

**Classical Western Writings on East Asian Archaeology and Anthropology 1:****TWO ESSAYS ON JAPANESE ARCHAEOLOGY BY EDWARD S. MORSE**

Introduced and annotated by  
Michael MOOS

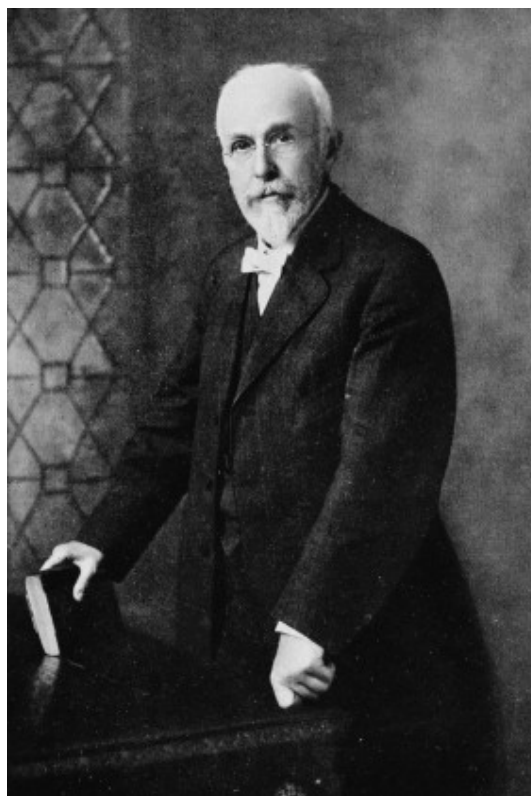
*Publ.: May 2008*

*INTRODUCTION*

Edward Sylvester MORSE<sup>1</sup> was born in Portland, Maine, on June 18, 1838. After eventful early years, MORSE enrolled at the small Bethel Academy in Maine 1856, where he pursued his interest in the study of nature. After his graduation in 1859, MORSE took up studies in marine biology with a focus on conchology (the study of mollusc shells) at Lawrence Scientific School of Harvard University. He also started to work at the Zoological Museum. In the 1860s, MORSE's studies of brachiopods along the Atlantic seashore earned him international attention. He later on became Chair of Comparative Anatomy and Zoology at Bowdoin College, Lecturer at Harvard University, Fellow of the National Academy of Science and co-editor of the *American Naturalist* magazine.

In search of new specimens for his studies MORSE prepared a journey to Japan, where he eventually arrived in June 1877 and stayed much longer than planned, almost three years. Unexpectedly he had been invited to join faculty at the Science Department of the University of Tōkyō as Professor of Zoology and Physiology. The University of Tōkyō had been established in April 1877, just a few months before MORSE arrived in Japan.

In his Japan diary MORSE describes his early encounter with the Ōmori shell mound: "*The very first time I rode to Tokyo, a few days after I landed, I noticed from the car windows in a railway cut through which*



Edward Sylvester MORSE

*we passed, a deposit of shells which I knew at once to be a true Kjoekkenmoedding. I had studied too many shell heaps on the coast of Maine not to recognize its character at once. I had waited for months for an opportunity to visit it, fearing all the time that somebody would get there before me" (MORSE 1917, I:287-289, [September 16, 1877]).<sup>2</sup>*

<sup>1</sup> Countless books and articles exist on MORSE's biography, his work, his collections and his impact on Japanese archaeology, anthropology and zoology, to name only a few: HICKMAN/FETCHKO 1977; ISONO 1990; and IMAMURA. The photographs are taken from OHYAMA 1930.

<sup>2</sup> ISONO (1990:206) gives June 19, 1877 as the date of the first visit.

At that time, MORSE did not know that the shell mounds of Ōmori were already well known in Japan, "and collections of paraphernalia from them existed in the Tokugawa era, if not earlier" (TANAKA 2004:28). These collections, however, were not gathered through scientific excavations but extracted from the mound during more or less casually done field surveys resulting from Tokugawa antiquarianism.

Regarding the chronology of western interest in the Ōmori mound, moreover, there are clear hints that Heinrich von SIEBOLD (1852-1908), son of the well-known physician and Japan expert Philipp Franz von SIEBOLD (1796-1866), carried out private excavations at the Ōmori shell mounds even before MORSE started his investigation (KREINER 1980:155seq.; SAHARA 1996). Heinrich von SIEBOLD describes these excavations in his publications on Japanese prehistory (e.g. SIEBOLD 1878; SIEBOLD 1879). Furthermore, the German geologist Edmund NAUMANN (1854-1927) is said to have been investigating at the Ōmori shell mound in late 1877 (KREINER 1980:183).

