Kofun period finally displayed the petals of the first chrysanthemum, the imperial family that was descending from Amaterasu. The uji no kami was a warrior leader but also a spiritual authority, and purification rites played a fundamental role in a life marked by natural rhythms. It is therefore not surprising that the Yamato clan, descending from the sun goddess, has attracted both loyalty and devotion of less powerful families. The kofun tombs, in addition to many weapons and armor, preserve a multitude of bronze mirrors, a symbol of the solar cult. A jewel, a sword and a mirror were the symbols of power that, in the Kofun period, were handed down by the uji no kami.

The article then recalls Japan's relations with Korea. And then it concludes with the term kabane, or the "titles". It is a question of giving a name to the relationship between the uji no kami of the clans close to the Yamato clan, in a specific hierarchy of ranks.





Goto “shows that a variety of archaeoastronomical research has been done in Japan”. In particular, as evidenced by the large bibliography, many studies have been performed concerning the orientations of ancient sites.

Akira Goto (2018) in particular, examines the keyhole shape mounds. He continues remembering the British engineer William Gowland too. “Kofun studies, which [William] Gowland<sup>3</sup> [1897] pioneered and had been further developed by Japanese archaeologists, have found several types of burial mounds: rectangular, circular, keyhole shape (square at the front and rounded in the rear), squares both at front and in the rear type, and several others. The discussion [by Goto, 2018] examines the keyhole-shape mounds, whose construction started at the beginning of the Kofun Period (late third century) and contains many giant mounds that were likely royal tombs. ... [Akira Goto] would like to mention that *the main axis of the burial mound and the orientation of burial chamber do not necessarily correspond. In some cases, burial chambers are lain at right angle to the main axis of burial mounds and there is a temporal as well as regional variation in their relationship* (e. g. Goto 1936; Kobayashi 1960; Shiraishi 1989; Hojo 2017 [see the references given in Goto, 2018]. Early researchers following Gowland continued to point out the regularity of burial orientation of Kofun mounds, namely eastern and northern orientation, according to the area. Although most of them recognised the particular orientation of burial mounds and burial chambers, researchers have proposed several different interpretations: topographical, symbolic, political, as well as astronomical. ... One of the leading figures of Kofun studies from 1950–1970s was Tadashi Saito, who suggested that the eastern orientation is similar to the custom of Shilla in the eastern part of the Korean Peninsula and northern orientation to Lelang Commandery in northern Korean Peninsula. Saito further argued that the eastern orientation was related to the worship of the Sun and that the northern orientation was the influence of Chinese Confucianism philosophy” (Goto, 2018).

Therefore, early researches have shown a regularity of “burial orientation of Kofun mounds, namely eastern and northern orientation, according to the area”. However, it is told by Akira Goto that several different interpretations exist: “topographical, symbolic, political, as well as astronomical. Topographic interpretations refer to the location of the mounds, such as at the mountain slope, ... Thus, the orientation of these mounds tends to accord with the direction of the slope” (Goto, 2018). Political interpretations of different orientations are linked to the different “social status of buried persons (Hojo 2017)”. Symbolic interpretations are relating orientation to landscape features such as sacred mountain. “Symbolic interpretations have often been combined with astronomical ones”, and see the detailed analysis in (Goto, 2018).

Concerning kofun burial places in Kinai<sup>4</sup> Area, central Japan (see also Hojo and Goto,

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3 William Gowland (16 December 1842 – 9 June 1922) was an English mining engineer who carried out archaeological work at Stonehenge and in Japan. He has been called the "Father of Japanese Archaeology". See references in [en.wikipedia.org/wiki/William\\_Gowland](https://en.wikipedia.org/wiki/William_Gowland)

4 Kinai (畿内, Capital Region) is a Japanese term denoting an ancient division of the country. Kinai is a name for the ancient provinces around the capital Nara and Heian-kyō. The name

2021), in Goto, 2018, we find that researchers recognized “the “kita-makura” chamber orientation, which is literally translated as “northern pillow.” The “northern pillow” suggests that the dead was buried with his/her head orienting to the north. This is the same thing as what Gowland called “southern aspect”, since the burial chamber is usually opened toward south. Until today, Japanese customs believe that it is not good to sleep with your head to the north, since the “northern pillow” position is a custom reserved only for the dead” (Goto, 2018). “In his recent book, entitled *The Orientation of Kofun and the Sun*, Yoshitaka Hojo reanalysed astronomical interpretations of Kofun burial orientations (Hojo 2017). Using astronomical simulation and calculation, Hojo has convincingly shown that the burials characterized as “northern pillow” are mostly lain within a range of the circular movement of Big Dipper”. In (Goto, 2018), many references are given and here only those in English are reported (Goto, 2021, Goto, 2016, Hojo, 2017, Renshaw et al., 2000, Renshaw, 2015).

And also from (Goto, 2021), mentioning (Gowland, 1897), we find again: “To summarize, early Japanese researchers following Gowland continued to point out the regularity of the burial orientation of burial mounds, namely eastern and northern orientations, which varied by area. Although most of them recognized the particular orientation of burial mounds and burial chambers, researchers have proposed several different interpretations: topographical, symbolic, political, as well as astronomical”.

In an article by J. Edward Kidder, Jr., entitled “Makimuku, Himiko and Yamatai: Solving the Puzzle”, 2015, we find told the following. “To return briefly to the era prior to the Japanese adoption of the continental system of southern orientation [the Gowland’s “southern aspect”] ... , the stage is particularly demonstrable in the construction of the early mounded tombs. Many of them, especially very large ones, are known as the zenpokoen (square front round back) type, popularly known in English as “keyhole-shaped.” Saito Tadashi looked at 394 tombs of the Early and Middle Kofun periods (3rd to 5th centuries), including excavated smaller round mounds in which the direction of the burial chamber had been determined, separating these as built on hilly and level terrain (Saitō, 1953, 1961).

The perplexing question has always been the extreme randomness of their orientation. Was there a system, such as facing the sun at certain times of the year, facing the residence of the deceased, facing a tomb of a revered ancestor, and so on? Were there regional differences and/or time differences in the first half of the Kofun period? Early ones, occasionally formed by cutting off the tail of a hill, naturally followed its direction. The orientation was then uncontrollable, and some scholars think this may have fixed an attitude that direction was not significant, but only size. The study includes 135 tombs on hilly terrain and 259 on level ground as indicated on the chart. In the entire group only WSW has no tomb facing it, but several other directions have only one. The point here is that, although the cardinal directions are generally preferred and south is obviously used more for level ground, even south has only 88 tombs (22%).

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is still used to describe part of the Kansai region, but the area of the Kinai corresponds only generally to the land of the old provinces. <https://en.wikipedia.org/wiki/Kinai>

*South has the highest percentage, but it is rivaled by west with 76 (19%). Japanese folklore contains many stories of protecting houses, palaces, temples, castles and even cities from the hostile spirits that attack from the north, the classic example being the Enryaku-ji for the city of Kyoto. Twenty tombs face north. Saito says there can be only one explanation: the Chinese principle of southern orientation had not yet been introduced”.*

Then, as told by Akira Goto, we have that “several different interpretations [exist]: topographical, symbolic, political, as well as astronomical”. For what concerns the topographical interpretation, DEM maps are fundamental.

### **DEM Maps**

For a study concerning topographical orientations, instead of using the satellite maps, such as those provided by Google Earth Pro, let us consider the maps from Spaceborne Digital Elevation Models (Yamazaki et al., 2017). Here some words from abstract of Yamazaki et al., 2017. “Spaceborne digital elevation models (DEMs) are fundamental input for many geoscience studies, but they still include nonnegligible height errors. [In Yamazaki et al., 2017, the researchers] introduce a high-accuracy global DEM at 3” resolution (~90 m at the equator) by eliminating major error components from existing DEMs. [They] separated absolute bias, stripe noise, speckle noise, and tree height bias using multiple satellite data sets and filtering techniques. After the error removal, land areas mapped with  $\pm 2$  m or better vertical accuracy were increased from 39% to 58%. Significant improvements were found in flat regions where height errors larger than topography variability, and landscapes such as river networks and hill-valley structures, became clearly represented. ... The newly developed DEM will enhance many geoscience applications which are terrain dependent.” Of course, DEM proposed in (Yamazaki, D., et al., 2017) is proper for studies of geoscience. However, it is also useful for investigating local landscapes, such as those of Kofun in Japan. And here we apply the model to Kofun.

We can use the web site <https://it-ch.topographic-map.com> . First, let me express many thanks to Yamazaki D., D. Ikeshima, R. Tawatari, T. Yamaguchi, F. O’Loughlin, J.C. Neal, C.C. Sampson, S. Kanae & P.D. Bates (Yamazaki et al., 2017), for their fundamental work on digital elevation data and models, and many thanks to the excellent web site at link <https://it-ch.topographic-map.com> which is fundamental for the maps.

Before showing the maps, let me add some further references to documents provided by the Monuments and Sites Division, Cultural Properties Department, Agency for Cultural Affairs, 3-2-2 Kasumigaseki, Chiyoda-ku, Tokyo, 100-8959, JAPAN. URL: <http://www.bunka.go.jp/english> (References: “Monuments and Sites Division, Agency Cultural Affairs”). In the Volume 2, the coordinates of the Mozu-Furuichi Kofun Group are given. In the Volume 4, a reconstruction of monuments is given: from it is also clear that the name “keyhole” is misleading.

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At the web page <https://en.wikipedia.org/wiki/Kofun> it is possible to find the list of UNESCO Kofun Groups. Other sites can be obtained from the lists of sites in Japan, such as the following:

[https://en.wikipedia.org/wiki/List\\_of\\_Historic\\_Sites\\_of\\_Japan\\_\(Ōsaka\)](https://en.wikipedia.org/wiki/List_of_Historic_Sites_of_Japan_(Ōsaka)),

[https://en.wikipedia.org/wiki/List\\_of\\_Historic\\_Sites\\_of\\_Japan\\_\(Tōkyō\)](https://en.wikipedia.org/wiki/List_of_Historic_Sites_of_Japan_(Tōkyō)),

[https://en.wikipedia.org/wiki/List\\_of\\_Historic\\_Sites\\_of\\_Japan\\_\(Okayama\)](https://en.wikipedia.org/wiki/List_of_Historic_Sites_of_Japan_(Okayama))

[https://en.wikipedia.org/wiki/List\\_of\\_Historic\\_Sites\\_of\\_Japan\\_\(Aichi\)](https://en.wikipedia.org/wiki/List_of_Historic_Sites_of_Japan_(Aichi))

and so on. Or it is possible to use the following lists such as

[https://commons.wikimedia.org/wiki/Category:Kofun\\_of\\_Osaka\\_prefecture](https://commons.wikimedia.org/wiki/Category:Kofun_of_Osaka_prefecture)

[https://commons.wikimedia.org/wiki/Category:Kofun\\_of\\_Nara\\_prefecture](https://commons.wikimedia.org/wiki/Category:Kofun_of_Nara_prefecture)

[https://commons.wikimedia.org/wiki/Category:Kofun\\_of\\_Fukuoka\\_prefecture](https://commons.wikimedia.org/wiki/Category:Kofun_of_Fukuoka_prefecture)

and so on.

After References, the Figures 3-12 are giving the DEM maps. We can easily appreciate how the kofun are arranged in the local topography.

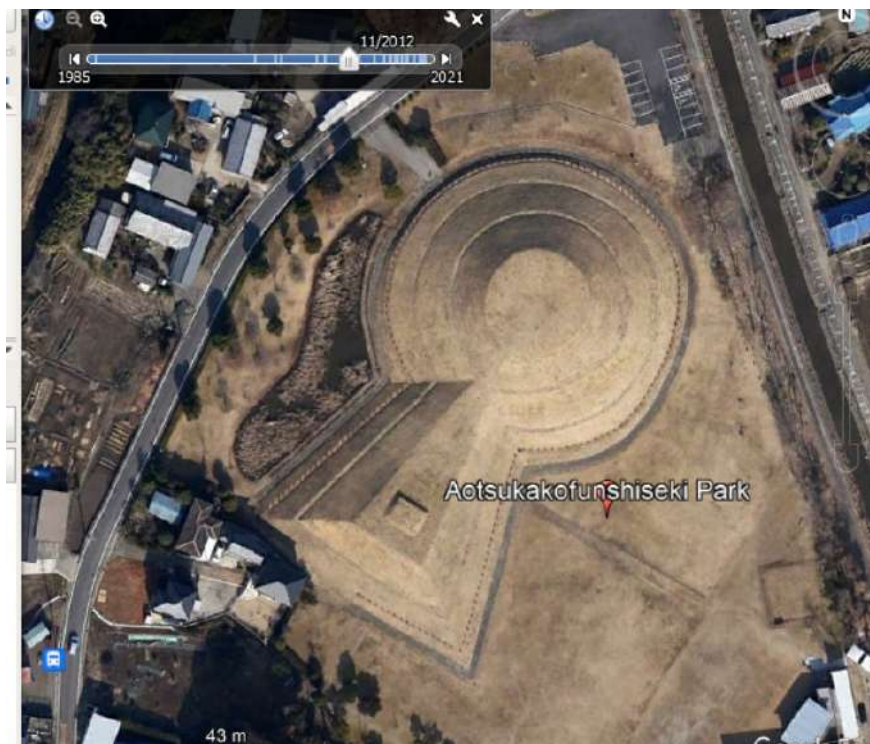
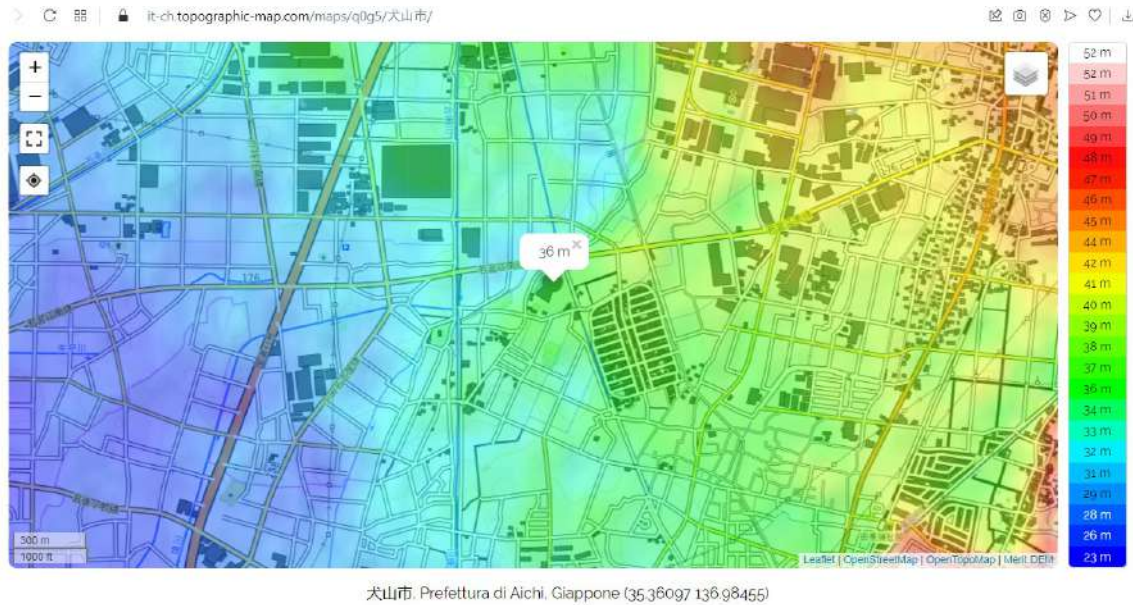


Fig. 13 a – Aotsuka kofun in Google Earth Pro (many thanks to Google Earth).



*Fig. 13 b – The site of Aotsuka kofun in a map provided by the web site <https://it-ch.topographic-map.com>. Many thanks to Yamazaki D., D. Ikeshima, R. Tawatari, T. Yamaguchi, F. O'Loughlin, J.C. Neal, C.C. Sampson, S. Kanae & P.D. Bates, 2017, for their fundamental work on digital elevation data and models, and many thanks to the excellent web site, which is fundamental for the maps. Note that the kofun is following the local elevation profile of the hill.*

### **Orientation of zenpōkōen kofun (second part)**

Let us consider two examples of kofun. We can see them in the Figures 13 and 14. Trees and vegetation have been removed from the surfaces of the mounds, because of their restoration. In fact, the real appearance of a kofun was that of an artificial structure, an evident man-made structure, and not of a natural hill.

What is the orientation we can measure by means of satellites? As we did (Sparavigna, 2013, 2014, 2018) for the Sahara keyhole tombs, we can measure the orientation of the long axis of symmetry, as shown in the Figure 2 for Daisenryo. The direction is about north-northeast. However, the Torii gate is facing the square side of the mound. It means that this is considered the front of the tomb, and, as we will see in the following discussion, it is the direction which is facing this side that is considered in the description of kofun. In the case of Daisenryo, it is facing south-southwest.

In the Fig. 13, from Google Earth Pro, we can see the Aotsuka Kofun.

“The Aotsuka Kofun (青塚古墳) is a Kofun period burial mound, located in the Aotsuka

neighborhood of the city of Inuyama, Aichi in the Tōkai region of Japan. It was designated a National Historic Site of Japan in 1983. It is the second largest kofun found in Aichi Prefecture after the Danpusan Kofun in Nagoya.”

The item [wikipedia.org/Aotsuka Kofun](https://en.wikipedia.org/wiki/Aotsuka_Kofun) is also telling that “The tumulus is a zenpō-kōen-fun (前方後円墳), which is shaped like a keyhole, having one square end and one circular end, when viewed from above. It has a total length of 123 meters and is orientated to face southwest. It consists of a three-tiered posterior circular portion with a diameter of 78 meters and height of 12 meters, and a two-tier trapezoidal anterior portion, with a width of 62 meters, length of 45 meters and height of seven meters. The tumulus was formerly covered in *fukiishi* across its entire surface, and had rows of cylindrical and drum-shaped *haniwa*. It is believed to have been built in the middle of the 4th century in the early Kofun period.” [wikipedia.org/Fukiishi](https://en.wikipedia.org/wiki/Fukiishi) tells that “Fukiishi (葺石 or 葺き石 "roofing stone") were a means of covering burial chambers and burial mounds during the kofun period of Japan (c. 250–538). Stones collected from riverbeds were affixed to the slopes of raised kofun and other burial chambers. They are considered to have descended from forms used in Yayoi-period tumuli. They are common in the early and mid-Kofun periods, but most late Kofun-period tumuli do not have them.” The Aotsuka site of the kofun is open to the public.

Name	Degrees, minutes	Decimal degrees
north	0° 00'	0.0°
north-northeast	22° 30'	22.5°
northeast	45° 00'	45.0°
east-northeast	67° 30'	67.5°
east	90° 00'	90.0°
east-southeast	112° 30'	112.5°
southeast	135° 00'	135.0°
south-southeast	157° 30'	157.5°

Name	Degrees, minutes	Decimal degrees
south	180° 00'	180.0°
south-southwest	202° 30'	202.5°
southwest	225° 00'	225.0°
west-southwest	247° 30'	247.5°
west	270° 00'	270.0°
west-northwest	292° 30'	292.5°
northwest	315° 00'	315.0°
north-northwest	337° 30'	337.5°

Courtesy: <http://tamivox.org/dave/compass>

If we consider the orientation of the long axis, we find an azimuth of 33° (from the meridian line), between north-northeast and north-east. Therefore, we can find an orientation towards the *Big Dipper*, as those observed by Yoshitaka Hojo and Akira Goto , in 2021, for the long axis of the burial structure (see, Hojo and Goto, 2021; the orientation of the burial chambers have been considered). If we measure the eastern direction of the

side of the trapezoidal front, which is representing an axis perpendicular to the symmetry axis, we find an azimuth of about  $121^\circ$ . In this case, the direction of this side is towards the sunrise, but is this the solar orientation that we have to consider? Let us stress that it remains the fact that the square side, the main side of the kofun, *is facing a direction between south-south west and southwest*.

Following Akira Goto, (2018), we have to consider the orientation of the burial chamber inside, to see if we have a “northern aspect”, in the case the chamber is aligned in the same direction of the symmetry axis, or an orientation towards the sunrise, if the chamber is aligned perpendicular to the axis. Then, only an investigation inside the kofun can determine the relevant direction.

Let us now consider the [Hiruiōzuka Kofun](#) (昼飯大塚古墳). It is a kofun burial mound located in what is now part of the city of Ōgaki, Gifu in the Chubu region of Japan. The site was designated a National Historic Site of Japan in 2000.

If we consider the orientation of the long axis, we find an azimuth of  $55^\circ$  (from the meridian line). Therefore, we can find an orientation towards the rising of the moon, on a *northernmost lunar standstill*, as mentioned in (Hojo and Goto, 2021).

If we consider the direction of the side of the trapezoidal front, which is representing an axis perpendicular to the symmetry axis, we find an azimuth of about  $145^\circ$ . *In this case, the “square” side of the kofun is facing the sunset*. If we consider the pathway on the kofun, we find about  $141^\circ$ .



Fig. 14 - Hiruiōzuka Kofun in Google Earth Pro. Many thanks to Google.

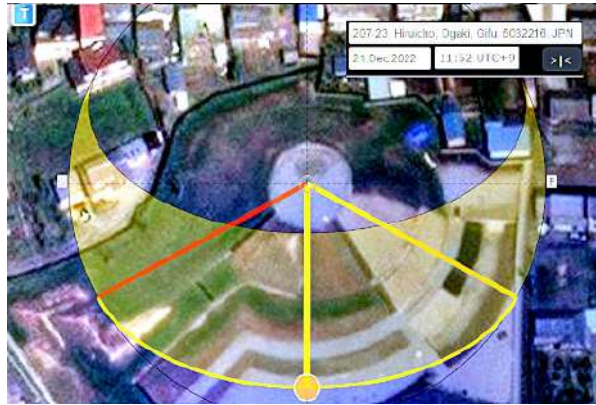


Fig.15 – Many thanks to [suncalc.org](http://suncalc.org). The lines represent the direction of the sunrise, noon and sunset on the winter solstice.

In the previous image (Fig.15), we can see a simulation obtained by means of [www.suncalc.org](http://www.suncalc.org/#/35.3876,136.5715,19/2022.12.21/11:50/0/1): <https://www.suncalc.org/#/35.3876,136.5715,19/2022.12.21/11:50/0/1>. The figure shows the motion of the sun on a local astronomic horizon, from sunrise to sunset, on the winter solstice. Using the following link, the summer solstice is simulated: <https://www.suncalc.org/#/35.3876,136.5715,19/2022.06.21/11:55/0/1>

In the case that we use the trapezoidal base or the pathway on the mound, the direction is *not in the arc of the sunrise*. In any case, following Akira Goto, 2018, this kofun seems being characterized by a “southern aspect”.

Actually, we could distinguish the orientation of keyhole kofun according to the arcs of sunrise, noon, sunset and north (hinotate, kagetomo, hinoyoko, and sotomo).

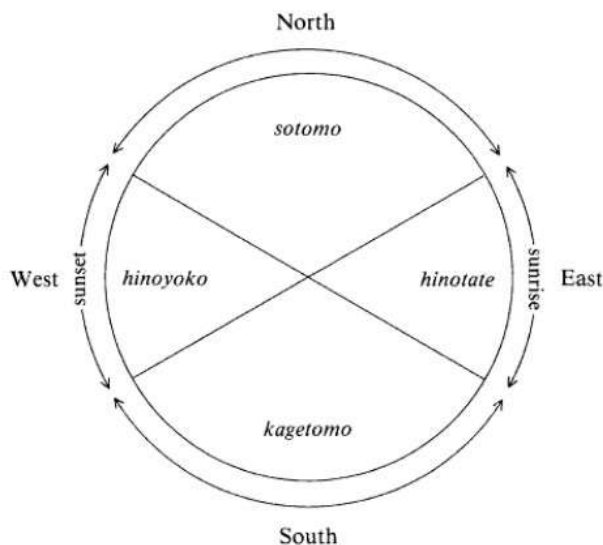


Fig.16 - From page 80 of Palmer, 1991. “For the ancient Japanese, the directions of sunrise and sunset were east and west, with the solstices indicating the extreme points, and the changes on these days formed the norm for orientation”.



However, how is the kofun inside?

About Hiruiōzuka Kofun, Wikipedia tells the following. “The tumulus is a three-tiered structure, *orientated to the southwest* and has an overall length of 150 meters. The bottom tier of the structure and its surrounding moat are now underground due to generations of agricultural activity in the area. ... It was first excavated in 1980 by Nagoya University and was found to contain *three separate burial chambers, one with a stone sarcophagus in the north, one with a clay sarcophagus in the south and one with a wooden coffin in the west*. The stone sarcophagus had been looted in the Meiji period, and the clay sarcophagus was not excavated. The burial chamber with wooden coffin was found to contain many grave goods, including iron and steel swords, tools made from iron, along with jade balls, magatama, glass ornaments and Haji ware pottery fragments. The inside of the coffin was not excavated. Haniwa recovered from the site was in various forms, including cylindrical-shaped haniwa, and haniwa in the shape of houses, human figures and in the form of tools and shields” (Isomura Yukio and Sakai Hideya, 2012).

“The kofun has been restored to what archaeologists believe to be its original appearance, covered in fukiishi with haniwa and the moat was also restored, forming an archaeological park”. Wikipedia is also giving measurements of the kofun.

### **Due North, facing South**

In Hojo and Goto, 2021, page 92, we can see that, of the considered 31 kofun in the Kinki area, 26 have the burial chambers oriented towards the circumpolar stars and the Big Dipper (see the diagram in (Hojo and Goto, 2021)). If we consider a perpendicular axis, of course, we can find a sunrise orientation, but it is the “northern aspect” dominating the structure.

From (Goto, 2021), page 78 (see the figures in the page 79). “In his recent book, *The Orientation of Kofun and the Sun*, Hojo Yoshitaka reanalyzed astronomical orientation of kofun burial orientation (Hojo 2017). Using astronomical simulations and calculations, Hojo has convincingly shown that the burials characterized as “northern pillow” are mostly laid within a range of the circular movement of the Big Dipper. Since there was not a conspicuous “polar star” during the third to seventh centuries, Hojo has proposed a hypothesis that ancient people observed the circulation of the Big Dipper” or that people observed crossing the meridian of Dubhe or alpha-Big Dipper and possibly Alkaid or eta-Big Dipper. A simulation of the Big Dipper in the direction of the Ishizuyama Kofun, the third largest burial kofun in Japan, is also given in (Goto, Akira, 2021). The Ishizuyama Kofun has coordinates 34°33'14"N 135°28'38"E.

Let us consider now a kofun having its axis in the precise meridian direction. It is the Shionjiyama Kofun, a mausoleum grave in Yao, Osaka (see Fig.17).

From the web site [kansaiculture.blogspot.com](http://kansaiculture.blogspot.com) : “In eastern Osaka, along the edge of Mt.

Takayasu (Shigi-san, where the well known mountain-top temple is located) there are a series of ancient burial mounds in an area known as Naka-Kawachi. The largest of these is the Shionjiyama Kofun". This zenpōkōen kofun is 160m long. Archaeologists have uncovered "artifacts such as armor, mirrors, clay figures ceremonial burial goods (such as clay houses). Replicas of such period ceramics line the pathways atop the restored exterior surface of the kofun". "In addition to the large kofun of Shionjiyama there are also a number of small tombs scattered around the neighboring mountainside; the temple of Jinkoji has a dense trail of them leading up toward Shigi-san. The Jinkoji tombs have similar construction in which an igloo-like dome is constructed with a stone interior, and a ceiling that is higher than the entrance doorway".

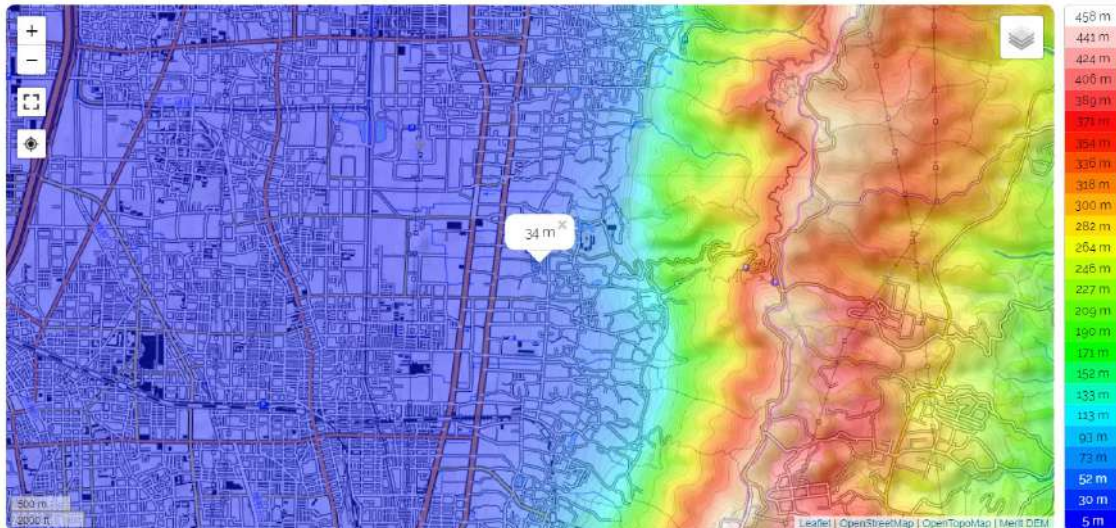
In [www.megalithic.co.uk](http://www.megalithic.co.uk) , it is defined as Long Barrow in Honshū. "A reconstructed keyhole-shaped tumulus (160m) with reproduced tube-shaped haniwa's in a residential area. A museum attached."

In [Britannica](http://Britannica), haniwa, (Japanese: "circle of clay") are unglazed terra-cotta cylinders and hollow sculptures, which had been arranged on and around the kofun of the Japanese elite. "The first and most common haniwa were barrel-shaped cylinders used to mark the borders of a burial ground". In the early 4th century, "the cylinders were surmounted by sculptural forms such as figures of warriors, female attendants, dancers, birds, animals, boats, military equipment, and even houses".

Using the following link [www.megalithic.co.uk](http://www.megalithic.co.uk) it is possible to locate some "long barrows" in Japan.



*Fig. 17 a - Shionjiyama Kofun in Yao, Osaka, seen in Google Earth Pro.  
Many thanks to Google.*



八尾市, Prefettura di Osaka, Giappone (34.62628 135.60585)

*Fig. 17 b – The site of Shionjiyama Kofun in Yao, Osaka, in a map provided by the web site <https://it-ch.topographic-map.com>. Many thanks to Yamazaki D., D. Ikeshima, R. Tawatari, T. Yamaguchi, F. O'Loughlin, J.C. Neal, C.C. Sampson, S. Kanae & P.D. Bates, 2017, for their fundamental work on digital elevation data and models, and many thanks to the excellent web site, which is fundamental for the maps.*

### **Due South, facing North**

The Figure 18 shows Ojin-tenno-ryo Kofun (Information and an image of a laser survey map in [www.city.habikino.lg.jp](http://www.city.habikino.lg.jp)). This kofun has its symmetry axis in the south-southeast direction. It is facing the north-northwest direction.

Ojin-tenno-ryo Kofun was built in the early 5th century is the largest in Furuichi Kofun Group. It is the second-largest Kofun after Nintoku-tenno-ryo Kofun at Mozu Kofun Group in Sakai City, which is the largest mounded tomb in Japan. The mound of Ojin-tenno-ryo Kofun has a round rear section with a diameter of 250 m. The square front is 300 wide. “The height of its mound is 36m, which corresponds to a building of 12-storey”. “They say that the sat amount of Ojin-tenno-ryo Kofun is mostly the same as that of Nintoku-tenno-ryo Kofun. ... it is estimated that Nintoku-tenno-ryo Kofun was built to mobilize more than a total of 6.8 million people, and it takes approximately 16years to build this huge mound”.

The kofun are surround by moat and banks. Around, satellite tombs, such as square and round-shaped mounds, are located.

“The east side of the moat and bank are distorted not in line symmetry with those of the west the west side. The cause of this distortion is due to the fact that though Futatsuzuka Kofun to see in front was built earlier than Ojin-tenno-ryo Kofun , then Ojin-tenno-ryo Kofun was built later on the residual space of the plateau”.

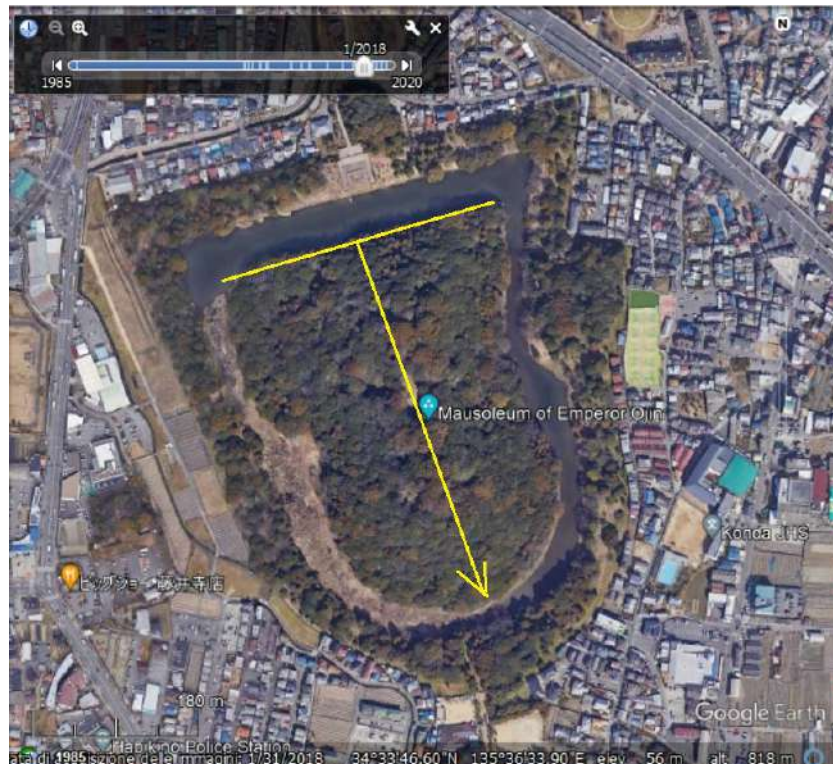


Fig.18 - Ojin-tenno-ryo Kofun in Google Earth Pro. Many thanks to Google.

From [Wikipedia](#). Emperor Ōjin (応神天皇, Ōjin-tennō), also known as Hondawake no Mikoto (誉田別尊) or Homuta no Sumeramikoto (譽田天皇), was the 15th legendary Emperor of Japan, according to the traditional order of succession. No firm dates can be assigned to this Emperor's life or reign, but he is conventionally considered to have reigned from 270 to 310. According to the Shinto religion and Buddhism in Japan, Emperor Ōjin is the divine spirit of the deity Hachiman (八幡神).

### Keyholes in Arabia

In the Figure 1, on the right, a keyhole tomb of Sahara is shown. Actually, in Arabia we can find keyhole tombs which have a shape which is a little similar to the kofun. I have

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read about these tombs in 2010, when I studied stone circles in Arabia (Sparavigna, 2010). The article showing keyhole tombs, that I mentioned in 2010 was Janežič, V., 2009. The author, Vanja Janežič, tells below a Google Earth image: “Note keyhole shaped burial mounds aligned along the path/road that cuts the desert kite”.

In the Fig.19, we can find these mounds, the longest of which is of about 15 meters.



*Fig. 19 – Using in Google Earth Pro the coordinates given in (Janežič, V., 2009), we can see the keyhole mounds. The author, Vanja Janežič, tells below a Google Earth image: “Note keyhole shaped burial mounds aligned along the path/road that cuts the desert kite”. For the “desert kites” see please (Sparavigna, 2014).*



Fig. 20 - Goshikizuka Kofun

### Goshikizuka Kofun

“Das Goshikizuka Kofun (jap. 五色塚古墳) ist ein japanisches Hügelgrab in sogenannter Schlüssellochform (前方後円) im Stadtbezirk Tarumi von Kōbe. Die gegen Ende des 4. Jahrhunderts oder zu Beginn des 5. Jahrhunderts geschaffene Grabanlage mit einer Hügellänge von 194 m (ursprünglich über 300 m) ist das größte Kofun der Präfektur.” [https://de.wikipedia.org/wiki/Goshikizuka\\_Kofun](https://de.wikipedia.org/wiki/Goshikizuka_Kofun). The kofun is near the coast.

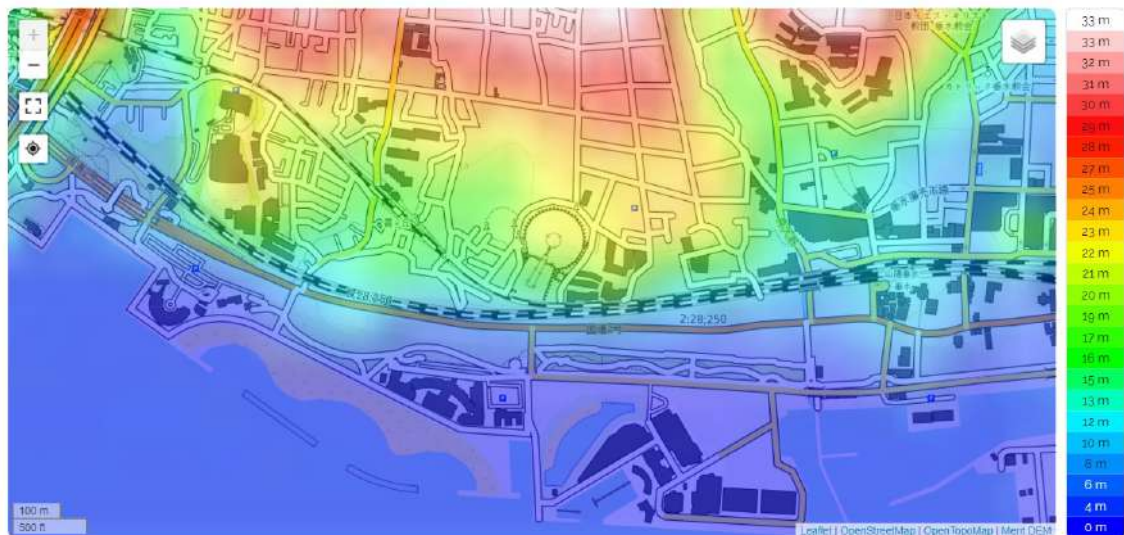


Fig. 21 - Goshikizuka Kofun in DEM map.

### **Why two parts?**

We could ask ourselves why the keyhole kofun is composed by two parts. In fact, it is a tumulus made by two mounds.

In “Ancient Japan and religion”, in the “Nanzan Guide to Japanese Religions”, 2006. we can find an answer given by the author, Matsumura Kazuo.

“Kofun were the graves of the powerful, and the rituals of succession were held at the same time of the burial. Moats created a sacred space that separated kofun from the outside world. Three levels of upper, middle, and lower steps were carved into the burial mound, and clay figurines, shaped vessels, and jar pots were placed at each level. It appears that there were installed in order to prevent the entry of evil forces from the outer world. The slope of the upper level was covered by slate tiles, so that when the sun shines it is conspicuous, indicating that it was meant to be seen as a man-made monument. There was a stone burial chamber placed at the back part of the top of the mound. Shield and quiver figurines were placed at the corners of the chamber expressing authority and force, and a mansion-shaped figurine was placed in the center.

In some cases chair-and-serving-table figurines were placed in front of the mansion figurine and these are thought to have been used for ritual feasts for the dead. Also there are many cases where a platform was built at the top of the front part of the mound and clay figurines were placed there. When we consider this, it seems that the back part of the mounds were the domain of the dead and the front part the domain of the living, the back part being the place of succession and the front part being that of ascension (Mizuno 1986, pp.74-83; Kokugakuin Daigaku Nihon Bunka Kenkyūjo 1999, pp. 67-130).”

### **Princess Pimiko**

In the “Japanese Mythology A to Z”, by Jeremy Roberts (2009), about the Kofun period, it is told that it was lasting from approximately AD 250 to 552. “Anthropologists believe that by studying the mounds they have traced the expansion of the YAMATO clan from its origins in what is now the Nara Prefecture. Recent research strongly suggests a link between the Yamato clan and KOREA. Many anthropologists believe members of the clan may have originally come from there (see HORSE RIDER THEORY).”

“According to Chinese reports from the third century, Japan was divided into 30 kingdoms. All were under the authority of an empress or princess known as a Pimiko, an ancient form of the word himeko, or “princess”. The princess is said to have remained in a TEMPLE in close contact with the gods. Others served as her emissaries to the people. No written Japanese account of this society exists, but scholars believe that hints may be found in SHINTO myths and legends, many of which are thought to have originated in the Kofun period. For example, the story of AMATERASU tells of a powerful goddess who sent her grandson to rule the earth. This story may echo or reflect

parts of Kofun society, such as the existence of a strong female figure as ultimate ruler. Historians and anthropologists who hope to find links to this time period sometimes study early Japanese stories”.

### **Kofun religion**

From [factsanddetails.com/japan](https://factsanddetails.com/japan), we can find information about the religion in the Kofun Period. Information is coming from mythology, Shintoism and archaeological findings. The web site tells that Aileen Kawagoe wrote in Heritage of Japan website that “People of the Kofun age and from earlier times, had conducted many rituals of worship to the kami spirits of the mountains, sea, rivers and at roads through mountain passes which they thought tended to get blocked by “violent kami”.” In fact, “many ritual objects found buried in riverbeds or at the feet of mountains are evidence of those customs.” [Source of information, Aileen Kawagoe, Heritage of Japan website, [heritageofjapan.wordpress.com](https://heritageofjapan.wordpress.com)]. We can find also that the Kofun Period held and attended agricultural ceremonies, such as festivals to pray for a good harvest and thanksgiving festivals. “Ritual life and magic governed their lives”. [Aileen Kawagoe]. People worshiped solar and weather deities and kami spirits. Also mountain, sea and water deities have been venerated. In the Kofun period, people continued shamanistic practices and divination rituals, as from the earlier Yayoi time. “Rituals, for example, where deer bones were heated and burnt, and fortunes read and told from the cracks were practised all over Kofun Japan.” This is told at the web site.

In [factsanddetails.com/japan](https://factsanddetails.com/japan) it is told that, according to “Topics in Japanese Cultural History”, the “Agriculture was the foundation of all economic activity in Japan until the start of this century. The most important kami, therefore, were those associated with agriculture. In many localities during the Tomb period and later, villagers worshiped a pair of kami, one male and the other female. The thinking was that the fertility of these kami was closely connected with the fertility of the land and that such worship would help ensure a bountiful harvest.”

The leaders of local clans worshiped the agricultural deities. “In time, many of these clans (uji) came to regard these agricultural deities as their ancestral founders. Local agricultural deities, in other words, became the ujigami (uji-founding kami) of the major local clans. As the confederation of clans in the Yamato area extended its hegemony over the other uji and peoples of the Japanese islands, their ujigami became more widely known. Of particular importance, of course, was the Yamato royal family, whose ujigami was Amaterasu, a female solar deity (often called the "sun goddess"). ... Worship of Amaterasu was an important duty of the Yamato king, who was as much a religious leader as he was a secular leader. After the Taika Reforms of 645, Amaterasu became, at least in theory, a kami of great importance for all of the Japanese islands.”

*“Moving a few centuries back in time to the early tomb period, religious life seems to have been dominated by women with special spiritual powers. These women functioned as shamans and were often political leaders as well. Female leadership in religious and*



*political life was common throughout many parts of East Asia prior to the spread of Confucianism and Buddhism. In Ryukyu, for example, female shamans ... played a major role in local religious and political life until this century. The head priestess of Ryukyu (Kikoe-Ogimi) was nearly as powerful as the king until the seventeenth century. In Japan, by the time of the Taika Reforms, female shamans no longer played a role in the official state religious ceremonies. A few centuries earlier, however, female shamans sometimes served as leaders of the Yamato Kingdom.”*

The web site [factsanddetails.com/japan](https://factsanddetails.com/japan) is pointing out that there was a rejection of Yayoi Kami in the Kofun Period. Kawagoe wrote: “A great and long-lasting famine had spread across the whole of East Asia just before the start of the Kofun Period, from around AD 190 to 220. It was around the time when priestess Queen Himiko had ascended the throne (climatic historians say this was a time of a Little Ice Age). In Japan, people everywhere joined their rulers in imploring for assistance from their kami, using the ritual bronze spearheads, daggers, and bells. But it must have seemed that the kami were deaf to their pleas for the years of famine did not come to an end. [Source: Aileen Kawagoe, Heritage of Japan website].

Let us add what we can find told by Hironobu Ishino, in “Rites and Rituals of the Kofun Period”, 1992. The Abstract tells that “The ritual of the Kofun period were closely connected with both daily life and political affairs. The chieftain presided over the principal rites, whether in the mountains, on the rivers, or along roadsides. The chieftain’s funeral was the preeminent rite, with a tomb mound, or kofun, constructed as its finale. The many and varied kofun rituals have been discussed elsewhere”. In this article, Hironobu Ishino concentrates on other kami rites and their departure from Yayoi practices. The burial rituals are discussed in Kofun jidai no kenkyū series in 13 volumes edited by Ishino et al. (1990-), Volumes 7 (Mounds and burial structures, 1991). 8 (Grave goods, 1991), and 9 (Haniwa, 1992).

By Ishino, it is stressed that, in the Initial Kofun period, by which the author means “the period traditionally assigned to the very end of the Yayoi, bronze ritual objects were smashed, discarded and buried. ... Bronze bells in the Kinki region met a similar fate”.

“These samples tell a tale of the rejection by Yayoi peoples – whether in Tsukushi, Kibi, or Yamato – of bronze ritual objects and the Yayoi kami they stand for. The time when this happened was principally the end of the Late Yayoi and the Initial Kofun, or approximately AD 190 to 220. Himiko was a priestess as well as being monarch of Wa. Is it too far-fetched to assume that, when Himiko ascended the throne around 190, she and those who established her in power carried out an aggressive rejection of the Yayoi kami symbolized by the Yayoi bronze ritual objects? It was iconoclasm in the literal sense of the word. Why, we might ask, was it necessary to go to such extremes? ...

Once the Yayoi kami had been rejected it was necessary to seek new kami and then reveal them to the people. Himiko, as a result of her diplomatic negotiations with Wei in 239, acquires “an exquisite gift” of “one hundred bronze mirrors”, which she then “displayed to people throughout the land”. Can we not conclude that Himiko sought new

kami from the kingdom of Wei and went about importing large quantities of bronze mirrors that symbolized them?”

About the new kami, Ishino tells that “When we look for archaeological data that show the existence of these in the first half of the third century, we find ample evidence in keyhole-shaped tombs and bronze mirrors.”

Keyhole-shaped tombs were originally constructed as religious structures, but before long became heavily political in character. It is doubtful that either Himiko’s foreign relations or her political rule could have continued for long if there had not existed a common system throughout the kingdom of Wa in the first half of the third century, a system of which the keyhole-shaped tomb was a symbol. That being so, are there any other remaining structures that reveal something of the revolution in rites and religious practices that occurred during the first half of the third century?

Let us continue reading from [factsanddetails.com](https://www.factsanddetails.com). “In those days in East Asia, there was a custom of practicing regicide which meant that they killed their rulers whom they blamed for the plight they were in. The rulers of the Wa kingdom were probably killed one after another, but when that didn’t stop the famine, the people ended up rejecting the Yayoi kami as well”.

As observed by Ishino in “Rites and Rituals of the Kofun Period”, there was a rejection of Yayoi kami: “ritual objects such as bronze bells and bronze spearheads were being broken and cast into rivers, or discarded inside abandoned houses or dumped or buried. Since the Yayoi kami had been rejected, the rulers then needed to seek and reveal new kami to their people”. And here we find Queen Himiko (or Pimiko), and her diplomatic missions to the Chinese kingdom of Wei. She probably imported new kami along with the gifts of “one hundred bronze mirrors” that symbolized them from the Chinese court. She revealed the new kami with the mirrors that she displayed to people.

Aileen Kawagoe stresses that “Historians believe that the new religion involved bronze mirrors and the construction of keyhole shaped tombs as religious structures. Queen Himiko’s reign had the effect of unifying many tribal or clan groups, and may also have brought about some common religious system that had the keyhole-shaped tomb as a central symbol”. [Aileen Kawagoe, Heritage of Japan website].

“To accommodate the demands of this new religious system, a new architectural structure came to be built.” Then, [factsanddetails.com](https://www.factsanddetails.com) describes the ritual sites and talks about the Kofun-Era Purification Rituals and Food Offerings. Again we find mentioned Aileen Kawagoe’s words: “Aqueduct systems have been found at the Makimuku and Hattori sites. These are thought to have been facilities to provide clean water for offerings to the kami in water purification rituals. These aqueduct systems usually

comprising of wooden pipes ... continued to be constructed and used well into the fifth and sixth centuries. [Source: Aileen Kawagoe, Heritage of Japan website]

After the description of some ritual, we can find also told that ritual objects changed in popularity according to the prevailing religious beliefs of the times. “a changing pattern of ritual offerings over the centuries can be seen: 4th – 5th centuries: Magatama beads, mirrors, knives and swords, (green nephrite) bracelets, iron weapons and tools, steatite items were offered on top of iwakura boulder-top altars to invite the kami to descend to these altars. [Source: Aileen Kawagoe, Heritage of Japan website]. 6th – 7th centuries: Japanese copies of Chinese bronze mirrors, personal belongings, horse ornaments, pottery, metal miniatures and steatite items were popular as ritual objects. 7th – 8th centuries: Gold rings, horse ornaments, iron, ingots (similar to those found in tombs in the Korean Silla kingdom). Fragments of a Sassanian Persian glass bowl have been uncovered. Purification rites appear to have been conducted partly in the open and partly at the base of boulders, using ritual items of steatite, metal miniatures of weaving and spinning implements.”

Let us see also the role of kings. The local chieftains “all derived their authority from their roles as priests of agricultural rites for the worship” of heavenly and earthly kami of the land, at appointed shrines. “As a centralizing state emerged during the Kofun age, the king or emperor at the apex of that state, even as Buddhism took hold in Japan as a new religion, could not ignore his role as the supreme kami-worshipping priest”. [Source: Aileen Kawagoe, Heritage of Japan website, heritageofjapan.wordpress.com]. The Yamato state’s earliest kings are strongly connected to worship at the Omiwa Shrine where the ancient rites for the worship of the kami of Mt Miwa was carried out. The Omiwa Shrine, as another early prototype of the shrine, had no central hall of worship (shinden) for the enshrinement of its “kami body”(shintai) because Mt Miwa itself was worshipped as the kami body. Of the six burial mounds built at the base of Mt Miwa, the fifth of them is believed to belong to King Suijin.” “Mountain worship rituals were performed by rulers from the shrine at the base of the mountain. According to the Hitachi no kuni fudoki a peg was used as a marker to show that above that point onwards was the place of the kami while parts below the peg marker could be made into fields for human cultivation.”

## **Sword**

In [factsanddetails.com/japan](https://factsanddetails.com/japan) , we can find also the importance of the sword. “The god Futsu-no-mitama-no-ookami, enshrined in Isonokami Jingu Shrine, is the deification of the sword said to be owned by the god Takemikazuchi-no-kami. Futsu-no-mitama-no-ookami has been known from ancient times as the god who protects the state and keeps peace among the people, as well as being the patron god of the accomplishment of all things”. [Source: Isonokami Jingu Official Website ]. In Japanese mythology, this god (the sword god) contributed to the subjugation of the country, defeating false gods and

the rebels during the eastern campaign of Emperor Jimmu. Jimmu is the first emperor of Japan, that myth tells to have been enthroned in the 7th century B.C. “Thereafter, Emperor Jimmu commanded Umashimaji-no-mikoto, the ancestor of the Mononobe clan said to be the head of the warriors, to enshrine this sword eternally within the imperial court”. During the reign of Emperor Suijin, 1st century B.C., the sword was transferred into Takaniwa of Isonokami-furu, the present site. “Since then the emperors worshipped this shrine, donated many weapons in preparation for any emergency in the state and prayed for harmony in especially during times of war. The shrine also received the worship of famous generals and warriors. Many clans offered sacred treasures to the storehouse called Hokura and prayed for the safety of the imperial family and for the peace of the state. The most sacred area within the compounds of Isonokami Jingu Shrine is the Kinsoku-chi (literally, “forbidden area”), where the sacred sword was originally buried in its very center. In 1874 an excavation was conducted and many important ancient weapons and ornamental beads called magatama were unearthed, which were designated as national treasures or objects of important cultural property.”

### **Amaterasu (in Italian and English)**

Ecco come l’[Enciclopedia Italiana](#) del 1929 descrive la divinità solare. La voce è di Guido Perris.

“Nel pantheon giapponese è senza dubbio la divinità più importante. Il suo nome completo è Amaterasuô-mikami "La Grande dea che brilla nel cielo". Viene anche chiamata O-Hiru-me-no-muchi "La grande dea del sole" e, con pronuncia sinico-giapponese, Tenshokô-daijin. Narrano i libri sacri dello scintoismo che Amaterasu nacque dall'occhio sinistro d'Izanagi<sup>5</sup>, e per la sua bravura ebbe dal padre il governo della piana del cielo (Takama-ga-hara). La dea del sole insegnò ai suoi sudditi la coltivazione del riso, l'educazione dei baco da seta e l'arte del tessere. Ma un giorno, infastidita da suo fratello Susano-o, si nascose nella grotta celeste (Ama-no-iwaya), ne chiuse l'ingresso con una roccia enorme, e fece così piombare l'universo mondo nelle tenebre più profonde. Le miriadi di dei si spaventarono e tennero consiglio per escogitare il mezzo di fare uscire dal nascondiglio la dea offesa”. *Ishikoritome fabbricò lo specchio* (Yata-no-kagami), *Tama-no-oya la gemma ricurva* (yasakani-no-magatama) ed Ame-no-hiwashi dei festoni di stoffa (nigite). “Tutti questi *oggetti divini* vennero sospesi ai rami dell'albero sacro trasportato per l'occasione davanti alla grotta dalla montagna Ame-no-kaguyama. Gli dei invocarono ritualmente la Grande dea del Sole ad uscire, ma inutilmente. Ed allora la divina e maliziosa Uzume si mise a ballare sfrenatamente, tanto da fare scoppiare in clamori di risa gli dei, che l'accompagnavano a suon di musica. A tanto allegro fracasso, Amaterasu vinta dalla curiosità sospinse un pochino la roccia per spiare dallo spiraglio che cosa fosse mai accaduto. Ma il divino

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5 Izanagi o Izanaki è una divinità shintoista il cui nome significa "Colui che invita", fratello e compagno della dea Izanami. Le due divinità crearono la terra di Yamato, il Giappone.

Tajikara-o fu pronto a mettere il suo braccio poderoso nella apertura e a spingere via la roccia. Così Amaterasu tornò a risplendere nel mondo, ed il perfido fratello Susano-ovenne severamente punito e bandito dal cielo”.

Nel mito troviamo presente lo *specchio*. Specchi sono stati ritrovati nei kofun (si veda ad esempio, Mirrors in Kurozuka Kofun).

In the Japanese pantheon, Amaterasu is undoubtedly the most important divinity. Her full name is Amaterasuô-mikami, "The Great Goddess who shines in the sky". She is also called O-Hiru-me-no-muchi "The great goddess of the sun" and, with Sinic-Japanese pronunciation, Tenshōkō-daijin. The sacred books of Shinto say that Amaterasu was born from the left eye of Izanagi, and thanks to her skill, she had from the father the government of the sky (Takama-ga-hara). The sun goddess taught her people the cultivation of rice and of silkworms and the art of weaving. But one day, annoyed by her brother Susano-o, she hid herself in the celestial cave (Ama-no-iwaya), closed the entrance with a huge rock, and thus plunged the world into darkness. The myriads of gods and goddesses were frightened and held council to devise the means of getting the offended goddess out of hiding. Ishikoritome made the mirror (Yata-no-kagami), Tama-no-oya the curved gem (yasakani-no-magatama) and Ame-no-hiwashiki the fabric festoons (nigite). All these divine objects were attached to the branches of the sacred tree, carried for the occasion in front of the cave from the Ame-no-kaguyama mountain. Gods and Goddesses ritually invoked the Great Goddess of the Sun to come out, but to no avail. And then the divine and mischievous Uzume began to dance wildly, and the gods and goddesses, who accompanied her to the sound of music, burst into clamor of laughs. At such a cheerful rumor, Amaterasu, overcome by curiosity, pushed the rock a little to spy on, but the divine Tajikara-o was ready to put his mighty arm into the opening and push the rock away. So Amaterasu returned to shine in the world, and her perfidious brother Susano-o was severely punished and banished from heaven.

In the myth we find the mirrors, the magatama and the fabrics that have been found in kofun (see for example, Mirrors in Kurozuka Kofun).

*“Nello specchio aveva riconosciuto se stessa, il suo vero grande potere di dea benevola, ricevendo così la “conoscenza” di cui lo specchio diventa la rappresentazione.”* Da [Amaterasu e il mito dell'eclissi](#).

### **Yata no Kagami**

From [wikipedia.org](https://en.wikipedia.org/wiki/Yata_no_Kagami) “Yata no Kagami (八咫鏡) is a sacred mirror that is part of the Imperial Regalia of Japan.” “The Yata no Kagami represents "wisdom" or "honesty," depending on the source. Its name literally means "The Eight Ta Mirror," a reference to its size and octagonal shape. Mirrors in ancient Japan represented *truth* because they merely reflected what was shown, and were a source of much mystique and reverence (being uncommon items). Japanese folklore is rich in stories of life before mirrors were

commonplace. ... In Shinto, the mirror was forged by the deity Ishikoridome; both it and the Yasakani no magatama were hung from a tree to lure out Amaterasu from a cave. They were given to Amaterasu's grandson, Ninigi-no-Mikoto, when he went to pacify Japan along with the sword Kusanagi. From there, the treasures passed into the hands of the Imperial House of Japan.”

### **Ishikoridome no Mikoto**

From [wikipedia.org](https://en.wikipedia.org/wiki/Ishikoridome) “Ishikori-dome no Mikoto is a kami of mirrors in Shinto. She was regarded as an ancestral deity of Kagami zukuri no muraji (The mirror-making clans). In Japanese mythology, she created the exquisite Yata-no-kagami mirror which lures the sun goddess Amaterasu out of her cave and returns light to the world. Due to this achievement, Ishikori-dome is worshipped by makers of mirrors and stonemasons. She is worshiped as the god of casting and metalworking. She is enshrined in the Fuigo-jinja Shrine (Tennoji Ward, Osaka City), the Nakayama-jinja Shrine (Tsuyama City, Okayama Prefecture) the Kagamitsukurinimasu amaterumitama-jinja Shrine (Shiki-gun, Nara Prefecture), Iwayama-jinja Shrine (Niimi City, Okayama Prefecture).”

“Ishikoridome is a god appearing in the Japanese mythology. She was regarded as an ancestral deity of Kagami zukuri no muraji (the mirror-making clans)”.

From <https://www.japanese-wiki-corpus.org/Shinto/Ishikoridome.html>, her name means “an old woman who casts a mirror from a stone mold”.

### **Magatama**

From [en.wikipedia.org/wiki/Magatama](https://en.wikipedia.org/wiki/Magatama). “Magatama (勾玉, less frequently 曲玉) are curved, comma-shaped beads that appeared in prehistoric Japan from the Final Jōmon period through the Kofun period, approximately 1000 BCE to the 6th century CE. The beads, also described as "jewels", were made of primitive stone and earthen materials in the early period, but by the end of the Kofun period were made almost exclusively of jade. Magatama originally served as decorative jewelry, but by the end of the Kofun period functioned as ceremonial and religious objects. Archaeological evidence suggests that magatama were produced in specific areas of Japan and were widely dispersed throughout the Japanese archipelago from the Southern Koreanic kingdoms via trade routes.”

### **Torifune (in Italian and English)**

Da “La Mitologia Giapponese” di Paolo Villani (1982). “N. Matsumoto ha portato a termine una ricerca scientifica molto originale sulle forme di battelli e i problemi degli scambi culturali e dei trasporti nell’antichità ed ha osservato che alcune tradizioni popolari giapponesi contenevano la credenza nel torifune, la “barca-uccello”, che egli considera un simbolo del culto solare riscontrabile anche al di fuori della cultura

giapponese. L'esistenza di tale credenza è riconfermata anche da importanti reperti archeologici e cioè alcune incisioni su campane di bronzo ed alcune decorazioni murali all'interno dei tumuli del periodo kofun. Si tratta di disegni di battelli a forma di gondola con degli uccelli sulle estremità anteriore e posteriore, talora sovrastati da due cerchi concentrici. Queste raffigurazioni ricordano molto da vicino quelle che si possono ammirare su alcuni tamburi di bronzo provenienti dal sud-est asiatico, tanto che l'autore non ha dubbi che la rassomiglianza sia prova dell'esistenza di scambi culturali avvenuti nell'antichità fra le due parti, e più in generale anzi tra le zone costiere meridionali del continente euroasiatico e l'Asia orientale". (Villani, P., 1982)

N. Matsumoto carried out a very original scientific research on the shapes of boats and the problems of cultural exchanges and transportation in antiquity and observed that some Japanese folk traditions contained the belief in the torifune, the "bird-boat", that he considers as a symbol of the solar cult that can also be found outside of Japanese culture. The existence of this belief is also confirmed by important archaeological finds, namely some engravings on bronze bells and some wall decorations inside tumuli of Kofun period. These are drawings of gondola-shaped boats with birds on the front and rear ends, sometimes surmounted by two concentric circles. These representations are very reminiscent of those that can be admired on some bronze drums from Southeast Asia, so much so that the author has no doubts that the resemblance is proof of the existence of cultural exchanges that took place in ancient times between the two parts, and more generally between the southern coastal areas of the Eurasian continent and East Asia indeed

In (Villani, 1982), si discute anche il rapido passaggio dal periodo Yayoi al periodo Kofun.

“Lo stesso tipo di spiegazione non sarebbe però plausibile quando si passa all'analisi della cultura espressasi nel secondo periodo delle tombe a tumulo, durante il quale vengono a regredire tutte quelle caratteristiche culturali, precedentemente illustrate, proprie di una civiltà agricola, per far posto ad una cultura di tipo aggressivo, aristocratico, “nord-asiatico”, il cui avvento sarebbe inoltre essere stato piuttosto improvviso. *Per varie ragioni, Egami crede che il mutamento culturale non fu iniziativa del popolo di Wa, bensì la diretta conseguenza dell'invasione e della conquista da parte di una popolazione esterna, forse un ramo di stirpe tungusa, giunta in Giappone attraverso la Corea.* Sebbene ancora non sia stata scoperta alcuna prova diretta che fornisca una valida dimostrazione della teoria, l'autore si dichiara convinto che questo anello mancante verrà senz'altro scoperto in futuro. Il popolo di origine nord-asiatica, a cavallo e armato, sarebbe approdato nel Kyūshū o nell'Honshū occidentale nella prima metà del IV secolo e alla fine dello stesso secolo sarebbe avanzata verso la regione del Kinki per instaurarsi al potere come corte Yamato e portare a compimento l'unificazione statale del Giappone”. (Villani, P., 1982)

Let us pass to the analysis of the culture expressed in the second period of the tumulus tombs, during which all those cultural characteristics, previously illustrated, which are features of an agricultural civilization, regress to make room to an aggressive,

aristocratic "North Asian" culture, whose advent would also have been rather sudden. For various reasons, Egami believes that the cultural change was not the initiative of the people of Wa, but the direct consequence of the invasion and conquest by an external population, perhaps a branch of the Tungus lineage, which arrived in Japan via Korea. Although no direct evidence has yet been discovered that provides a valid demonstration of the theory, the author declares himself convinced that this missing link will undoubtedly be discovered in the future. The people of North Asian origin, on horseback and armed, would have landed in Kyūshū or in western Honshū in the first half of the fourth century and at the end of the same century they would have advanced towards the Kinki region to establish themselves in power as a Yamato court and bring completion of the state unification of Japan (Villani, 1982).

Yayoi, da [Dizionario di Storia](#) (2011). “Periodo della preistoria del Giappone (4° sec. a.C.-4° sec. d.C.). ... Della cultura Y. sono oggi distinte tre fasi principali: antica (350/300-100 a.C.), media (100 a.C.-100 d.C.) e tarda (100-300 d.C.). In questi sei secoli furono gettate le basi della civiltà giapponese, costituite dalla coltivazione del riso, integrata dalla metallurgia del bronzo e del ferro e da crescenti contatti con Cina e Corea. Nelle origini della cultura Y. sono evidenti alcuni elementi essenziali: l'agricoltura del riso in vasca si affermò definitivamente intorno al 400-300 a.C., in associazione alla fusione del bronzo e alla lavorazione del ferro”. La voce del Dizionario di Storia sottolinea che durante la media fase Yayoi si ebbe una forte espansione degli insediamenti agricoli da Kyushu fino a Honshu. Nella fase tarda Yayoi si formarono marcate divisioni sociali e si costituirono entità politiche regionali. Vi sono tracce inoltre di un intenso processo migratorio. L'aumento del numero degli insediamenti nel corso della fase media Yayoi e l'espansione dai bassopiani costieri a quote più elevate che dominavano le valli fluviali sono entrambi fattori che lasciano ipotizzare un incremento di tensioni tra gruppi. ... Suggestivi dati sulla fase recente del periodo Y. provengono da un testo storico cinese, il Weizhi (Cronaca di Wei, regno della Cina settentrionale, 220-265 d.C.) redatto intorno al 297 d.C., dove si narra che le genti wa dell'arcipelago giapponese nel 3° sec. d.C. possedevano una gerarchia sociale forse con «*capi-sciamani*» di sesso femminile e che documenta come i conflitti fossero endemici ed esistessero sistemi «legali» e di tassazione. I Wa coltivavano il riso e allevavano bachi da seta, non possedevano animali domestici, ma gestivano mercati formalmente autorizzati e regolamentati. Nel 238 e nel 240 o 243 d.C. la regina Himiko inviò ambasciatori in Cina; la prima spedizione le permise di essere riconosciuta dall'imperatore Wei come regina di Wa. I gruppi Y. occupavano inoltre in forma permanente villaggi cinti da fossato”. Il Dizionario di Storia sottolinea la risicoltura come complesso sistema di coltivazione, “probabilmente importato dalla Cina già nella sua fase evoluta”, e le innovazioni in campo tecnologico che accompagnarono la sua introduzione in Giappone.

“Himiko (170 – Nara, 248) è stata una regina giapponese. Tracce sull'esistenza di questa regina si trovano nel Wei Chih (Storia di Wei), una storia cinese dove facendo riferimento al più forte dei cento regni della Terra di Wa (l'attuale Giappone) si parla di questa regina sciamana nubile. La sua figura è attorniata dal mistero e nel Wei Chih si



afferma che si occupava di magia e stregoneria e che dopo anni di guerre era riuscita ad ottenere il potere. Era sorvegliata da cento uomini e servita da mille donne e da un solo uomo, grazie al quale comunicava con il mondo esterno. Himiko nel 238 mandò un tributo all'imperatore cinese e così ottenne il riconoscimento ufficiale dell'Impero cinese.” Da [it.wikipedia.org](https://it.wikipedia.org)

### **The waves**

The abstract of an article entitled “Yayoi Wave, Kofun Wave, and Timing: The Formation of the Japanese People and Japanese Language”, by Wontack Hong (2005), tells the following: “A sudden change in climate, such as the commencement of a Little Ice Age, may have prompted the southern peninsular rice farmers to cross the Korea Strait ca. 300 a.C.E. in search of warmer and moister land. This may answer the timing of the “Yayoi Wave”. Evidence confirms the seminal role played by peninsular peoples in the formation of Middle and Late Tomb culture and the inadequacy of the “evolutionary” thesis, restoring our attention to the “event” thesis. Around 300-400 C.E., a drought may well have forced the Paekche farmers around the Han River basin to search for a new territory. This may answer the timing of the “Kofun Wave”.

### **Kofun (G. Poncini, in Italian)**

Ecco alcuni estratti dalla voce “KOFUN” di G. Poncini, nell’Enciclopedia dell’Arte Antica (1995). Il termine Kofun significa letteralmente «antico tumulo». Indica quindi una sepoltura, “generalmente non ipogea, costituita da un tumulo a pianta circolare, oblunga o di varie forme, che caratterizza in Giappone l’omonimo periodo”. Il periodo si sviluppa tra la fine del III e quella del VII sec. d.C. La cultura funeraria è condizionata dalle classi economicamente e politicamente dominanti. Nella cultura dei kofun si distingue tre fasi: iniziale (III-IV sec.), media (V sec.), tarda (VI- VII sec.). Nelle fasi iniziale e media, i kofun “si configurano come monumenti politici edificati per esaltare l’autorità di un capo, secondo l’esempio delle tombe cinesi e coreane, nella fase tarda si assiste a un proliferare di tumuli di dimensioni minori (mediamente meno di 15 m di diametro), contenenti talora più sepolture, destinati soprattutto a una burocrazia locale addetta al controllo della produzione agricola sempre più fiorente: dei **c.a centomila k.** noti finora in Giappone, si calcola pertanto che almeno il 90% appartenga alla fase tarda.”

In (Poncini, G., 1995) we find told that the number of kofun is about one hundred thousand. Some authors have recently asserted, in a MDPI published study about the orientation of 158 kofun, that “This study has never been carried out in Japan due to the very large number of Kofun and to the fact that access to the perimeter is usually forbidden”. The number of kofun is really large (100,000). However, as we have previously seen, the orientation of kofun and burial chambers inside them have been studied by Japanese researchers (see Goto, A., 2018, Hojo and Goto, 2021, and references therein). Let us continue with (Poncini, G., 1995), where we find discussed the

orientation of kofun too.

Nella loro forma originaria, osservata nel Kyushu e nel Kinki, “di semplice fossa atta a contenere una bara, secondo la teoria tradizionale il k. sarebbe il risultato dell'evoluzione della tomba megalitica di forma geometrica del periodo Yayoi con evidenti influssi continentali, soprattutto coreani”. I kofun erano disposti sulla superficie del terreno o su una terrazza sopraelevata. Il tumulo crebbe via via in dimensioni e con forme differenti. “Le recenti ricerche hanno tuttavia documentato già nel primo e medio periodo Yayoi la presenza nel Kinai di tumuli di sezione circolare (enfun) e quadrata (hōfun), di esigue dimensioni, adibiti a sepolture singole o collettive, generalmente delimitati da fossati; sono inoltre emerse alcune sepolture della fine del periodo Yayoi con elementi comuni *al tumulo classico a forma di toppa di serratura (zenpōkōen, letteralmente «davanti quadro, dietro tondo»)*, destinato ad assumere, tra il IV e il V sec., aspetti monumentali. *Tuttavia è stato pure rilevato che, a differenza del prototipo Yayoi, il classico zenpōkōen presenta costantemente l'orientamento della salma verso N, il che sembrerebbe sintomatico del sorgere di nuove concezioni religiose contemporaneamente al consolidarsi di questa struttura funeraria*” (Poncini, G., 1995).. However, it has also been noted that, unlike the Yayoi prototype, the classic zenpōkōen constantly presents the orientation of the body to the North, which appears to be symptomatic of an emergence of new religious concepts, contemporary to the consolidation of this funerary structure.

“I tumuli di tipo enfun e hōfun, tra la fine del III e la metà del IV sec., evolsero in forme più complesse, come quella a base quadrata sormontata da una cupola (jōenkahōfun), oltre alla tipologia classica del k. zenpōkōen. Quest'ultimo, particolarmente diffuso nelle regioni del Kinki, del Mare Interno e del Kyushu settentrionale, si presenta spesso in dimensioni maestose e circondato da ampi fossati: oltre al celebre k., presente nella prefettura di Osaka, dell'imperatore Nintoku (lungo 486 m e alto 36 m, la cui volumetria complessiva supera quella delle piramidi egizie), e quelli, di poco inferiori, degli imperatori Ōjin e Richū, ne sono noti c.a 40 di lunghezza superiore ai 200 m”. In (Poncini, G., 1995) si sottolinea che “la cella funeraria disposta verso la sommità del tumulo non riprende generalmente la forma esterna del kofun. [the funerary chamber, arranged near the top of the mound, does not generally reproduce the external shape of the kofun] La medesima struttura zenpokoen che di solito presenta la parte anteriore squadrata a trapezio e quella posteriore tumuliforme, può avere talora una forma squadrata sul retro, come è stato riscontrato in c.a 300 tumuli (un decimo del totale dei k. zenpokoen noti in Giappone), nessuno dei quali supera i 200 m di lunghezza” (Poncini, G., 1995).

Sempre in (Poncini, G., 1995) troviamo altri dettagli sull'evoluzione della cella funeraria, dove ad un certo punto, compare un corridoio davanti ad essa. “Tra la seconda metà del VI sec. e la prima metà del. VII alle strutture tradizionali dei k. si aggiungono, sul davanti o sul retro del tumulo, prolungamenti di base quadrata, secondo i più complessi modelli continentali: la cella funeraria è preceduta da un corridoio d'accesso cui si aggiunge talora un ambiente supplementare indipendente destinato a contenere le offerte

al defunto.

Questa appendice strutturale si accompagna alla diminuzione delle dimensioni generali del tumulo che si riscontra nella tarda fase della cultura dei kofun” (Poncini, G., 1995).

La dimensione dei kofun andò poi a ridursi e nacque il fenomeno del loro raggruppamento in aree adibite a centinaia di sepolture. Ciò è attestato dai molti siti con “suffisso toponomastico senzuka (letteralmente «mille tombe»), p.es. Toki-senzuka, Shinoda-senzuka, Takayasu-senzuka (prefettura di Osaka), Toriya-senzuka (prefettura di Nara) e Iwaba-senzuka (prefettura di Wakayama)”. (Poncini, G., 1995) continua con dettagliate considerazioni tra le varie differenziazioni strutturali dei kofun e l'espressione dell'ordine dettato dallo Yamato e dalle situazioni politiche nella prefettura di Nara.

In (Poncini, G., 1995), troviamo anche la descrizione dei ricchi corredi funebri dei kofun. “Disposto generalmente attorno alla testa e ai fianchi del defunto, esso consiste soprattutto in gioielli, bracciali, orecchini, anelli, perle, pendenti fra cui i caratteristici magatama (v.), pettini in lacca, e persino oggetti in vetro. Legate probabilmente a funzioni magico rituali sembrano le grandi spade cinesi iscritte e con l'impugnatura decorata da figure animali traforate, come pure gli specchi, disposti in ordine preciso intorno alla testa e sul petto dei defunti, contenenti spesso iscrizioni datate” (Poncini, G., 1995). Gli specchi più antichi sono di fabbricazione cinese, mentre i più recenti di produzione locale. Vi è poi il vasellame locale di foggia continentale. “Nelle tombe aristocratiche sono state rinvenute anche corone d'oro o in bronzo dorato simili a quelle del regno coreano di Koguryō (v. coreana, arte)” (Poncini, G., 1995). E poi i nobili hanno “armi e bardature: archi, punte di freccia, farette, lance, spade, pugnali, scudi, selle con finimenti”. E poi ci sono gli ornamenti litici finemente decorati (bracciali, vasi, cilindrici o a forma di biwa). Dalla seconda metà del IV secolo, la bara lignea viene inserita all'interno di un sarcofago in terracotta o in pietra, talora sagomato a forma di imbarcazione. Spiega (Poncini, G., 1995), che questo tipo di sepoltura parte dalla zona di origine del Kinki per estendersi “alle attuali prefetture di Shiga, Aichi, Gifii e Mie, il che attesta l'estendersi a E della sfera di influenza dello Yamato”.

In (Poncini, G., 1995) si sottolinea che, “al di là delle differenze morfologiche, i k. furono costruiti secondo un'unità di misura fissa per dati periodi: tra il IV e il V sec., p.es., si usò un'unità corrispondente a 23 cm, mentre tra la metà del V e la metà del VI sec. ne fu scelta una di 25 cm corrispondente all'unità adottata nel Sud della penisola coreana e successivamente quella cinese dei Wei Orientali (534-550), corrispondente a 35 cm”.

“Oltre al Kinai, *culla della cultura dei k.*, sono state identificate alcune importanti aree di diffusione: quella di Kibi, che comprende parte delle prefetture di Okayama e Kagawa, sulle due rive opposte del Mare Interno, quella di Izumo, che comprende le prefetture di Tottori e Shimane, quella di Hyūga, nella parte orientale del Kyushu, che appare più affine alla cultura del Kinai che non a quella del vicino ma più isolato Kyushu settentrionale”. In (Poncini, G., 1995) troviamo anche menzionati il Nōbi, con le prefetture di Gifii e Aichi, lo Jōmō, con la prefettura di Tochigi. Poi c'è il Kyushu

settentrionale “che annovera, nelle prefetture di Fukuoka, Kumamoto, Saga e Oita, oltre cento tombe” (Poncini, G., 1995).

“L'introduzione del buddhismo verso la metà del VI sec. e il conseguente diffondersi della pratica dell'incinerazione segnò il declino della cultura funeraria dei k. osteggiata anche per motivi economici dalle autorità politiche, come appare nell'editto emanato nel 646 dall'imperatore Kōtoku, il quale, constatato il generale depauperamento provocato dalle spese per i sepolcri monumentali, stabilì le norme di sepoltura per ciascuna delle sei classi sociali, fissando il numero delle giornate lavorative da impiegare nella costruzione delle tombe e vietando di deporvi oggetti preziosi” (Poncini, G., 1995).

Da (Poncini, G., 1995) e dalla ricca bibliografia ivi menzionata, appare chiaro che sia i kofun che la loro orientazione sono stati ampiamente studiati in Giappone e continuano ad esserlo attualmente. Dato che l'orientazione della camera funeraria non ha generalmente la stessa orientazione del kofun, analisi con satellite non portano a conclusioni significative. Cosa diversa sono le strutture a keyhole del Sahara.

### **Tipo Coreano (in Italian)**

Da Arte Giapponese, di G. Poncini, in Enciclopedia dell' Arte Antica (1994).

“Lo sviluppo e la diffusione dei tumuli, sintomatica della formazione di una prima compagine statale, si concentra soprattutto nell'area fra Osaka, Nara e Kyoto, divenuta dal VI al VII sec. centro dello Yamato. Il tumulo originario, a sezione circolare o ellittica (enfun) e quadrata (hōfun) assume successivamente una forma composita di sepoltura quadrata a cupola (jōenkaōfun) e infine a «toppa di serratura» (zenpōkōenfun) con piattaforma trapezoidale antistante e tumulo sul retro. Tale forma viene generalmente associata all'autorità centrale dello stato Yamato e alla sua espansione. Questo tipo di sepoltura, infatti, pur rimanendo concentrato maggiormente nella zona d'origine, si diffonde, a distanza di c.a 50-100 anni, prima nei territori limitrofi e successivamente, a notevole distanza, nelle aree agricole più ricche, dal Kyushu al Kantō. La cronologia dei tumuli, stabilita inizialmente attraverso le iscrizioni datate degli specchi metallici rinvenuti in essi, si è venuta via via basando sulle caratteristiche strutturali delle sepolture. Mentre le prime tombe presentano un varco alla sommità del tumulo, da cui veniva calata la bara entro un cubo megalitico, verso il V sec. compare il tipo coreano di camera sepolcrale dotata di corridoio laterale di passaggio. Gli haniwa (v.), i c.d. cilindri d'argilla, cavi e modellati a mano, alti mediamente 40-50 cm, ornavano l'esterno della tomba, posti sulla sommità, lungo il corpo a cerchi degradanti o lungo le falde, formando un recinto e contribuendo alla compattezza del tumulo; essi sono l'espressione artistica più rilevante e originale dell'epoca.”

### **Takamatsuzuka (archaeoastronomy)**

A late kofun is the Takamatsuzuka Tomb (高松塚古墳, Takamatsuzuka Kofun) or "Tall Pine Tree Ancient Burial Mound" in Japanese is an ancient circular tomb in Asuka village, Nara Prefecture, Japan. [https://en.wikipedia.org/wiki/Takamatsuzuka\\_Tomb](https://en.wikipedia.org/wiki/Takamatsuzuka_Tomb)

“The tomb is thought to have been built at some time between the end of the 7th century and the beginning of the 8th century. It was accidentally discovered by a local farmer in the 1960s. The mound of the tomb was built of alternating layers of clay and sand. It is about 16 metres (52 ft) in diameter and 5 metres (16 ft) high. Excavation yielded a burial chamber with painted fresco wall paintings of courtiers in Goguryeo-style garb. The paintings are in full color with red, blue, gold, and silver foil representing four male followers and four serving maidens together with the Azure Dragon, Black Tortoise, White Tiger, and Vermilion Bird groups of stars. The paintings are designated a National Treasure. For whom the tomb was built is unknown, but the decorations suggest it is for a member of the Japanese royal family or a high-ranking nobleman”. The Wikipedia is the Kitora Tomb, in Asuka.

“In 2012, similar mural was found in a tomb in Mongolia. The round mound, thought to be built by Göktürks in the 7th century, was excavated by Mongolian and Kazakh researchers. The mural depicts Azure Dragon and White Tiger with a procession of Chinese and Sogdian, and other Caucasoid traders.”

The Kitora Tomb (キトラ古墳, Kitora Kofun) is another late kofun. Here some details from [https://en.wikipedia.org/wiki/Kitora\\_Tomb](https://en.wikipedia.org/wiki/Kitora_Tomb) “The tomb is believed to have been constructed some time between the 7th and early 8th centuries, but was only discovered in 1983. A small stone chamber, the Kitora Tomb is a little over 1 metre in height and width and about 2.4 metres long, just large enough to bury a single person. The four walls are aligned with the cardinal points of the compass, and respectively feature the Black Divine Tortoise of the North, the Azure Dragon of the East, the Red Phoenix of the South, and the White Tiger of the West. On the ceiling of the chamber there is also an astronomical chart that has been the focus of much research and debate by scholars in the field of archaeoastronomy. In addition, the 12 zodiac animals-headed figures with human body are painted on the wall, which may be one of the oldest remaining zodiac murals in East Asia.”

From the “Astronomy Across Cultures: The History of Non-Western Astronomy”, by Helaine Selin, 2012: “What is significant about Takamatsu Zuka Kofun is that it clearly shows the influence of Chinese and Korean cosmology on Japan in the Asuka Era (late 6th to early 8th centuries). In 1998, another such tomb, located about 1 km to the south of Takamatsu Zuka Kofun on Mount Abe and named Kitora Kofun (after the Kitaura area of Asuka village), was explored. The tomb was not actually entered but probed with a sub-miniature camera. It was dated within the same Asuka period as Takamatsu Zuka Kofun. While there are some remarkable similarities, there are also some anomalous differences in the paintings of the two tombs. (See Inokuma, Izumimori, Kawakami, Sawada, et al, 1999). In Kitora Kofun, the paintings of the animals of

cardinal directions are in somewhat better condition than those of Takamatsu Zuka Kofun, in which some paintings appear to have been defaced in ancient times. The animals were painted in a freer style than those found in the tomb to the north. There also are more stars in the Kitora tomb paintings of the sei shuku as well as many other constellations not found in the Takamatsu Zuka tomb”.



*The Black Turtle and a snake. Image Courtesy*

<http://benedante.blogspot.com/2015/07/the-ancient-star-chart-in-kitora-tomb.html>

## **I cinque elementi**

Da [https://it.wikipedia.org/wiki/Si\\_Ling](https://it.wikipedia.org/wiki/Si_Ling)

I Siling sono le quattro bestie guardiane della mitologia cinese, note nell'Onmyōdō giapponese col nome Shishin o Shijin, si dice alla voce di Wikipedia. Ci sono Quattro Animali (Cinese: 四象, pinyin: Sì Xiàng) che “sono quattro creature mitologiche nelle costellazioni cinesi. Ognuno dei Quattro Animali rappresenta un punto cardinale e una stagione dell'anno, associate alle direzioni del cielo, ognuno con le proprie caratteristiche e origini”. “Inoltre, vi è un quinto animale leggendario, (Cinese: 黄龙, pinyin: Huáng-lóng), detto il Drago Giallo del Centro. La direzione cardinale associata a questo animale è appunto il "centro", e il suo elemento è la Terra”. “Ogni membro del Siling ha sette costellazioni ad esso associate”, seishuku nella tradizione giapponese. e.

I Cinque Animali sono : Drago Azzurro 青龍, Uccello Vermiglio 朱雀, Tigre Bianca 白虎, Tartaruga Nera 玄武, Drago Giallo 黃龍.

I Cinque Elementi									
Nome	Kanji	Hangŭl	Trasl. pinyin	Trasl. Hepburn	Trasl. McCune-Reischauer	Nome Umano	Punto cardinale	Stagione	Elemento
Drago Azzurro	青龍	청룡	Qīng Lóng	Seiryū	Chōng Ryōng	Mang Zhang (孟章)	Est	Primavera	Legno
Uccello Vermiglio	朱雀	주작	Zhū Què	Suzaku	Ju Jag	Ling Guang (陵光)	Sud	Estate	Fuoco
Tigre Bianca	白虎	백호	Bái Hǔ	Byakko	Baekho	Jian Bing (監兵)	Ovest	Autunno	Metallo
Tartaruga Nera	玄武	현무	Xuán Wū	Genbu	Hyōn Mu	Zhi Ming (執明)	Nord	Inverno	Acqua (Terra)
Drago Giallo	黃龍	황룡	Huáng-lóng	Ōryū (Kirin)	Hwang Lyōng	-	Centro	-	Terra

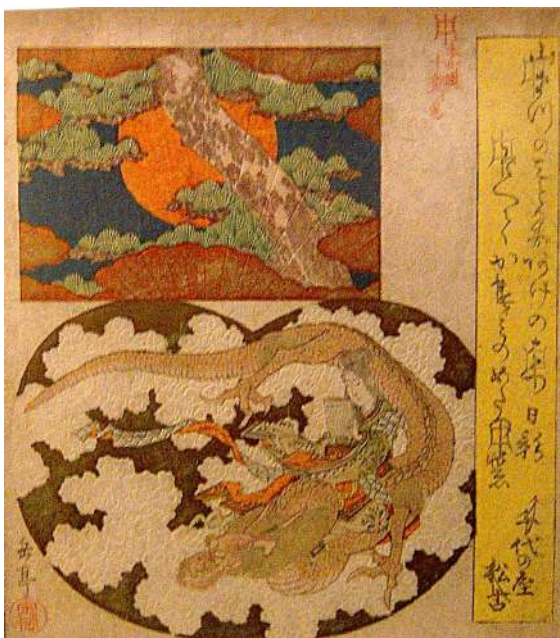


Fig. 22 - Yashima Gakutei (1786-1868) - Dea con drago e sol nascente, Periodo Edo, c.1825. Xilografia su carta, nishiki-e con pigmenti metallici e gauffrage. Goddess with dragon and rising sun, Edo period, c.1825, Xylography on paper, nishiki-e with metal pigments and gauffrage. Museo Arte Orientale, Torino. Picture taken by the author.

### Shitennō and the four directions

The Shitennō are protectors of the four directions. They ward off evil, guard the nation, and protect the world from malicious spirits, hence the Japanese term Gose Shitennō 護世四天王, literally “four world-protecting deva kings.” Each represents a direction, season, color, virtue, and element. They originated in India but were later adopted into the Buddhist pantheon in China and Japan. They are venerated as *temple guardians* and protectors of the nation. In China, statues of the four are often placed near temple entrances, but in Japan, effigies of the four are more commonly placed around the central deity on the main altar. The four are commanded by Taishakuten, Lord of the Center. They are nearly always dressed in armor (yoroi 鎧), looking ferocious (funusō 忿怒相), and carrying weapons or objects. They are also typically shown standing atop evil spirits (known as Jaki in Japan).

Shitennō iconography is related to the Four Celestial Emblems (dragon, red bird, tiger, turtle) of China, who also guard the four cardinal directions. In Japanese statuary, the Shitennō are almost always portrayed in animated warrior poses rather than static postures of ease or meditation.

Adapted from <http://www.onmarkproductions.com/html/shitenno.shtml>

See also <http://www.onmarkproductions.com/html/buddhism.shtml>



*Fig. 23 - Tenno, Uno dei Re Protettori. Legno di cipresso (hinoki), h. 119 cm. Giappone, periodo Fujiwara, XII secolo. Museo Arte Orientale, Torino. Il museo è in possesso di una coppia di statue (Nitenno, due tenno) dall'atteggiamento fiero che, calpestando figure mostruose, levano il braccio originariamente dotato di un'arma oggi perduta. Questa coppia è tratta dal gruppo dei Quattro Grandi Re degli Orientali (Shi-tenno) che la cosmologia buddhista colloca ai lati del Monte Meru. Come protettori, in Giappone gli Shi-tenno furono posti ai quattro angoli intorno all'immagine principale del tempio. Le due statue del MAO sono scolpite nella tecnica ichiboku zukuri in un singolo blocco di legno, salvo le braccia. Fotografia dell'autrice.*



### Three Periods

From <https://www.britannica.com/art/Japanese-art/Tumulus-or-Kofun-period>

About kofun, it is told the following. “Some authorities have suggested that the development of these tombs was a natural evolution from a Yayoi period custom of burial on high ground overlooking crop-producing fields. While partially convincing, this theory alone does not account for the sudden florescence of mound tombs, nor does it address the fact that some aspects of the tombs are clearly adaptations of a form preexisting on the Korean peninsula. Indeed, implements and artifacts discovered within these tombs suggest a strong link to peninsular culture.”

Britannica tells that “three *distinct* shifts in tomb style can be discerned that define the chronology of the period: Early Kofun of the 4th century, Middle Kofun covering the 5th and early 6th centuries, and Late Kofun, which lasted until the beginning of the 8th century and during which tomb burials were gradually replaced by Buddhist cremation ceremonies. The Late Kofun roughly coincides with the periods known to art historians as the Asuka (mid-6th century–645) and the Hakuho (645–710).”

“Tombs of the *Early Kofun period* made use of and customized existing and compatible *topography*. When viewed from above, the tomb silhouette was either a rough circle or, more characteristically, an upper circle combined with a lower triangular form, suggesting the shape of an old-fashioned keyhole. The tombs contained a space for a *wooden coffin and grave goods*. This area was *accessed through a vertical shaft* near the top of the mound and was sealed off after burial was completed. The deceased were buried with materials that were either actual or symbolic indicators of social status. The grave goods were intended, as well, to sustain the spirit in its journey in the afterlife. They included bronze mirrors, items of jewelry made from jade and jasper, ceramic vessels, and iron weapons. Adorning the summit of the mound and at points on the circumference midway, at the base, and at the entrance to the tomb were variously articulated clay cylinder forms known as haniwa (“clay circle”).”

“After the 4th century, tomb builders *abandoned naturally sympathetic topography* and located mounds in *clusters on flat land*. There are differences in mound size, even within the clusters, suggesting levels of social status. The scale of these tombs, together with construction techniques, changed considerably. The tomb generally assumed to be that of the late 4th-century emperor Nintoku, located near the present-day city of Ōsaka, measures nearly 1,600 feet (490 metres) in length and covers 80 acres (32 hectares). It is alternately surrounded by three moats and two greenbelts. Approximately 20,000 haniwa were thought to have been placed on the surface of this huge burial mound.”

“In the later part of the 5th century, *the vertical shaft used to access the early pit tomb was replaced by the Korean-style horizontal corridor leading to a tomb chamber*. This made multiple use of the tomb easier, and the notion of a family tomb came into existence. Also notable from the 5th century is the archaeological evidence of horse trappings and military hardware in tombs. Haniwa representing warriors and stylized military shields are also prominent. Contemporaneous Chinese records refer to the Five

Kings of Wo (Japanese: Wa) to describe the rulers of Japan in this period, and Chinese and Korean documentation refers to Japanese invasions of the Korean peninsula in the late 4th and early 5th centuries. There is evidence that multiple Japanese diplomatic missions to China in the 5th century requested from the Chinese rulers suzerainty over portions of the southern Korean peninsula. These diplomatic and military forays combine with the grave goods of the period to suggest a strong military cast to 5th- and 6th-century culture. However, in time these accoutrements of war and symbols of physical power are found in ancillary tombs rather than in the grave sites of known leaders. This suggests a gradual consolidation of power and the formation of a specialized military service within the kingdoms.”

Britannica continues stressing that the Japan’s close relationship with Korean and Chinese cultures during the Kofun period had a strong influx on peninsular craftsmen. “This is reflected in the production of sue ware mentioned above and in the high quality of metalwork achieved. Mirrors are a particularly fine example of the development of metal craft”. Then Britannica remembers the Amaterasu myth of the cavern.

“Late Kofun tombs are characterized by schemes of wall decoration within the burial chambers. Two especially important tombs have been excavated in the area just to the south of present-day Nara. The Takamatsu tomb (1972) and the Fujinoki tomb (1985) suggest high levels of artistic achievement and a sophisticated assimilation of continental culture. The Takamatsu tomb is noted for its wall paintings containing a design scheme representing a total Chinese cosmology. Included are especially fine female figure paintings. At Fujinoki exquisite and elaborate metalwork, including openwork gold crowns, a gilt bronze saddle bow, and gilt bronze shoes, was discovered. Design motifs show evidence of Chinese, Central Asian, and Indian sources.”

### **Late Kofun Period**

From “Monuments and Sites Division, Agency Cultural Affairs”, Volume 6. “In the Late Kofun period, apart from several giant examples, the sizes of even the large-scale keyhole tombs shrank to around 100 m and the mound structures also became simplified. *In addition, the burial facilities shifted to corridor-style stone chambers under the influence of the Korean peninsula* (see Figure 2-97, also Appendix 3.a Supplementary information related to kofun “III. Burial Facilities, Grave Goods, and Funerary Rituals”). In the case of the corridor-style stone chamber, the chambers were constructed at the same time as the mound, and multiple individuals could be buried one after another in a single tomb’s burial facility. This differed greatly from the burial facilities seen up to that time, suggesting a transformation of the funerary rituals, themselves. Funerary rituals using the whole mound top as a stage were no longer performed (Figure 2-98). As for the grave goods, horse trappings came to occupy a central position instead of weapons and armor (see Appendix 3.a Supplementary information related to kofun “III. Burial Facilities, Grave Goods, and Funerary Rituals”). (See the Figures in “Monuments and Sites Division, Agency Cultural Affairs”,

Volume 6). Additionally, dense clusters of tens to hundreds of small mounded tombs appeared during this period; these clusters of small mounded tombs (gunshufun) are distinguished from mounded tomb groups, or kofun groups (kofungun). In the majority of cases, these clusters were made up of round tombs, with diameters of 10 m to 20 m, characterized by their high uniformity. The construction of densely packed clusters of small mounded tombs signifies that the cultural tradition of kofun building had spread to a wider range of people, in particular, low-ranking people outside of the elite class that had dominated tomb-building until then. This indicates that the very meaning of kofun had evolved.”

*It means that the tombs of the late period, those with the burial chamber/corridor system, are different from the tombs with a keyhole shape, based on pits (see Figures in "Monuments and Sites Division, Agency Cultural Affairs", Volume 6). The layout of a keyhole tomb is given in the Volume 6, for the late Kofun period. We find a corridor-style stone chamber. However, in this reference there is no mention of corridors aligned with the long axis of the kofun or perpendicular to the symmetry axis, that is parallel to the trapezoidal base.*

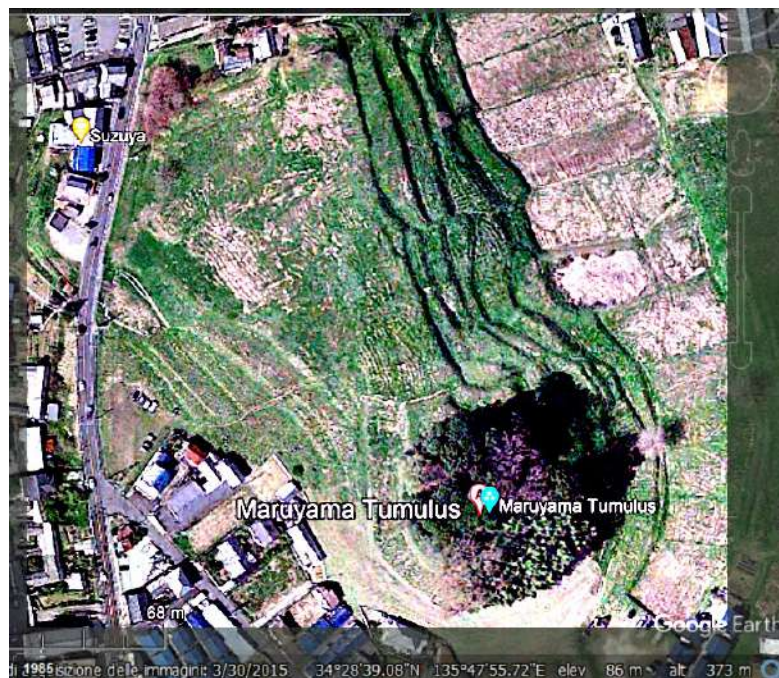


Fig. 24 – Maruyama Tumulus

### Misemaruyama Kofun (見瀬丸山古墳)

From <https://www.japanese-wiki-corpus.org/building/Misemaruyama%20Kofun.html>

25 February 2022 - HAL

The Misemaruyama Kofun (Ancient Tomb) is a zenpoken fun in Mise-town, Gojyo-town and Ogaru-town, in Kashiwara City, Nara Prefecture. “It is presumed to have been constructed in the latter half of the sixth century, and the theory that it is the mausoleum of Kimmei Emperor and Soga no kitashihime is widely accepted among scholars.”

The kofun is placed on a slope of a hill. It is an extremely large. The back circular part 115 meters in diameter. This kofun is the largest in size in Nara Prefecture, the sixth largest even in Japan. “Moreover, its corridor-style stone chamber is 28.4 meters in total length, ranking first in size across the country. The dromos with its ceiling covered with six pieces of huge natural stone 4.8 meters in length is 20.1 meters in length, more than 1 meter in width and 1.5 meters in height. The burial chamber is 8.3 meters in length, 4.1 meters in maximum width, in which two hollowed-out house-shaped stone coffins were placed in an L-letter shape. ... As shown in the name of Maruyama (round mountain), many people had regarded this tomb simply as an old round tomb or a round barrow, and in old days this tomb was called Gojyono Maruyama Kofun. Since the Meiji period it has been called by the present name, but locally it is still called Maruyama Kofun because its back round part lies in Gojyono-town and a large portion of its front part in Ogaru”.

“When a child living Kashiwara City was playing with his friends in 1991, he found an entrance to the dromos of a corridor-style stone chamber outside the hedge of this ancient tomb. The father of the child who heard this story entered the inside through the dromos with his child on the early morning of May 30 before he went to work, and took photographs of the inside of the stone chamber.”



*Fig. 25 - “Located high on a mountain side near Yashiro Station in Chikuma City, Nagano, is the Mori Shogunzuka Kofun.”*

### **Modifying the nature**

“Located high on a mountain side near Yashiro Station in Chikuma City, Nagano, is the Mori Shogunzuka Kofun. This late Kofun Period keyhole-shaped burial mound dates to the 4th Century AD and was built for a local ruler during the period. Known for centuries by the locals, it had been plundered by grave robbers numerous times ... By 1992 the tomb had all of its exterior stonework rebuilt, its decorative pottery that once adorned its top replaced with replicas. The surrounding land was cleared, revealing numerous additional circular burial mounds, and the Mori Shogunzuka Kofun Museum was built at the base of the mountain, where the tomb's interior structure and remaining artifacts are displayed.” (Robert Grey, 2014, A Tomb with a View. Available at the link <https://en.japantravel.com/nagano/a-tomb-with-a-view/12925>)

In <https://www.megalithic.co.uk/article.php?sid=29800> we can find told that “The crooked shape, head nodding, indicates that this tumulus was constructed by modifying the natural mountain ridge and that it has no astronomical meanings”.

### **Keyhole Tombs in Korea**

From <https://factsanddetails.com/japan/cat16/sub105/entry-5294.html>

“In recent years keyhole tombs have been found in areas of the ancient Kaya (Gaya) confederacy on the southern Korean peninsula. The keyhole tombs that have thus far been discovered there were built between the 5th and the 6th centuries. Whether they were built for a local chieftain influenced by Japanese culture or for a Japanese immigrant is debated. Some scholars say the keyhole tombs in Korea are evidence of Japanese culture influencing Korean culture. Other scholars say it is the other way around: another example of Korean culture influencing Japanese culture. ... Kawagoe wrote: Thirteen “keyhole-shaped tombs dated to the latter half of 5th century to the first half of 6th century – have been found in Korea, all located in South Cholla province in the area of the Yongsan River basin — six of these have been excavated. All 13 tombs were surrounded by moats with many Korean-made “haniwa”-like cylindrical potteries placed on top of these mounds. The tombs also had corridor-style stone chambers, some of which with walls that are painted with red coloring...closely resembling corridor-style tombs in North Kyushu dating to the 5th and the 6th century.[Source: Aileen Kawagoe, Heritage of Japan website, heritageofjapan.wordpress.com]

### **Pits and corridors**

From <https://jref.com/articles/kofun-period.208/>

“The appearance of tomb mound buildings at the end of the third century in Japan is so sudden that early archaeologists thought the tombs reflected either conquest or influence from outside the archipelago. The identity of the contributing society was sought among the tomb-building cultures of China and northern Korea”. However, in 1952, the Japanese archaeologist Kobayashi Yukio demonstrated that “there were no similarities in mound shape of burial chamber between Japan and the continent. ... The earliest tomb mounds of the Kofun period were built in the Kinai Region (畿内, Kyōto-Nara-Ōsaka). From there, tomb building spread to northern Kyushu ... *Early tombs had either round or keyhole-shaped mounds.* Keyhole tombs may have either front-square and rear-round mounds (前方後円墳 zempō-kōen-fun) or front-square and rear-square mounds (前方後方墳 zempō-kōhō-fun). *The front mounds may have originally served as a place for funerary rites; the main burial is usually in the rear mound.* ... Burial facilities consisted of a wooden coffin buried directly in the summit of the mound or placed in a stone chamber of the tateana sekishitsu (竪穴式石堂, lit. vertical hole, stone chamber”) style. **To construct a stone chamber, a pit was sunk into the top of the mound and lined with brick-sized stones.** A floor of smooth clay was prepared for the wooden coffin. Then ceiling rocks were laid to seal the chamber; finally, the earth was mounded over the top. Clay cylinders and funeral sculptures (埴輪 haniwa) were often placed on the tomb summit over the grave. Usually, the surface of the tomb was paved with rocks. ... In the late fourth century, tomb building spread further into eastern and northern Japan and to the western coastal areas. The tombs assumed a greater variety of shapes, square or gourd-shaped, formed by two round mounds joined together. Alternate burial facilities were also developed: large stone coffins were placed in the **pit-style chambers** or directly into the ground, and wooden coffins were embedded in prepared clay enclosures rather than stone chambers. ... In the fifth century, the character of the tombs underwent drastic changes. ... Wide moats became a common feature, dramatically increasing the area of the tombs (e.g. the Daisen-Kofun, the tomb of Emperor Nintoku in Ōsaka, or the Ōjin Mausoleum). ... [During the Middle Kofun-Period] A new type of tomb chamber called yokoana-shiki-sekishitsu (横穴式石堂, lit. “horizontal hole, stone chamber”) was also transmitted from the Korean peninsula in the fifth century. **Equipped with a corridor entrance,** this kind of chamber was oriented so that one could walk into it, rather than only being accessible through the ceiling like the pit-style chamber. To construct a corridor-style chamber, a level surface was provided on the mound, and the stone chamber was then built upon the flat surface. The entrance to the corridor was positioned so that it opened onto the slope of the mound. Finally, the earth was piled over the chamber, embedding it in the centre of the mound, e.g. the Ishibutai Kofun (石舞台古墳) in Asuka, Nara Prefecture. The corridor allowed the tomb to be used not just once but several times, and in the late Kofun period, family tombs became quite popular.”

From [http://www.miyazaki-archive.jp/d-museum/mk-heritage/en/specialmention/urial\\_thought.html](http://www.miyazaki-archive.jp/d-museum/mk-heritage/en/specialmention/urial_thought.html) “Tombs in East Asia underwent a major transformation, from pit-type burial facilities such as pit-style stone chambers to tunnel-type burial facilities. These tunnel-type burial facilities spread throughout East Asia under the influence of

the Chinese mainland (brick-chambered tombs), passing south on the Korean Peninsula from Koguryo to Paekche and Kaya, and then on to the Japanese archipelago. Stone chambers appeared from the second half of the 4th century to the beginning of the 5th century. In northern Kyushu, stone chambers with a side entrance appeared, which then developed into corridor-style stone chambers. While these stone chambers were only found in a limited number of areas during the 5th century, including Kinai, by the 6th century they were being built throughout the Japanese archipelago.”

**Kofun (tumulus) (古墳) from [www.japanese-wiki-corpus.org/](http://www.japanese-wiki-corpus.org/)**

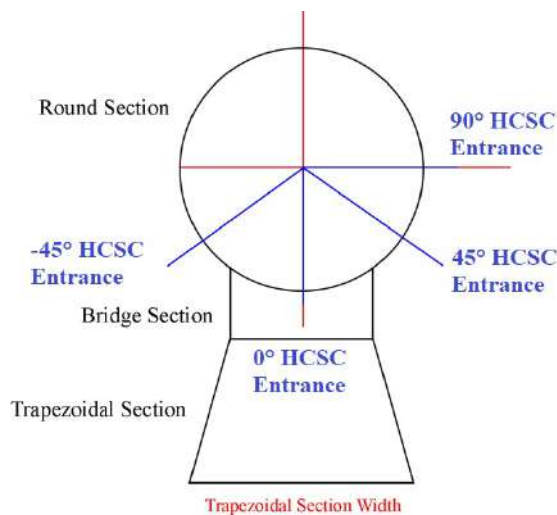
“Shapes: Beginning with the round barrow shape and square tumulus which are the basic shapes, there are many kinds of kofun such as hakkaku-fun (octagonal tumulus) (Noguchino Ono-haka) and candy-wrap (keyhole shape with one more handle) shape mound (Kushiyama Kofun and Tatetsuki Kofun). In addition, there are the zenpo-koen (keyhole-shaped tomb) mound, zenpo-koho (square front, square back) mound, soen (double round) shape mound and soho (double square) shape mound, which all have two tumuli. Major kofun usually have two tumuli. There are many different shapes of mortuary spaces where the dead are entombed. A representative of a zenpo-koen (keyhole-shaped tomb) mound is Daisen (大山 also written as 大仙) Kofun in Sakai City, Osaka Prefecture. Because such a long time has passed since their construction, most kofun have trees growing on them, but the true state of a kofun at the time of completion was without trees. Such examples are Goshiki-zuka Kofun and Mori Shogun-zuka Kofun, which have both been restored to their original states.”

“Mortuary Spaces: There are two types of mortuary spaces of kofun - pit type and horizontal tunnel type. The pit type consisted of a hole which was made from the surface of a tumulus called a Boko (a tunnel to put a coffin in), where a coffin was placed at the bottom, and filled with sand again. Because of the structure, an added burial was impossible, and there was no space where people were able to move around. There are pit-type sekkaku (stone surrounding wooden coffins), nendokaku (clay surrounding wood coffins), and hakoshiki-sekkan stone coffins and wood coffins. Regarding the pit-type sekkaku, after placing a wooden coffin at the bottom, stones (building stone) are built up as walls and then ceiling stone is placed as a cover. The style was popular from the beginning to the middle of the Kofun period (tumulus period). For nendokaku, a wooden coffin placed at the bottom was wrapped in layers of clay which is considered a brief version of a pit-type sekkaku. This was popular from the middle of the beginning/middle of the Kofun period. Hakoshiki-sekkan consisted of making an enclosure with stones around the dead body like a box, and is the burial method from the Jomon period. The wooden coffin method was to simply place a wooden coffin and make no space in the tunnel; this is a burial method from the Yayoi period.”

“As for the types which have horizontal tunnels, mortuary spaces are built on the ground or on a surface during construction of a tumulus and the tumulus is then built on

it. Other types include Yokoana-shiki sekishitsu (horizontal stone chamber) and Yokoguchi-shiki sekkaku (stone sarcophagus with side entrance). Yokoana-shiki sekishitsu consists of a tunnel part as a passage (called sendo) and a room part for entombment (called genshitsu). When looking at the rock chamber from above, if the passage is located at the center of the burial chamber, it is called Ryosode-shiki and if the passage is located toward right side or left side, it is called Katasode-shiki. There are a variety of coffin types, such as stone coffins, wooden coffins and kanshitsu (dry lacquered) coffins. After an entombment, the passage is blocked by Heisokuishi (piled stones) or Tobiraishi (door stone), but added burial is possible when the block is removed. This method became popular from the late Kofun period. Yokoguchi-shiki sekkaku was originally a stone coffin which was placed in a rock chamber and the stone coffin itself became a mortuary space; many of this type can be seen at the end of the Kofun period.”

“Coffins: In the Kofun period, a dead body was placed in a coffin and then buried. There were wooden, stone and ceramic coffins and so on depending on the materials used. A hollowed out wooden coffin is called a "Sakitake-shiki mokkan" (split bamboo type wooden coffin) and made of a big tree which is divided into two pieces; the inside of both pieces is then hollowed out and became a cover and body of the coffin. However, the term "Sakitake-shiki" might be inappropriate because a big tree cannot be easily split like bamboo. A wooden coffin type called "combinational type" consists of four rectangle-shaped panels, a cover, bottom part, side plates for the right and left sides, and two small square-shaped panels, which are sometimes used as partitions.”



*Fig. 26 – In (Lee, D., 2014), it is told that the corridor has a theoretical entrance orthogonal to the symmetry axis. However offset is present in seven known cases.*

### **Yöngsan River basin keyhole-shaped tumuli**

The Yeongsan River is a river in south-western South Korea.



From (Lee, D., 2014): “With the exception of Charabong Tomb, all of the YSR keyhole-shaped tumuli are believed to have horizontal corridor stone chambers (HCSC), which have an entrance orthogonal to the long axis of the tomb, usually at the side of the round section, or at a 45° angle to the left if standing at the center of the round section and looking toward the trapezoidal section (see Figure 4-1, here Figure 26). These entrances open into the stone burial chamber. Among the seven tumuli where this HCSC offset angle is known, all the keyhole-shaped tumuli in the Kwangju regions have an offset of 45°, while Sindök Tomb and Changgobong Tomb in the south have an offset angle of 90°. Curiously, Yongdu-ri Tomb has an offset angle of 0°, which means that the orientation of the HCSC was parallel to the long axis of the tomb. Ch’iram-ni Tomb had an offset of minus 45° which is very unusual, and even caused some scholars to doubt if it was a keyhole-shaped tumulus at all.”

HCSC Offset Angle	Tomb Name
-45°	Ch’iram-ni Tomb
	Wölgye Tomb
	Changgosan Tomb
90°	Sindök Tomb
	Yogi-dong Tomb
	P’yosan Tomb
45°	Myöngghwa-dong Tomb
45°	Wölgye-dong Tomb 1
45°	Wölgye-dong Tomb 2
	Söngwöl-li Tomb
	Kosöng-ni Tomb
0	Yongdu-ri Tomb
90	Changgobong Tomb
n/a	Charabong Tomb

A table adapted from (Lee, D., 2014). Then, in the case of Korean keyhole kofun, the rule of a corridor perpendicular to the symmetry axis seems not true.

### The entrance

From (Lee, D., 2014), it seems that a sort of rule exists regarding the direction of the corridor in Korean Kofun. Let us try to find an example of Japanese keyhole Kofun with a corridor passage and an evident entrance from satellite images. It is the Watanuke Kannonyama Kofun (綿貫観音山古墳), a Kofun located in the Watanuki neighborhood of the city of Takasaki, Gunma Prefecture in the northern Kantō region of Japan. The site dates from the late 6th Century. [en.wikipedia.org](https://en.wikipedia.org/wiki/Watanuke_Kannonyama_Kofun).

The Watanuki Kannonyama Kofun is located on a plain on the west bank of the Ino River, six kilometers east of the city of Takasaki, and is constructed facing north, according to Wikipedia. That is, the side of the square part is facing North.



*Fig. 27 - Watanuke Kannonyama Kofun.*

“An archaeological excavation was conducted by the Gunma Prefectural Board of Education from 1967 to 1968. The tumulus has a two-tiered construction and a double horseshoe-shaped moat. From the excavated Sue ware pottery, the date of construction is estimated to be the latter half of the 6th century AD. Haniwa were found in various locations around the tumulus, but no trace of fukiishi were discovered. The haniwa were of especial interest, as they depict men, women, boys and girls, in various costume, including what appear to be warriors in armor and with shields, farmers and aristocrats. ... The burial chamber is a horizontal trapezoidal stone-lined room in the middle of the posterior circular portion, opening towards the southwest. It was found to be intact. The dimensions were the largest found in Gunma Prefecture, with a total length of 12.65 meters. The wall stones are andesite blocks, and the ceiling stones are sandstone. The blocks weigh up to 22 tons, but as there is no source for these materials from the neighborhood of the burial mound, it was necessary for these stones to be transported from a considerable distance to construct this tomb. The grave goods included two bronze mirrors, gold, silver and glass jewelry, iron swords, iron spearheads, fragments of armor, horse harnesses, saddles, stirrups and Sue ware, Haji ware, copper water bottles and other containers, many of which were found to be in excellent preservation.

These included copper water jars and iron helmets thought have been made in Northern Qi, and a copper water bottle and a mirror that were identical to objects excavated from the burial chamber of the Tomb of King Muryeong of Baekje in Gongju, South Korea. As these objects must have been cast from the same mould, it indicates a strong connection between the rulers of the Keno region of ancient Japan and the ancient Korean Peninsula”.

In this kofun, we can see that the corridor is, more or less, perpendicular to the long axis of the structure. But this corridor is pointing toward the sunset.

### **Gunshufun Tumuli and Kinship in Late kofun era**

In the “Routledge Handbook of Premodern Japanese History”, 2017, Friday K. F. Editor, we can find more details about the evolution from pits to corridor-style chambers.

“In the sixth century – the Late Kofun era – society transformed drastically, as is clearly reflected in several major changes in mortuary practices. These changes include a decline in the construction of large keyhole-shaped tumuli, a drastic increase in the construction of minor circular burial mounds in clusters (referred to as gunshufun), and the adoption of corridor-style horizontal burial chambers (referred as yokoana-shiki sekishitu) that could be opened for additional interments after the initial burial.

While the decline in the construction of keyhole-shape tumuli indicates that such tombs came to be restricted to fewer, and even higher-ranking elites, the appearance of gunshufun indicates that far more people came to be buried in mounded tombs in the Late Kofun era than before. Scholars interpret gunshufun as a reflection of the central policy incorporating more people into its own social system, and of more people rising to the social class that allowed them to be buried in mounded tombs. It may also be that ideology of the central polity changed, and keyhole-shaped tumuli were no longer as important as symbols of power as they had been in the Early and Middle Kofun eras.

*The adoption of the corridor-style horizontal burial chambers was important because the size of the chamber would become a status symbol, regardless of the form and size of the tomb itself. **This drastic change may have been initiated by King Keitai** (r. 507-531 or 534). For the first time in the Kofun era, burial chambers of the same structure and style were constructed in all mounded tombs, from the largest keyhole-shaped tumuli. Such as Keitai’s own – to small circular tombs less than 20 meters in diameter.*

The adoption of the corridor-style horizontal burial chambers was in a sense inevitable, because kinship structure changed in the sixth century. According to a very innovative study by Tanaka Yoshiyuki (1953-2014), while brothers and sisters had been buried together until the beginning of the sixth century, fathers and children who were not selected to be the heir came to be buried together from the early sixth century on. From the middle sixth century, mothers were also buried with their husband. In other words,

burial chambers had to have a structure that would allow additional interments, resulting in a corridor-style burial chamber that could be reopened later.”

Then, the adoption of the corridor-style chamber, instead of a pit, was due to an evolution in the society.

**Emperor Keitai** (繼体天皇, Keitai-tennō) (died 10 March 531) was the 26th legendary emperor of Japan, according to the traditional order of succession. No firm dates can be assigned to this emperor's life or reign, but he is conventionally considered to have reigned from 3 March 507 to 10 March 531. Let us note that he lived quite after **Emperor Nintoku** (仁徳天皇, Nintoku-tennō), also known as Ohosazaki no Sumeramikoto (大鷦鷯天皇), that was the 16th Emperor of Japan, according to the traditional order of succession. The tomb of Emperor Nintoku is the Daisen Kofun. Following (Friday, K. F., Ed., 2017), we can argue that the Daisen Kofun has a pit burial chamber and not a corridor-style one. While the existence of Emperor Nintoku is generally accepted as fact, no firm dates can be assigned to this Emperor's life or reign. He is conventionally considered to have reigned from 313 to 399, although this date is doubted by scholars.

Imashirozuka kofun is, possibly, the mausoleum of Emperor Keitai, yielding large quantities of huge haniwa.



Fig. 28 - Imashirozuka kofun

### Pit-dwelling-style stone lined chamber at the square end

<https://web-japan.org/atlas/historical/his15.html>

This web page is discussing the Daisen Kofun, “One of the Largest Mausoleums in the World Believed to Be the Tomb of a Fifth-Century Emperor”.

“In the Japan of the late third to late seventh centuries, the custom was to bury people of high social status in tombs that were covered with large mounds of earth. Such constructions are called kofun in Japanese archaeology, and the period is known as the Kofun Period (ca 300-710). These burial mounds come in various shapes and sizes and the characteristic form in Japan is the keyhole-shaped tumulus. The Daisen Kofun, with an overall mound length that exceeds about 500 meters (1,640 feet), ranks in scale alongside the Mausoleum of the First Emperor of the Ch'in dynasty in China and the Great Pyramid of Khufu in Egypt.

This huge tomb is located in the middle of a cluster known as the Mozu Tumuli, which consists of 92 large and small kofun lying within an area of roughly 16 square kilometers (6.2 square miles) in the city of Sakai in Osaka Prefecture. In the Kinki region (located in west central of Japan) during the Kofun Period, the leaders during the flourishing days of Yamato hegemony favored the use of key-hole-shaped burial mound, and nearly all of the historical tombs of emperors and empresses that are currently administered by the Imperial Household Agency are of this form.

It is said that the Daisen Burial Mound was built in the 5th century as the tomb of Nintoku, the 16th Emperor. It appears that the slopes of the mound and the moat around it were used for some kind of religious rites, since unglazed pots and hollow circular clay figures modeled on people and animal forms, known as haniwa, have been unearthed. Excavations in 1872 discovered a stone sarcophagus in a pit-dwelling-style stone lined chamber that was buried beneath the mound at the square end. Gold-plated armor, a helmet, and an iron sword were also found.”

There is also the Kurohimeyama tomb, which has a burial pit in the square part, as told in (Fukunaga, S., et al., 2018).

One such example of a medium-sized keyhole-shaped mounded tomb is Kurohimeyama. Measuring 144m long, this mounded tomb was built in the second quarter of the 5th century, slightly after Kondagobyōyama, just outside the Furuichi group. The excavation of the pit-style burial chamber in the frontal mound resulted in the discovery of 24 sets of iron armor, the greatest amount of armor found from a single tomb to date. All 24 sets consisted of iron helmets and iron cuirasses,

and twelve of them were accompanied by neck and shoulder guards. It is important to note that these suits of armor were discovered in the front part of the mound; as mounded tombs were built for the individual interred in the rear mound, the iron armor can be said to have thus been deposited in a subordinate burial chamber. An even larger quantity of iron armor may thus have been deposited in the main burial chamber of the round rear mound; unfortunately, the main burial chamber had been destroyed

From [https://en.wikipedia.org/wiki/Kurohimeyama\\_Kofun](https://en.wikipedia.org/wiki/Kurohimeyama_Kofun)

“The Kurohimeyama Kofun (黒姫山古墳) is a Kofun period keyhole-shaped burial mound, located in Mihara ward of the city of Sakai, Osaka in the Kansai region of Japan. The tumulus was designated a National Historic Site of Japan in 1957 with the area under protection expanded in 1978. The Kurohimeyama Kofun is a zenpō-kōen-fun (前方後円墳), which is shaped like a keyhole, having one square end and one circular end, when viewed from above. It is located in the wide flat land of the Minamikawachi region between the Furuichi Kofun Cluster and the Furuichi Kofun Cluster. The tumulus has a total length of 73 meters, with a 43-meter diameter posterior circular portion, and is orientated to the west. It was once covered in fukiishi and had rows of cylindrical haniwa. There was a ceremonial platform extending off of the northern edge of the central constriction and the tumulus was surrounded by a moat with a width of 15 meters and depth of two meters. The tumulus is believed to have been associated with the Tajihi clan, a powerful tribe which controlled this area around the mid-fifth century.

In 1946, a **pit-type stone burial chamber was detected in the anterior rectangular portion**, and this was first excavated in 1947, with five more excavations occurring between 1948 and 2000. Finds included 359 cylindrical haniwa, each measuring 80 centimeters in height by 40 centimeters in diameter, with a slightly recessed bottom. In addition, 25 or more lid-shaped haniwa at intervals between the cylindrical haniwa. From within the burial chamber, 24 sets of armor were found, mounted in an upright position in two rows. This is the largest number of armor which has been found at any site in Japan. In addition, there were 24 iron swords, 9 iron spearheads, 6 iron stakes, 56 iron arrowheads, and 5 knives, along with other items. The burial chamber itself was for meters long and was covered by eight sandstone blocks forming the ceiling, and river stones to provide drainage on the floor. **The burial chamber which was presumed to have existed in the posterior circular mound was apparently robbed in antiquity, and there is no trace remaining”.**



Fig. 29

## **Nintoku-tenno-ryo Kofun**

From “Monuments and Sites Division, Agency Cultural Affairs”, Volume 6.

“Nintoku-tenno-ryo Kofun [is] a keyhole-shaped mounded tomb located in the central part of the Mozu area, is the largest kofun in Japan. It was constructed on the western edge of the plateau, with its square front part facing toward the south so that the contours and the principal axis of the mound would run parallel to each other. The location and mound direction were apparently selected with clear consideration of how it would be viewed from Osaka Bay. On the bank of Nintoku-tenno-ryo Kofun, Chayama Kofun and Daianjiyama Kofun are situated. As they are located on the bank of Nintoku-tenno-ryo Kofun, these three are treated as one component part.

In the close vicinity around the moat of the Nintoku-tenno-ryo Kofun, there also exist many tombs such as Nagayama Kofun, Genemonyama Kofun, Tsukamawari Kofun, Osamezuka Kofun, Magodayuyama Kofun, Tatsusayama Kofun, Dogameyama Kofun, Komoyamazuka Kofun and Maruhoyama Kofun.

Nintoku-tenno-ryo Kofun’s mound length is 486 m, and its total length, including the moat, is 840 m. The height of the round rear part is 34.8 m. The mound has three tiers, and projections are attached to both sides of the constricted part.

According to the Edo-period geographical booklet of Sakai “Zen-kai sho shi” (1757), **a stone coffin was used in the burial facility in the round rear part**; with a length of around 318 cm and a width of approximately 167 cm, making it the largest stone coffin in Japan. In 1872, **on the south slope of the square part, a pit-style stone compartment and a chest-shaped stone coffin were uncovered**, from which grave goods were unearthed. Sketches made at the time revealed that the burial goods included armor made of gold-plated bronze plates, the only example of its kind, as well as glass containers assessed as having been brought from West Asia. On the sketches, it is written that the stone compartment was constructed by piling up river rocks and that its internal measurements were as large as 3.9 m by 2.4 m. For the coffin, an oblong chest-shaped stone coffin with projections for securing ropes (nawakake tokki) was used; it is recorded that its length was between 2.4 m and 2.7 m and its width was 1.45 m. The grave goods were returned to the chamber, and the chamber and the coffin were both reburied and preserved in this condition. The mound is surrounded by a triple moat and Nintoku-tenno-ryo Kofun is the only giant keyhole-shaped kofun with this characteristic.”

We have two burial chambers, one in the front square part, the other in the rear round part. Who could have been buried there, Emperor and Empress? May be it could be better the Emperor and his Bodyguard, or the chamber in the square part was a subsidiary place for precious objects. In any case, we have an axis, and evident axis, which is linking the two parts of the mounds, with two burial chambers inside. And this is the axis of the “bridge” between the two parts of the mounds. It is the axis of the kofun. This is the axis that we have to consider for the orientation of kofun, not the perpendicular one.



*Fig. 30 - Daisen kofun. Possible position of the two burial chambers.*

## **Ancestors**

In Live Science, Harry Baker is reporting about the people buried during the kofun period, in an article entitled “Ancient bones reveal previously unknown Japanese ancestors”, September 20, 2021. DNA analyses “confirm a long-standing theory about the genetic origins of modern-day Japanese populations”. The researchers have found a third, “and previously unknown, group of ancestors that migrated to Japan around 2,000 years ago, of modern-day Japanese populations”.

Ancient Japan can be divided into three periods: the Jomon period (13,000 B.C. to 300 B.C.), with a small population of hunter-gatherers, the overlapping Yayoi period (900 B.C. to A.D. 300), during which farmers migrated to Japan from Asia and agriculture developed, “and the Kofun period (A.D. 300 to 700), when modern-day Japan began to take shape” (Baker, H., 2012).

In (Baker, H., 2012), it is told that previous research suggested two main genetic origins of today Japanese populations in the hunter-gatherers of Jomon period and in the farmers of Yayoi period. “Now, an analysis of the DNA found in ancient bones has revealed a third genetic origin during the Kofun period, when a group of previously unknown ancestors migrated to Japan, researchers reported in a new study”. “At the start of the Yayoi period, there was an influx of people from China or Korea with experience in agriculture. ... The Yayoi period transitioned into the Kofun period”. During this period, the first political leaders emerged. “However, until now, it was unclear if the Kofun transition was the result of a third mass migration or just a natural continuation of the Yayoi period.”. (Baker, H., 2012) tells that previous research had suggested a third genetic input from immigrants at the time.



In a new study, Shigeki Nakagome, School of Medicine at Trinity College Dublin in Ireland, and his team have analyzed the genomes of 12 individuals. “Nine dated to the Jomon period, and three were from the Kofun period, making it “the first study that generated whole-genome sequence data from Kofun individuals,” Nakagome said” (Baker, H., 2012).

“The results revealed that, as predicted by others, a third genetically distinct group of Japanese ancestors migrated to the country during the Kofun period. These ancestors came from East Asia and were most likely Han people from ancient China, Nakagome said” (Baker, H., 2012). In (Baker, H., 2012), , it is told that the new findings “are not unsurprising to other historians who had suspected that this third group of Japanese ancestors existed” (Baker, H., 2012).

Let us note that “The Kofun individuals sequenced were not buried in keyhole-shaped mounds [reserved for high-ranking individuals], which implies that they were lower-ranking people,” Nakagome said. “To see if this East Asian ancestry played a key role in the transition [the transition from farming to an imperial state during the Kofun period], we need to sequence people with a higher rank.” (Baker, H., 2012).

The study is given in (Niall, P. et al. 2012). Abstract tells that “Prehistoric Japan underwent rapid transformations in the past 3000 years, first from foraging to wet rice farming and then to state formation. A long-standing hypothesis posits that mainland Japanese populations derive dual ancestry from indigenous Jomon hunter-gatherer-fishers and succeeding Yayoi farmers. However, the genomic impact of agricultural migration and subsequent sociocultural changes remains unclear”. The study reports about 12 ancient Japanese genomes from pre- and post-farming periods. “Unexpectedly, - researchers tell - we identify a later influx of East Asian ancestry during the imperial Kofun period. These three ancestral components continue to characterize present-day populations, supporting a tripartite model of Japanese genomic origins”.

### A cluster

[en.wikipedia.org/Saitobaru\\_Kofun\\_Cluster](https://en.wikipedia.org/Saitobaru_Kofun_Cluster) , <https://miyazaki-kofun.jp/en/about/>



Fig. 31

### **Archaeology in Japan (M. Hudson, in Italian)**

Un articolo di Mark Hudson del 2002, intitolato “L'archeologia dell'Estremo Oriente: Giappone”, in “Il Mondo dell'Archeologia”, ci spiega come essa si sia sviluppata ed evoluta nel paese del Sol Levante.

“Nel XVIII e XIX secolo si assiste in Giappone ad un forte impulso per l'antiquariato e per il collezionismo di oggetti antichi, ma l'inizio delle ricerche archeologiche condotte in maniera scientifica si fa coincidere con gli scavi intrapresi nel 1877 dallo zoologo americano E.S. Morse (1838-1925)”. Dai ritrovamenti nel deposito di Omori a Tokyo, Morse definì la ceramica ivi trovata come "decorata a corda". Il termine Jomon è la traduzione giapponese di questa definizione. Il termine entrò gradualmente in uso per indicare il periodo Neolitico nell'arcipelago, oggi datato dal 10.000 a.C. circa al 300 a.C. Oltre a Morse, altri archeologi occidentali furono H. von Siebold (1852-1908) e N.G. Munro (1863-1942). Inizialmente, gli studiosi giapponesi ed occidentali concentrarono le loro indagini sui popoli citati nei testi tradizionali. Testi di questo tipo sono il Kojiki (Memorie degli antichi eventi) del 712 d.C. e il Nihon shoki (Cronache o Annali del Giappone) del 720 d.C. [35]. Si cercò quindi di ritrovare i popoli menzionati nei testi antichi nei reperti archeologici.

Gli studi iniziali sul periodo Jomon furono fortemente condizionati “dall'ideologia imperiale del periodo Meiji (1868-1911) che riteneva come veritieri i miti sull'origine” degli Yamato, cioè i giapponesi, miti contenuti nel Kojiki e nel Nihon shoki (Hudson, M. 2002). Nel mito, Jimmu, il primo imperatore della storia e che era discendente dalla dea del sole Amaterasu, aveva conquistato l'arcipelago giapponese sottomettendo i suoi originari abitanti (Hudson, M. 2002). I reperti Jomon venivano quindi interpretati come le vestigia dell'antico popolo pregiapponese, e legati a popolazioni quali gli Ainu “o i loro mitologici antenati” (Hudson, M. 2002). “In questa prospettiva fu interdetto lo scavo dei grandi tumuli sepolcrali (kofun), che si riteneva contenessero le spoglie degli antichi sovrani e con i quali si faceva iniziare il periodo imperiale detto Yamato o Kofun, corrispondente all'età del Ferro giapponese”. Negli anni Trenta, finito il periodo Meiji, si ebbe l'allentamento delle posizioni ideologiche ed in Giappone penetrarono schemi di pensiero positivisti e marxisti. Inoltre, “il prosieguo degli scavi archeologici portò all'identificazione della cultura Yayoi (300 a.C. - 300 d.C. ca.), dal nome di un quartiere di Tokyo dove ceramica di quel tipo fu rinvenuta nel 1884 da un allievo giapponese di Morse” (Hudson, M. 2002).

Venne così scoperta e riconosciuta la cultura Yayoi, che si basava sulla coltivazione del riso e dall'uso di strumenti in bronzo e in ferro. Si arrivò così allo schema cronologico Jomon-Yayoi-Kofun (300 ca. - 645 d.C.), che è quello ancora oggi adottato.

Segue in (Hudson, M. 2002) una dettagliata spiegazione di cosa ha comportato l'ideologia “sempre più marcatamente nazionalistica adottata dallo stato giapponese negli anni Trenta e Quaranta” sugli studi ed i rapporti tra l'archeologia e l'antropologia. Con la sconfitta del Giappone nella seconda guerra mondiale, si ebbe gli archeologi “una maggiore libertà dalle costrizioni ideologiche e la possibilità di studiare in modo

scientifico il passato del Paese attraverso ricerche archeologiche che ripresero con intensità subito dopo la fine del conflitto” (Hudson, M. 2002).

(Hudson, M. 2002) riporta svariati esempi del nuovo corso degli studi.

“Nel 1952 e 1954 la legislazione relativa alla protezione dei beni culturali fu ampliata ad includere anche i reperti archeologici: secondo la legge giapponese, tutti gli oggetti sepolti nel terreno appartengono ai loro originari proprietari, anche se vissuti secoli addietro e qualora non sia possibile rintracciare i loro discendenti, i reperti vengono presi in custodia dalle organizzazioni statali” (Hudson, M. 2002). Allo stesso tempo, lo studio basato sulle mitologie imperiali venne sostituito da un metodo didattico basato prevalentemente su indagini archeologiche. Si ebbe anche uno scavo con “una valenza simbolica” nel 1953, “quando molte persone provenienti da classi sociali diverse presero parte agli scavi del tumulo funerario di Tsukinowa [un kofun], nella prefettura di Okayama, diretti da Y. Kondo, professore di Archeologia all'Università di Okayama” (Hudson, M. 2002). Segue in (Hudson, M. 2002) la discussione della vertiginosa crescita del numero di indagini archeologiche, che accompagnò la ricostruzione nel Giappone postbellico. “Attualmente l'interesse del pubblico per l'archeologia alimenta un'industria turistica con milioni di persone che visitano siti famosi, come Yoshinogari a Saga”.

L'articolo si conclude nel modo seguente, dicendo che “l'archeologia giapponese fondamentalmente si basa ancora su una concezione storico-culturale sviluppatasi negli anni Trenta; questo peculiare orientamento, *unito alle difficoltà linguistiche*, fa sì che il Giappone rimanga poco noto agli archeologi occidentali, sebbene possieda una delle scuole archeologiche più antiche e attive di tutta l'Asia”.

### **Land of Rising Sun**

Edwina Palmer, “Land of the Rising Sun. The Predominant East-West Axis Among the Early Japanese”, 1991, tells at page 75. “One explanation for the lack of axial alignment discernible among Japanese burial mounds of the Tumulus Period may be that at that stage (third-fifth centuries) the Japanese had not internalized the continental concept of cardinal orientation. Senda interprets the Japanese creation myth of Nihon Shoki in which “Kyushu and Shikoku were expresses as having one body and four faces” as “a reflection of the quadrivial viewpoint of the ancient people”. But this could easily be an embellishment to the original myth by the eight-century compilers of Nihon Shoki, who had most certainly been influenced by the Chinese world-view and who were also no doubt anxious to show out their acquisition of continental refinements.”

“In Kojiki there is only one other indication of a quadrivial world-view, and this is when Emperor Nintoku climbs a mountain to view “the land of the four quarters”. Philippi notes that this probably refers to “the ancient custom of land-viewing (kuni-mi), a ritual ceremony in which the emperor climbed a hill or mountain and surveyed the state of the land”. The expression describing the practice in this passage is clearly Chinese-influenced”.

Let us remember that Emperor Nintoku (仁徳天皇, Nintoku-tennō) was the 16th Emperor of Japan, according to the traditional order of succession. “He is conventionally considered to have reigned from 313 to 399, although this date is doubted by scholars” [https://en.wikipedia.org/wiki/Emperor\\_Nintoku](https://en.wikipedia.org/wiki/Emperor_Nintoku)

From page 80 of (Palmer, E., 1991): “For the ancient Japanese, the directions of sunrise and sunset were east and west, with the solstices indicating the extreme points, and the changes on these days formed the norm for orientation”. We used previously the image.

### Mirrors in Kurozuka Kofun

The Kurozuka Kofun (Japanese 黒塚古墳) is a keyhole-shaped burial mound. The kofun belongs to the Yanagimoto Kofun group. The Kurozuka kofun has a total length of 132 m and a height of 11 m. It is located in Yanagimoto-chō in Tenri City (Nara Prefecture) near Yanagimoto Station. The Japanese name roughly means "Black Hill Kofun". The Kurozuka Kofun is believed to have been built in the second half of the 3rd century. During excavations in 1997/1998, many bronze mirrors depictions of gods and animal deities (sankakubuchi shinjūkyō) were found in the Kurozuka Kofun. Due to the large number, it is one of the most important mirror finds in Japan.



Fig. 32 - Kurozuka Kofun



Fig. 33 - Sujinryō Kofun

In (Edwards, W., 1999), we find detailed information.

Kurozuka is part of a cluster of six large keyhole mounds, all from the Early Kofun period, centering on Sujinryō. The easternmost of this group, Kushiyaama 櫛山 kofun (150 m), presents an unusual shape in which rectangular platforms jut out from opposite sides of a central round portion. Excavated early in the postwar period, it is judged to be the newest in this group, dating perhaps to the late fourth century.<sup>18</sup> Sujinryō, which remains unexcavated owing to its designation as an imperial tomb,<sup>19</sup> is regarded as dating from the first part of the fourth century, based on its shape and pottery recovered from the surface of the mound. Andoyama アンド山 kofun (120 m) and Minami Andoyama 南アンド山 kofun (66 m), lying northwest and west of Sujinryō, are designated as *baizuka* 陪塚, or subsidiary tombs, of the latter. They accordingly are under the jurisdiction of the Imperial Household Agency and remain unexcavated.

Tenjinyama 天神山 kofun (113 m), located just west and slightly south of Sujinryō, was excavated in 1960 when part of the mound was destroyed during construction of a roadway, exposing a stone chamber in the round portion of the keyhole. Investigators discovered the remains of a rectangular wooden box, approximately 1.4 m long, containing 41 kg of cinnabar. Twenty bronze mirrors lay neatly arranged around the perimeter of the box, and three more were placed just outside this group. No evidence was found of a human burial associated with these objects, raising the possibility that the stone chamber, and perhaps the mound itself, had been built to house a cache of precious goods. Examples are

known elsewhere of subsidiary mounds that served as repositories for grave goods only. For this reason Tenjinyama was regarded by its excavators as a *baizuka* of Sujinryō that, unlike Andoyama and Minami Andoyama, had escaped designation as such.<sup>20</sup>

Some mirrors are of the “TLV” kind.



*Fig. 34 – Detail of a TLV mirror. A TLV mirror is a type of bronze mirror, popular during the Han Dynasty in China. They are called TLV mirrors because of the presence of symbols resembling letters T, L, and V which are engraved on them. They were produced from around the 2nd century BCE until the 2nd century CE.*

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### **Nakayama Otsuka Kofun and others**

From the “Mirrors on Ancient Yamato: The Kurozuka Kofun Discovery and the Question of Yamatai”, by Walter Edwards, 1999.

“Lying less than a kilometer to the northeast of Kurozuka, Nakayama Otsuka, believed to be one of the oldest tombs in the Oyamato group, was selected as the first to be investigated”.

“It was with high hopes that work began in July 1993 on the round portion of the keyhole, where excavators soon uncovered a vertical stone chamber ... The lowermost tiers of the chamber rose vertically for about 50 cm, and were then corbeled sharply inward, leaving a narrow opening at the top to be covered with ceiling stones ... Although the wooden coffin had totally disintegrated, judging from traces left on the clay floor it was large in size, and clearly must have been put in place early in the construction process, most likely when the vertical sections of the wall were finished; the upper portion of the chamber had then been built over it.” ...

“After two seasons of work at Nakayama Otsuka, the Kashihara Institute moved on in 1995 to its next project, the 120 m Shimo Ikeyama kofun located 300 m to the north and west. Here, too, a vertical chamber was found, 6.8 m long by 1.3 m at the northern end and 0.9 m at the southern, with walls first rising vertically, then corbeled inward ...”

The most remarkable aspect of the tomb came to light only after work on the burial chamber was completed. In February 1996, a subsidiary chamber was uncovered just to the northwest of the main chamber. It measured but 50 cm square and contained a single bronze mirror of the *naikō kamon* style (figure 6). Still clinging to its surface were the remnants of the cloth in which it had been wrapped. Woven from fur and floss silk, and bearing a striped pattern, the cloth is thought to be an indigenous product, perhaps the same kind of item mentioned in *Wei zhi* as presented by Himiko's envoys to the Wei court. The mirror and its cover had been placed in a box made with the *kyōcho* 夾紵 technique, in which cloth layers are glued with lacquer one atop another over a wooden core. The top layer was a piece of *ra* 羅, a fine silk gauze, over which the final coat of lacquer had been applied. Both the gauze and the box represent imported Chinese technology, and at the time of discovery were the oldest examples of their kind known in Japan.<sup>45</sup>

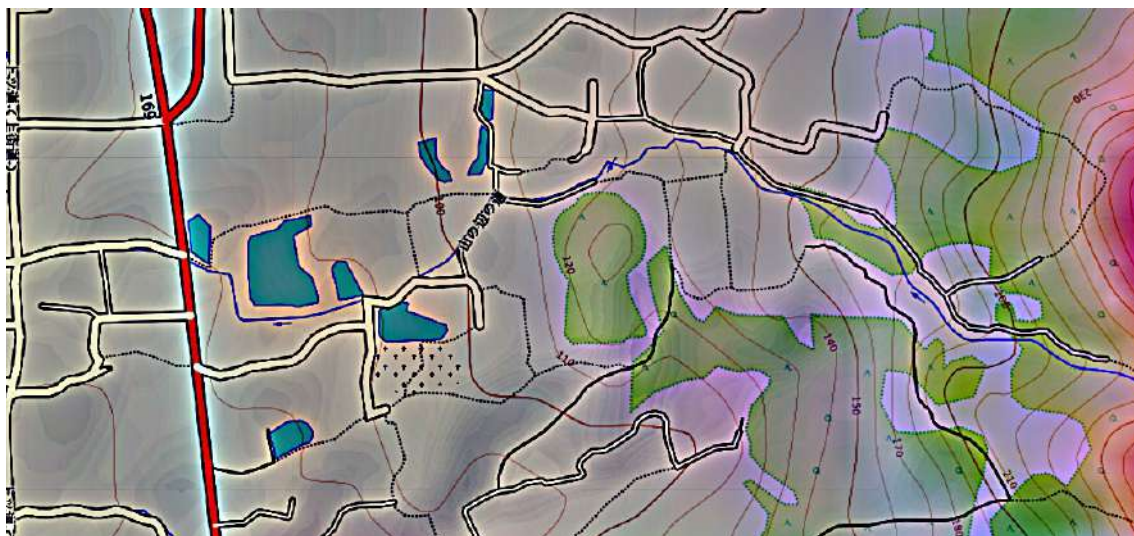


Fig. 35 - Nakayama Otsuka (southern position) and the Nishitonozuka Kofun (34° 34' 07.74" N, 135° 51' 04.18" E) in map provided by the web site <https://it-ch.topographic-map.com>.



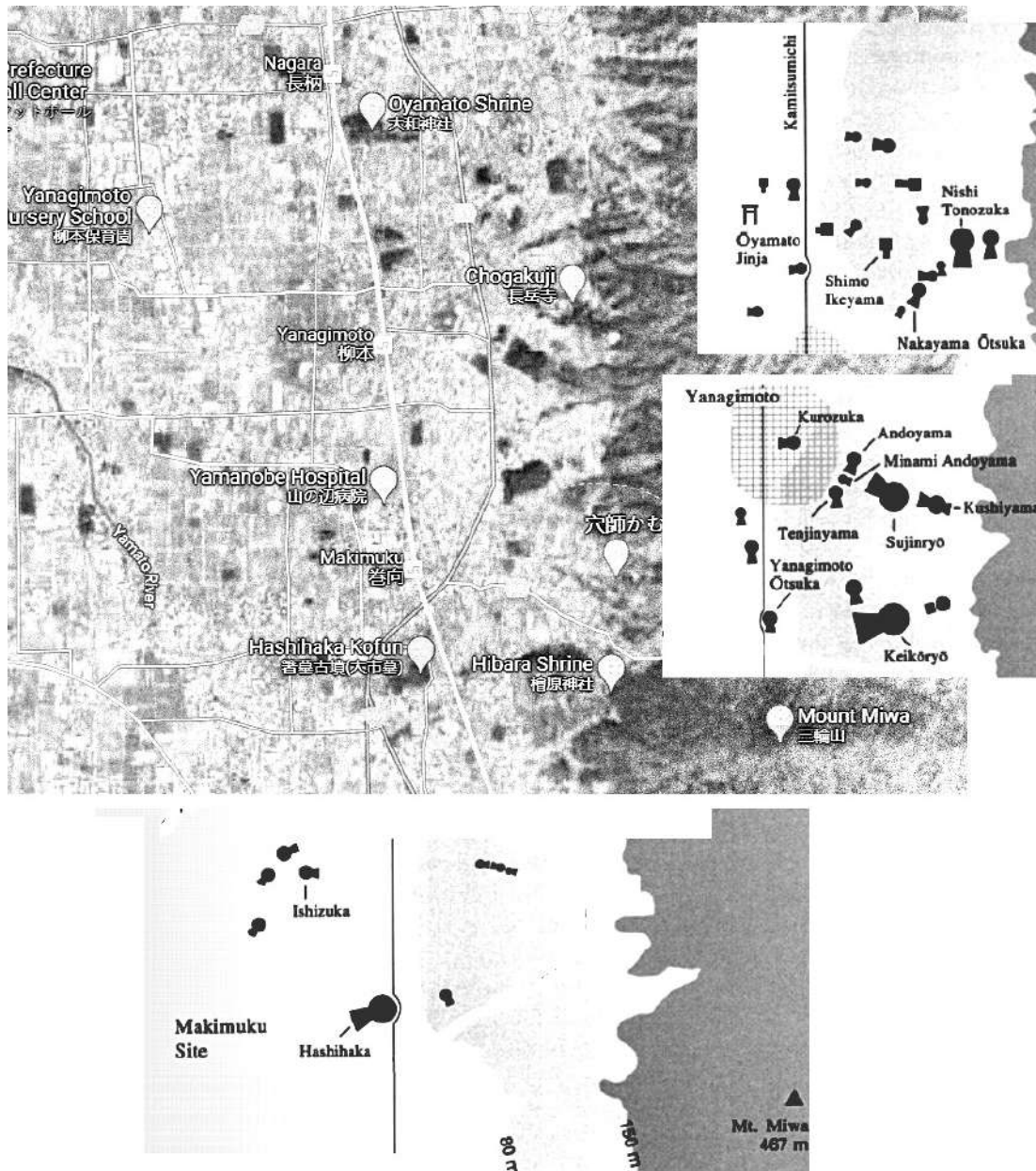
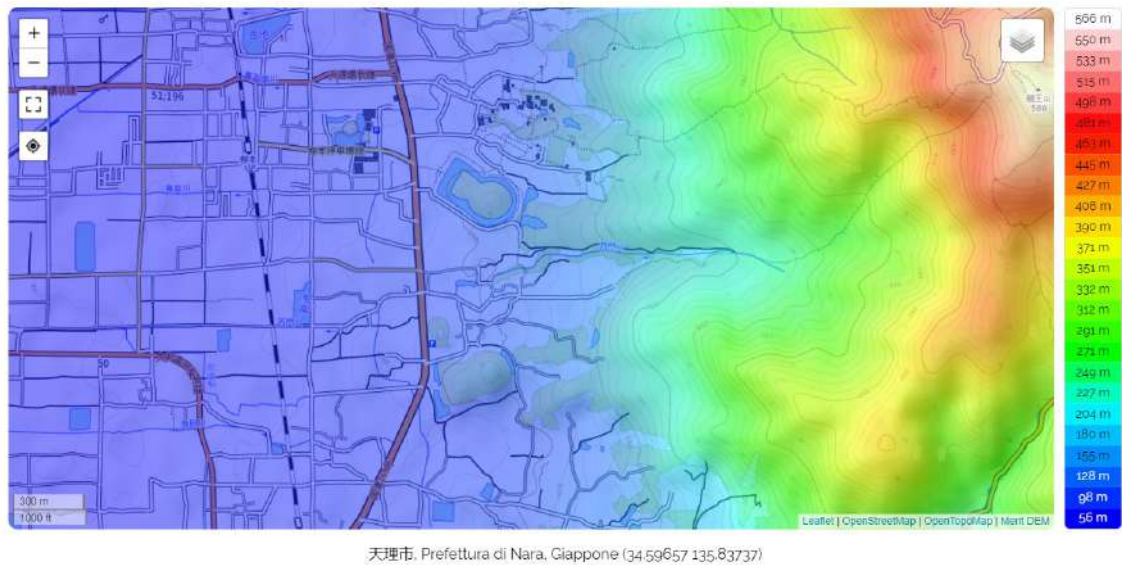


Fig. 36 - The kofun in the Nara basin, in an image from Google Maps after its enhancement, and the cluster as we can find in (Edwards, W., 1999).



*Fig. 37 – Kofun of the Nara basin in a map provided by the web site <https://it-ch.topographic-map.com>.*

### **The Ancient Burial Mounds**

In the book entitled “The Ancient Burial Mounds of Japan”, 1893, we can find the description of surveys made by Romyn Hitchcock, who accompanied Gowland, of the ancient tombs in Japan. We can find that the keyhole tombs are defined as “double mounds”. Here some passages from the book.

**Several distinct methods of burial have prevailed in Japan at different periods. These may be distinguished as follows:**

- (1) Burial in artificial caves.**
- (2) Burial in simple mounds of earth.**
- (3) Burial in mounds with rock chambers or dolmens.**
- (4) Burial in double mounds or imperial tumuli.**

In the book we can find photographic plates of caves, dolmens and double mounds tumuli.

The first fifteen Mikados were nearly all buried in the Province Yamato. The first Mikado, Jimmu Tennō, who is reputed to have lived in the seventh century B. C., and died at the good old age of 127 years, is said to be buried at a famous hill in Yamato, known as Unebi Yama. This small hill rises from the broad Yamato plain, a conspicuous object for miles around. The spot of burial is in the plain near the base of the hill, and is now surrounded by a fine stone fence. The photograph (Pl. xxxvi) was taken from the hillside. The large inclosure is entered through a broad gateway opposite the cluster of houses seen on the right. A fine, graveled walk surrounds the inner inclosure, and on certain days only the people are permitted to enter and make their devotions in front of the *torii* or temple gateway, which is to be seen at the middle of the inner wall, facing south. Every year the Mikado sends an officer to this place to make offerings to his departed ancestor. This ceremony takes place in the presence of officials and a company of soldiers on the 3d of April.

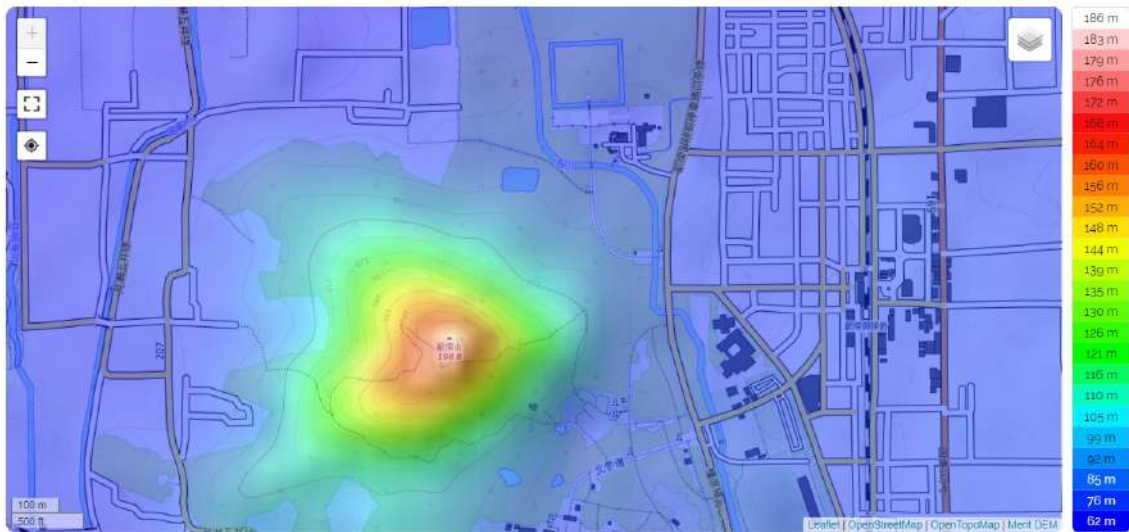
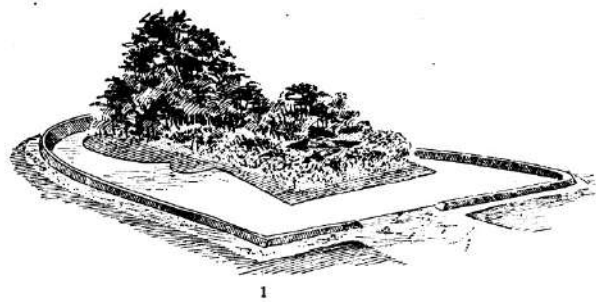


Fig. 38 – Unebi Yama in a map provided by the web site <https://it-ch.topographic-map.com>.

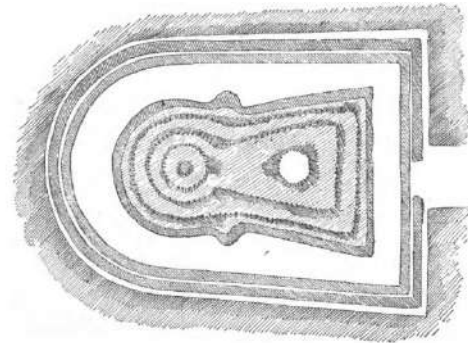
“The imperial tombs are known as Misasagi. To the right, and a little beyond the enclosure of the first emperor, there is a conspicuous white wall surrounding a mound. This is the Misasagi of the second emperor. This mound and other imperial tombs of the same era belong to a type which I believe is peculiar to Japan. They will be designated double mounds because the two ends are elevated with a depression between them. The

mounds are entirely surrounded by deep moats filled with water”.

Then, the author complains that the original form of the mounds has been altered by Japanese Government, in order to embellish the tumuli.



1. A DOUBLE MOUND. (From a Japanese sketch.)  
2. GROUND PLAN OF A DOUBLE MOUND. (From a Japanese sketch.)



Pl. xxxvii is copied from Japanese drawings. For these, and for others of the same character, I am indebted to the courtesy of Mr. K. Yamanouchi, secretary of the imperial household department. The first drawing on the left purports to represent the earliest form of double mound. Here we see the wide moat and two distinct elevations with a depression between them. The deep depression is the result of weathering and was not a part of the original design. The south end is straight, the north end rounded. The interment was at the top of the northern elevation.

The ground plan is more clearly shown in the lower drawing. The sides are constricted to correspond with the depression at the top. The two lateral projections are not often seen. The sides of the mound are terraced as represented. This terraced structure will soon receive closer attention. The interment was in the center of the smallest circle, at the top of the rounded end. This form of mound is ascribed by the Japanese to the period from Jimmu Tennō to 640 A. D. As this period embraced about twelve centuries it may be accepted as probably correct.

Then, the author tells about Nintoku Tenno burial mound, Keitai Tenno burial large

mound, and of the two mounds near Nara known as Onabe and Konabe. Then he describes the mound of Ojin Tenno in Kawachi. After, Hitchcock mentions two mounds in Kodzuke. And here we find a chamber with an entrance at the side. The author stresses that "in this respect it differs from all the mounds I have seen".

Mr. E. Satow has described two mounds in Kodzuke, one of which is shown in Pl. XLII as represented in his drawing. In shape it is a double mound, but it has a chamber with an entrance at the side and in this respect it differs from all the mounds I have seen. This mound is 36 feet in height, 372 feet long, and 284 wide. The chamber is entered through a passage 33 feet in length. There are two chambers, separated by a low sill of stone, the outer 24 feet in length, the inner 6 feet, the height being about 6 feet. Mr. Satow concludes that these mounds date from about 50 B. C., but this is very uncertain.

...

Reference has been made to the terraced character of these mounds. This structure is shown in a Japanese drawing of a mound of a later date than that ascribed to the double mounds, reproduced in the upper right-hand figure of Pl. XXXVII. This form of mound is said to date from about the seventh century. It is a single mound.

This terraced structure is exceedingly interesting because of the remarkable method adopted to protect the terraces from being washed away by the heavy rains of spring and early summer. Along the borders of the moat and around the edge of each terrace, also planted in circles at the top of the mound, around the place of interment, there have been discovered rows of closely placed cylinders of clay of peculiar form. These are hollow cylinders, very roughly made, with one or more lateral apertures.

One of these cylinders is well represented in Pl. XXXVII, copied from a Japanese drawing. This one measured: Height, 16 inches; greatest circumference, 22 inches. The top is constricted, and this feature will be referred to further on. Another one measured as follows: Height, 10 inches; circumference at base, about 30 inches; circumference at top, about 24 inches.

## **Funeral Rites**

“Japanese funeral rites”, published by the Transactions of the Asiatic Society of Japan, 1891, is an article by Arthur Hyde Lay, where the author is reporting about the Japanese funeral rites. Here we consider the part regarding the ancient tumuli. “Some Japanese archaeologists affirm that in the earliest period of Japanese history no burial system obtained, ... In proof of their assertion they adduce the fact that no graves dating from a period prior to 700 B. C. have been discovered”.

“Various ceremonies were observed on the occasion of a death. The body was deposited in a moya, or mourning-house, and left there until the preparation for permanent inhumation were completed”. The obsequies were performed for seven days and seven night or eight days and eight nights. During this period, food, fruits and drink were placed as oblations in the moya, and a fire, niwabi, was kept alight in front of the building. “Music also was played ... , and to the sound of melody the survivors trod slow measures , at the same time weeping and wailing and chanting the praises of the dead. The statements of Japanese history on this subject are to some extent corroborated by an old Chinese manuscript, entitled Kanjo, in which it is related that the Japanese observe the custom of leaving their dead in the mourning - house for fourteen days; that the surviving relatives give themselves up to sorrow, lamentation and fasting till the time appointed for permanent burial arrives; and that they pay frequent visits to the moya, where they sing songs and go through slow and rhythmical dances”.

About the moya, the article tells that the probably it was the deserted house that became the mourning house. It is also told that of the word miya signifies both “palace” and “temple”. The house “would naturally acquire a sacred character when tenanted only by the death, partly on account of the awe with which death is everywhere regarded, but more especially by reason of the deification of the Chief immediately after his decease. It was, however, customary from an early period to raise a special house to serve as a moya, for we read in Volume 1 of the Kojiki .... The edifice was built of wood. Its pillars were merely planted in the ground and had no firm foundation, and the style of architecture resembled closely that of the modern Shinto temple , which is but an adaptation of the old Japanese house”. Music was performed for sure. “According to Japanese history, however, the custom dates from the time of Amaterasu no Kami.”

“The head of the family superintended personally all the burial ceremonies of members of his household. He fixed the spot for the grave, settled the period of mourning, and conducted in person all the dances. The term jisosai was applied to such ancient burials. The feeling of bereavement on the part of the survivors found expression in funeral laudations, called shinobigoto.”

“The length of time during which the corpse was kept in the moya was gradually extended as preparations for the burial became more elaborated. ... in the case of persons of very high rank, years sometimes elapsed before all was ready”. The Nihongi tells that the body of Emperor Jimmu remained in the moya for nineteen months, Emperor Suiko for eighteen months, Emperor Anko for three years and so on. “the

body seems to have been deposited in the earth enclosed by the moya, until the time for permanent interment arrived, when the remains were removed to the appointed place. ... Laborers were in the interim employed in constructing the coffin and funeral pile. The cortège, which accompanied the remains from their provisional shelter to their last resting-place, consisted of:" and it follows the list.

We find kisarimochi (bearing food on his head), hokimochi (broom bearers), mikebito (cooks), usume (pounders of rice), nakime (hired mourners), monomasa (superintendent of the funeral), lantern bearers, watatsukuri (assistants to the ceremonies), besides of course the bereaved relatives. "The mourners carried with them to the grave tamake (bowls containing rice) and gyoku -wan (bowls holding water); and the rear - guard of the procession was formed by attendants, waving aloft flags of blue , of red , and of white colours , and by musicians playing solemn music".

"In the Goryoki a description is given of the sarcophagi of several of the former Emperors, which have recently been exhumed, They were composed of plates of hard stone, and were of considerable size. That of Chuai Tenno (AD 162-200), fashioned of large stone blocks, was nine feet and three feet five inches breadth; while that of Kenso Tenno ( AD 485-487 ) was fifteen feet long and four feet eight inches broad".

**Anciently the formation of a grave was a very simple matter. A shallow hole was dug in the earth, the remains placed inside, and a small mound of earth thrown up on the top to mark the spot. This simple grave-heap developed by degrees into the earthen tumulus, which increased in size with the dignity of the deceased. Such tumuli were finally evolved into mounds partly of earth and partly of stone. Until the reign of the Emperor Kōgen (B.C. 214-158) funeral piles were thrown up on mountain sides. The Emperor Jimmu's burial place, for instance, is to be found on the North-West side of Mount Unebi, in Yamato. The tumulus erected in his honour is fifteen feet in height and three hundred and sixty in circumference. In the case of Emperor Kaika (B.C. 157-98), the custom of selecting a commanding position for the mound was departed from, and from his time tumuli were constructed either upon level ground or on an elevation. The last named Monarch is said to have introduced certain rules to be observed in forming Imperial tumuli.**

“The practice of constructing the memorial pile partly of stone arose about the same time that that material displaced wood in the manufacture of coffins. The idea, it is believed, originated with the Emperor Sujin, who about the year 70 BC caused stone to be brought from Osakayama in order to build a fitting mausoleum for his son. During the reign of the succeeding Sovereign the art of building cairns was much studied.”

“As regards the materials used and the manner in which they were put together, we gather from the Shoryoshiki that a foundation was laid of small stones which were rendered cohesive by lime and then beaten into a compact mass and allowed to dry. Upon this basis was placed the stone receptacle, **care being taken to lay the coffin in such a position that the head of the corpse should be towards the North**; and above were laid three or four large stone slabs”.

The author is talking about kofun. “To complete the pile, gravel, sand, and earth were heaped up, until it had assumed the desired proportions, when the summit was rounded off symmetrically. The tumuli were originally built in three tiers, and in circular form. Some of them, however, were not quite round, the portion facing the North -- the quarter from which reverence was shown to the departed by friends visiting the spot -- being cut square.”

friends visiting the spot—being cut square. Round the bases of the mounds, moats, from fifteen to twenty-five feet wide, were dug, and their summits were occasionally surmounted by trees. No rule existed to determine the size of and area covered by the tumuli, and they are consequently to be found of all sizes. As regards the objects buried along with the dead, earthenware alone has been discovered in mounds of the earliest period. With the gradual elaboration of the funeral piles, however, there arose the custom of placing within the cairns articles of value, which were either put inside the sarcophagus or covered by the earth at the side of it. *Kudatama* and *magatama* (stone ornaments curved and cylindrical in shape), *kingwan* and *ginkwan* (rings of gold and silver), pottery, coins, &c. have at various times been dug out of old mounds. In the time of Emperor Yūryaku (A.D. 459-479) no expense was spared in constructing sepulchres and much poverty was the result among the people, who, imitating the example of the Court, spent their money too freely upon tombs and on articles to deposit therein. This we learn from notifications issued in later times to check lavish expenditure of that sort.



Then, we arrive to a legend, which is explaining why haniwa were used.

“The custom of immolating attendants for service in the future life was, according to Nihongi, of ancient date. The wretched victims were buried up to the neck in the earth, and formed what was called hitogaki, that is to say, a human hedge, round the mausoleum. In the year I, BC on the occasion of the interment of Prince Yamato Hiko, the number of persons sacrificed was larger than usual, and their shrieks and cries, ... reached the Emperor's ears and touched his heart. His pity for the miserable sufferers was excited to such a degree that he summoned all his high officers, ... Thereupon, a courtier, Nomi no Sukune by name advanced and humbly requested leave to propound a scheme whereby the cruel and wanton sacrifice of human life might be abolished. He proposed to substitute for living men figures of clay and to set them up at sepulchers. His Majesty, delighted with the humane idea, immediately approved his plan, and proclaimed that earthen images were in future to be used, and that on no account must human life be taken on the occasion of a funeral. Nomi no Sukune was appointed Hanishi no Muraji, Chief of the Sculptors and, during the remainder of his life time, acted as Superintendent of the skilled carvers whom he brought from his native province of Izumo. The office of Director of the Imperial funeral ceremonies was also filled by his descendants. The clay images of men, placed around graves, were styled tsuchi-ningyo. They were of all sizes . An image nine inches in height and two inches in breadth was, some time ago, discovered at Kakinuma, Hataragōri, Musashi; one dug up at Hiraisomura, Naragōri, Hitachi, was two feet long, and so on. Shortly after the introduction of Buddhism, the practice of arranging statues round a grave fell into disuse”.

The text continues with the description of the festival in honor of the dead.

“The lavish expenditure upon tumuli and valuable articles buried with the dead, which began about the end of the fourth century, has been noticed before. Mausolea were erected at the cost of much money and labour, and precious stones, swords, etc., were placed within, alongside of the dead. Into such an evil did the desire to show honour to the dead develop that, in many cases, death in a family meant the reduction of the family to poverty. This state of affairs reached a crisis about the time of the Emperor Jomei (A.D. 629-641) . His Majesty” had a funeral of extreme magnificence. Emperor Kotoku, grandson of the above mentioned Monarch, directed his energies in eradicating useless and excessive expenditures. First, he issued a notification forbidding the erection of a moya to persons other than those of Imperial rank. “He promulgated edicts, proclaiming that no man, be prince or peasant, must exceed in the matter of expensive burials”. The effect was that “although the whole system of burial by degrees became more simple, notifications had again and again in later times to be directed against excessive outlay upon funerals”.

Then, we arrive to the last period of the ancient tumuli.

The mausolea of that period were composed of large rough blocks of hard stone. In the centre a special chamber lined with lime was made for the coffin, and after the completion of the structure, the coffin was introduced through an aperture left in the side for that purpose. The hole was closed up by a large stone slab. Stone steps usually led up to this part of the pile. No rule fixing the location, shape, or size of cairns existed up till 695 A.D., in which year certain sepulchre regulations were issued. The tombs of persons of Imperial blood were alone to be fashioned of stone; while the tumuli of individuals, not of "the blood," but possessing titles not inferior to that of *Shōchi* 小智 were to be made of gravel. The common people were forbidden to construct a mausoleum of any kind. The plebeian dead were to be interred in the ground, and the earth thrown on the top of the grave was not to rise above the level of the ground. The spot was to be marked by a simple headstone (*sekihi* 石碑). It was decreed also that cemeteries (*maisōchi* 埋葬地), should be provided throughout the country, and that burial must be effected within the limits prescribed. The size of the grave and tombstone was to be regulated by the status of the deceased.

At page 518 we can find the measures of tumuli and the number of workmen employed.

"In 702 A.D. the notification, forbidding the construction of a tumulus and enjoining burial in the ground and the raising of a simple memorial stone, was extended so as to include all persons below the rank of Sammi, with a few specified exceptions. It was thus only with the beginning of the eighth century that headstones came into general use, though they had been employed some time previously in isolated cases. A gravestone had, as early as the year 460 A.D., been set up over the last resting place of one Shoshibe no Sugaru, a mighty man of valour at the Court of Emperor Yūryaku".

From the book entitled "Himiko and Japan's Elusive Chieftom of Yamatai: Archaeology, History, and Mythology", 2007, by J. Edward Kiddler, Jr.

Sacrifices, both animal and human, doubtless had a long history, but are difficult to trace archaeologically. Horse sacrifice should have come in from northern Asia along with other mortuary practices around the middle of the fifth century and would have allowed the deceased aristocrat to take his trusted mount with him to the next world. The Taika Reform was supposed to have banned it. At the time of Empress Kōgyoku just before the middle of the seventh century animals were still being sacrificed at shrines in hopes of improving weather conditions, but none is mentioned in the rituals connected with Emperor Temmu's illness forty years later. Temmu's Buddhist persuasion had led him to ban the killing of animals, and one can assume that his order was directed toward that practice, which was therefore discontinued during his reign.

“The archaeology has confirmed the existence of horse sacrifice in the Kofun period”. “The account of how the haniwa were initiated is well-known. Clay images were made to replace live burials at imperial tombs. The story of live burial has no credibility among Japanese, but the Wei zhi tells the same story on the death of Himiko. The wishful thinking that only slaves might have been conscripted was encouraged by the recent discovery of a mokkan, but the Nihon shoki suggests otherwise”. In Kiddler, 2007, the author continues with hitobashira in dams and river sacrifices.

### **Satellite and LiDAR**

As we have seen, and this is clearly told by J. Edward Kidder Jr. in his discussion and by A. Goto, referring to Y. Hojo's works and collaboration, we have a large literature in Japanese about kofun and their orientation. We have also seen that a predominant “southern aspect” of the burial places is mentioned. So, is it interesting any analysis by means of satellites? Let us stress that an inspection inside the kofun is necessary to determine the orientation of burial chamber, which is not necessarily the same as that of the mound (see Goto, 2018, Hojo and Goto, 2021). If the analysis is that we can obtain by means of the maps from Spaceborne Digital Elevation Models (DEMs), as that proposed by Yamazaki, Ikeshima, Tawatari, Yamaguchi, O'Loughlin, Neal, Sampson, Kanae and Bates, in 2017, and implemented at the web site [it-ch.topographic-map.com](http://it-ch.topographic-map.com), the answer is positive for sure. We have the possibility to evaluate the orientation of kofun in the local environment, according to its topography. By the way, an analysis by means of satellite optical imagery (Google Earth) could be useful to survey the state of preservation of kofun sites, and to check if they have been damaged by natural events of human activities.

Of course, for a more detailed topography of specific mounds, LiDAR investigations are fundamental, such as that recently proposed by Mitsumoto, J., et al. (2022), for the analysis of the Tottori-kamitakatsuka mounded tomb, and by Jun Mitsumoto for the Tsukuriyama Kofun Group.

## Discussion on orientation

First, let us stress once more that kofun have been built also using the natural topography, and therefore, as previously told, the use of Spaceborne Digital Elevation Model based on Multiple Satellite Data Sets is fundamental to investigate the specific topography and the related orientation of the structure. We have also seen, in several of the references given above, that we have to distinguish at least two periods for the building of the double mounds, today known as keyhole kofun. In the first period, we have a structure made by two mounds, with a burial pit at the center of the round rear part, and a subsidiary chamber in the front square part (an example is the Daisenryo kofun). In the second period, the pit in the round part is substituted by a chamber with a corridor (in fact, more than one chambers can be present in kofun too). In the first period, we can imagine coffins were made of wood, in the second of stone. Therefore, when we have to consider the orientation of the double mounds, we have to distinguish them at least according to these two main periods.

In the first period, the main axis of the kofun, that is the axis of symmetry has to be considered, because it is the only one existing. The front of the kofun is considered the square one. So, if the symmetry axis is due North, the kofun is oriented to face South.

In the second period, the structure remains that of a double-mound, and the main axis needs to be considered too. However, we have a corridor added inside. Is it true that the corridor is *more or less* always perpendicular to this axis? This is a question to solve. If it is perpendicular, what is its direction, to the left or to right of the symmetry axis? The answer is in the Japanese literature on Kofun for sure.

For what concerns the orientation of the burial chamber, see please Akira Goto (2018). In Goto, 2018, we find the “northern pillow” and the “southern aspect” mentioned. Let us suppose that we have the main axis of a keyhole kofun with an Eastern orientation, in the sense of the Fig.16, that is with the axis oriented in the arc of sunrise from summer solstice to winter solstice. In this case, the main front is facing West (in the arc of sunset from summer solstice to winter solstice). If a corridor is present, a “southern aspect” is requiring it oriented to the noon. This orientation is fundamental to have the natural light for the illumination of corridor and chamber. Therefore, the orientation of the second period kofun, those with corridors, can have been determined by the best use of natural light.

After the second period of double mounded kofun, we find that tumuli have a round shape and a corridor. Let us remember what we have told before. “After an entombment, the passage is blocked by Heisokuishi (piled stones) or Tobiraishi (door stone), but added burial is possible when the block is removed. This method became popular from the late Kofun period”. So, the corridor was used for the passage of several bodies, and then operations were favored by a noon orientation.

## Hopewell culture

From “Advanced Civilizations of Prehistoric America, The Lost Kingdoms of the Adena, Hopewell, Mississippians, and Anasazi”, by Frank Joseph, 2009.

Though this description might apply to a typical site of North America's ancient Hopewell culture, it just as faithfully portrays an archaeological zone in Watanuki Kannonyama Kofun, Gunma prefecture, Japan. Most experts in American prehistory are unaware that the earthworks they investigate have their overseas counterparts in the Land of the Rising Sun. Remarkably, parallels between those counterparts and earthworks here are both numerous and astonishingly close. Even in mounds that are peculiarly Japanese, points of comparison with monumental construction in pre-Columbian America are unavoidable.

An outstanding example is the massive structure at Shimane-ken, a

colossal burial mound curiously shaped to resemble a keyhole. Such unusual structures are known as *zempokoefun*, or burial tumuli with a rounded rear mound attached to a rectilinear mound at the front. At 1,458 feet long and 28 feet high, it is one of ancient Japan's grandest material achievements. Like some Hopewell sites found near Chillicothe, Ohio, or at Pinson, Tennessee, it was first laid out in courses of flagstone and gravel, then covered over with clay and capped with earth. Unlike anything similarly discovered so far in North America, however, a passageway leads from the eastern-oriented entrance to the innermost recesses of the mound.

Shimane-ken was contemporary with Late Hopewell, circa AD 300. Mound building in Japan began during the middle phases of the Jomon Period (3000 BC–1000 BC), resumed in the Early Yayoi Period (around 400 BC), and culminated during the Kofun Period (AD 250–600). Jomon means “cord mark” and refers to the impressed rope patterns featured on pottery of the period. The name Yayoi derives from the site (Yayoi-chos) near Tokyo, where that culture was first identified. Kofun is a name of the particular burial tumuli associated with the first centuries AD. The end of the Jomon Period coincides with North America's Adena period, when large-scale mound building was going on throughout the Ohio Valley.

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Fig. 3 – The region of the Mozu-Furuichi Kofun Group from a map provided by the web site <https://it-ch.topographic-map.com>. Many thanks to Yamazaki D., D. Ikeshima, R. Tawatari, T. Yamaguchi, F. O'Loughlin, J.C. Neal, C.C. Sampson, S. Kanae & P.D. Bates, 2017, for their fundamental work on digital elevation data and models, and many thanks to the excellent web site, which is fundamental for the maps. The location of the two parts of the group are marked by the red ellipses. The western part is the Mozu Group, the eastern part is the Furuichi Group.

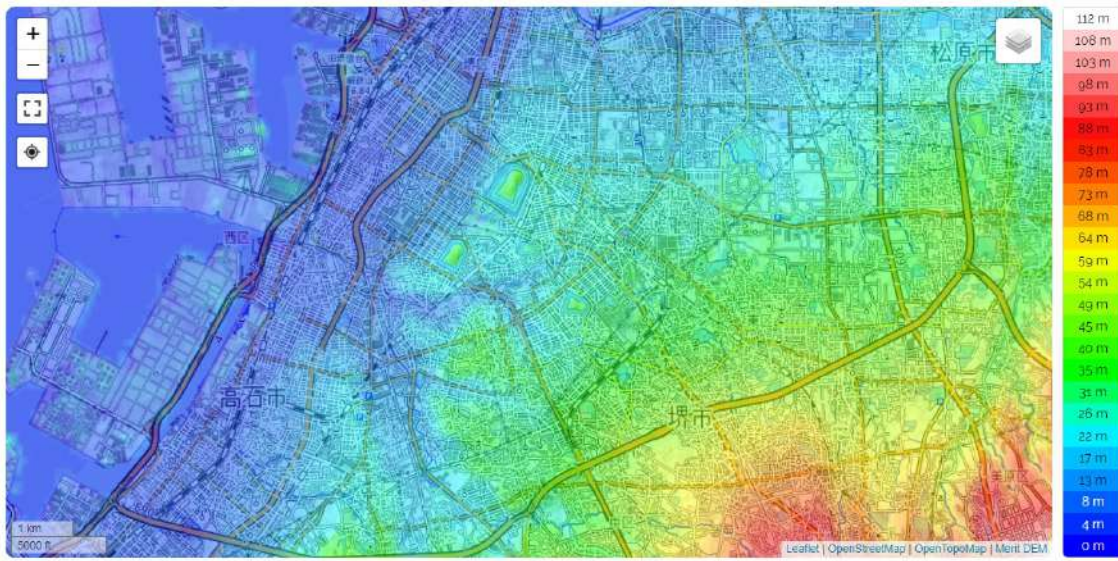


Fig. 4 – The region of the Mozu-Furuichi Kofun Group (western part) from a map provided by the web site <https://it-ch.topographic-map.com>. Many thanks to the excellent web site, which is fundamental for the maps.



Fig. 5 a – The western part of the Mozu-Furuichi Kofun Group (see “Monuments and Sites Division, Agency Cultural Affairs”). The map is provided by the web site <https://it-ch.topographic-map.com>. Many thanks to the excellent web site, which is fundamental for the maps. Note that two large kofun are clearly visible in the map. The largest one is the Daisenryo kofun. Let us note that the kofun are not in a “flat” area.

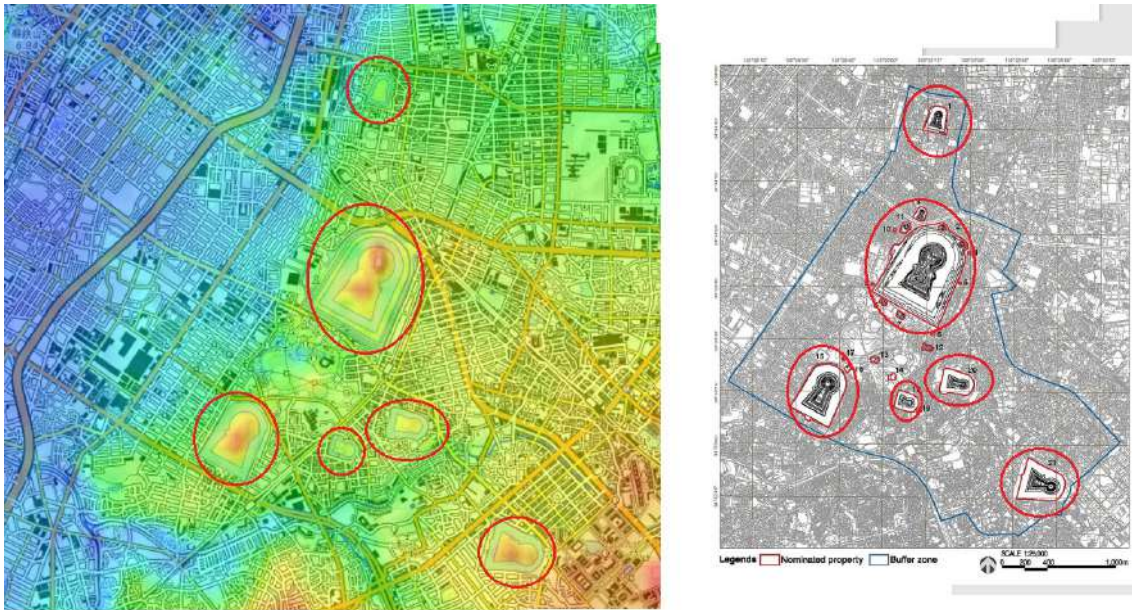


Fig. 5 b – The Mozu Group in the map provided by the web site <https://it-ch.topographic-map.com> on the left, and, on the right in a topographic map in “Monuments and Sites Division, Agency Cultural Affairs”. Many thanks to the excellent web site, [it-ch.topographic-map.com](https://it-ch.topographic-map.com), which is fundamental for the maps.

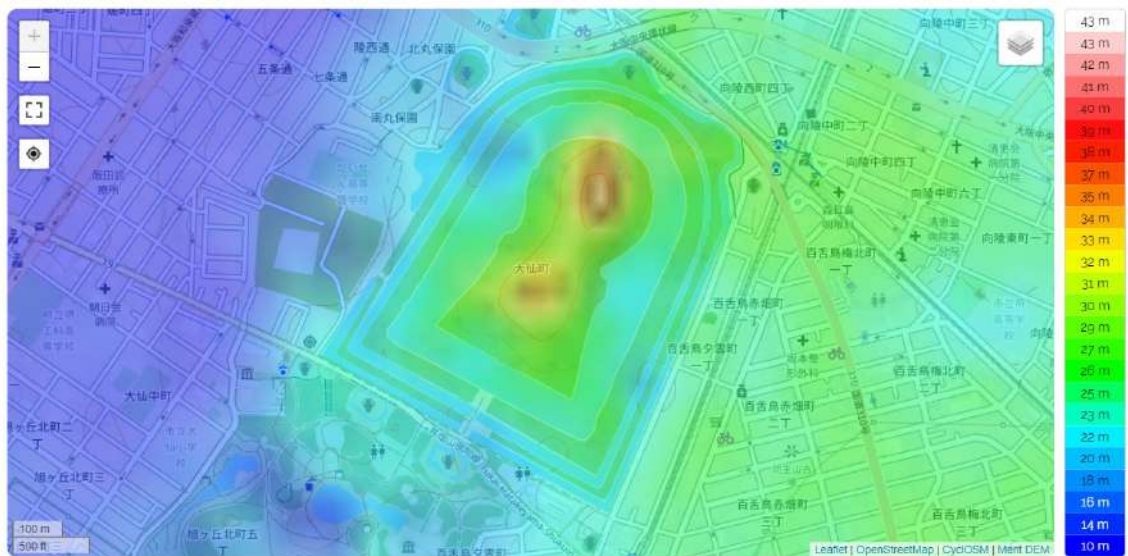
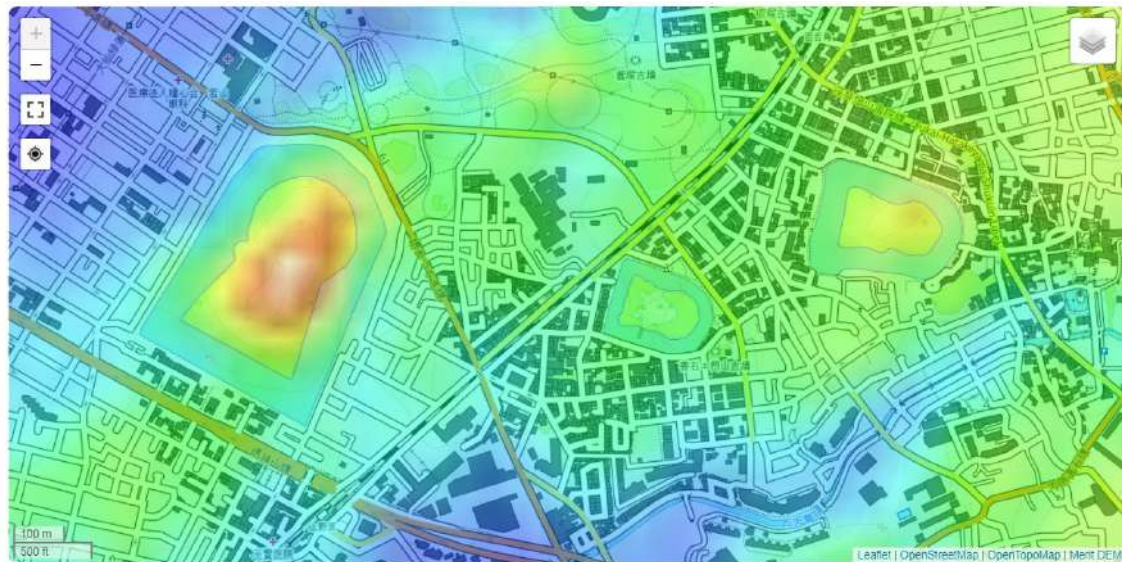


Fig. 6 – Daisen Kofun. The map is provided by the web site <https://it-ch.topographic-map.com>. Many thanks to the excellent web site.



Fig. 7 – Other kofun of west part of the Mozu-Furuichi Kofun Group (see “Monuments and Sites Division, Agency Cultural Affairs”). The map is provided by the web site <https://it-ch.topographic-map.com>. Many thanks to the excellent web site. We can see, thanks to DEM that the kofun are properly adapted to the local topography.



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Fig. 8 – Details of Kofun (see “Monuments and Sites Division, Agency Cultural Affairs”). The map is provided by the web site <https://it-ch.topographic-map.com>. Many thanks to the excellent web site.

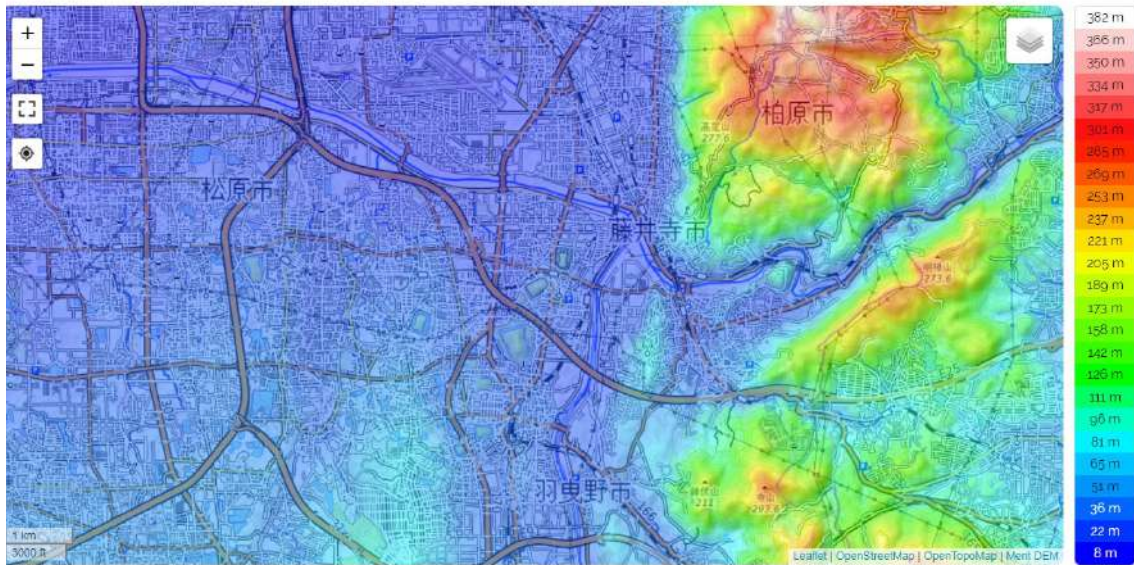


Fig. 9 – The east region of the Mozu-Furuichi Kofun Group (see “Monuments and Sites Division, Agency Cultural Affairs”) from a map provided by the web site <https://it-ch.topographic-map.com>. Many thanks again.



Fig. 10 a – Kofun in the Furuichi Group (see “Monuments and Sites Division, Agency Cultural Affairs”) from a map provided by the web site <https://it-ch.topographic-map.com>. Many thanks again.

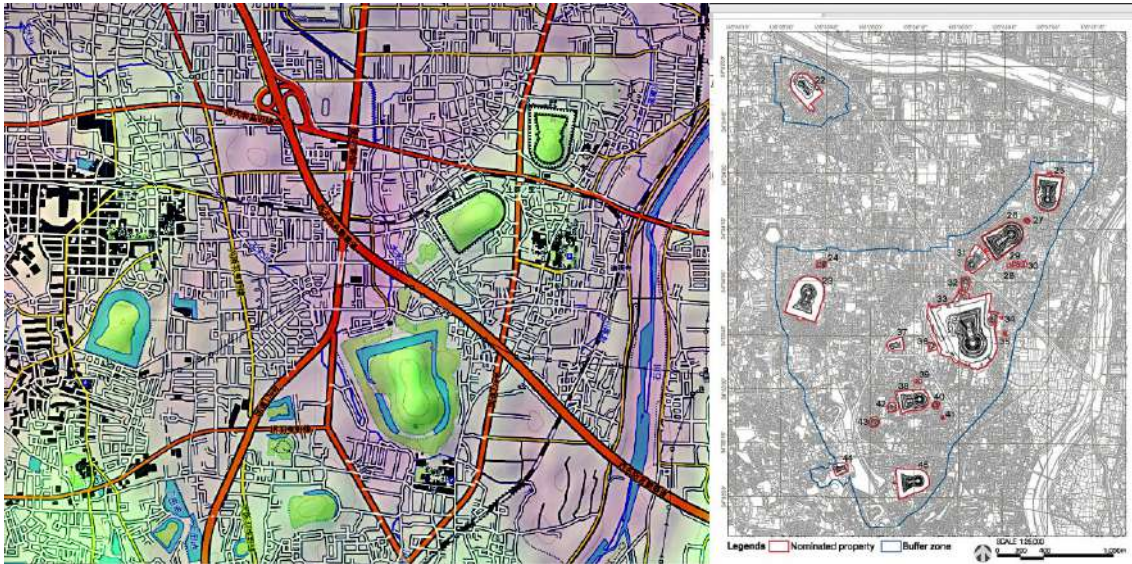


Fig. 10 b – Kofun of the Furuichi Group in a map provided by the web site <https://it-ch.topographic-map.com> (GIMP Retinex filtered) on the left; on the right, a topographic map from “Monuments and Sites Division, Agency Cultural Affairs”.



Fig. 11 – Two kofun in the Furuichi Group (see “Monuments and Sites Division, Agency Cultural Affairs”) from a map provided by the web site <https://it-ch.topographic-map.com>. Many thanks to the site. Also here, we can see that the two kofun are adapted to the local topography.

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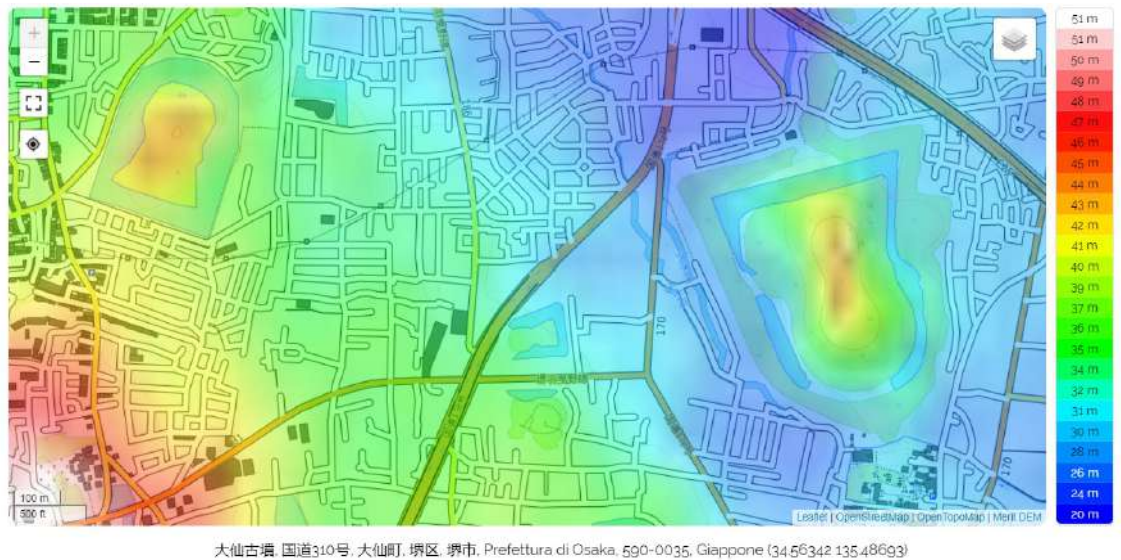


Fig. 12 – Two kofun in the Furuichi Kofun Group in a map provided by the web site <https://it-ch.topographic-map.com>. Many thanks to the site.