Nevertheless, MORSE was the first who excavated these mounds subsidised by a university<sup>3</sup> and accompanied by colleagues and students, and he was the first to publish an excavation report on a Japanese site. The report on the material collected at Ōmori was published both in English and Japanese. The English edition, "Shell Mounds of Ōmori", was issued in July 1879 as volume 1, part 1 of the *Memoirs of the Science Department, University of Tōkyō*. The Japanese edition, "Ōmori kaikyo kobutsuhen 大森介墟古物編" - translated by YATABE Ryōkichi 矢田部良吉 (1851-1899)<sup>4</sup>, was issued in December of the same year as volume 1 of the *Rika Kaisui 理科會粹*.

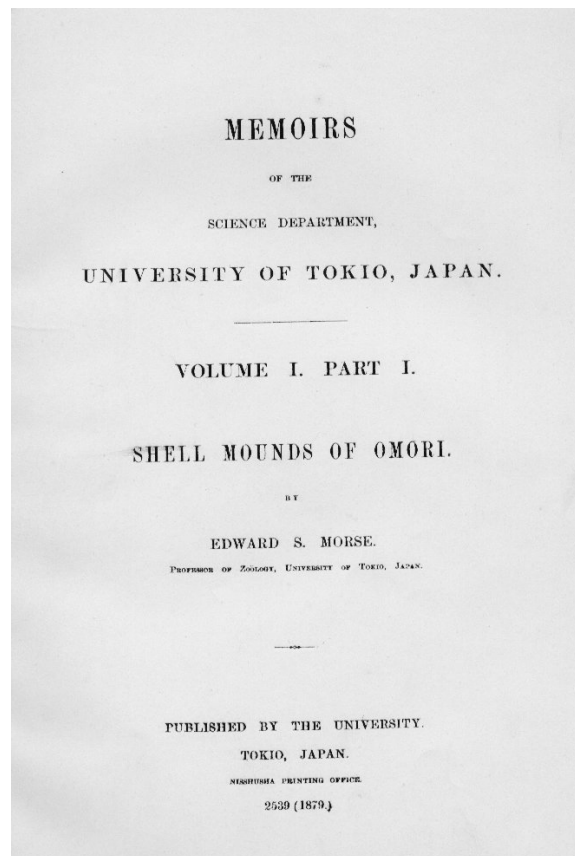
MORSE describes the first day<sup>5</sup> of his excavation at Ōmori in his Japan diaries as follows: "With Mr. Matsu-mura and two of my special students<sup>6</sup> I started early in the morning, carrying a small basket but no implements with which to dig [...]. We rode to Omori, six miles from Tokyo, and then walked up the line half a mile to the embankment. In the mean time I told my students what we should find — ancient hand-made pottery, worked bones, and possibly a few crude stone implements, and then gave a brief account of Steenstrup's discovery of shell heaps along the Baltic and also the shell heaps in New England and Florida. When we

<sup>3</sup> "Through the intelligent interest manifested by Mr. Kato and Mt. Hamao, Director and Vice-Director of the Imperial University of Tokio, every facility for a thorough investigation of these deposits will be given me." (MORSE 1877).

<sup>4</sup> See reprint below (MORSE 1879a (2008)), endnote s.

<sup>5</sup> MORSE gives the date as "September 16, 1877" (MORSE 1877), four days after he had given his first lecture at the University of Tōkyō.

<sup>6</sup> For MATSUMURA Jinzō, SASAKI Chūjirō and MATSURA Sayohiko see below MORSE (1879a (2008)), endnote v, w and x.



Title page of the "Shell Mounds of Omori"

finally reached the place we began immediately to pick up remarkable fragments of ancient pottery and the students insisted that I must have been there before. I was quite frantic with delight and the students shared in my enthusiasm. We dug with our hands and examined the detritus that had rolled down and got a large collection of unique forms of pottery, three worked bones, and a curious baked-clay tablet. As there has always been a great interest as to the character of the aborigines of the country, and as this subject has never before been studied, it is considered an important discovery. I shall prepare a general paper for the 'Popular Science Monthly' [...]" (MORSE 1917,I:288seqq.). The paper MORSE had in mind is the reprinted paper noted below, "Traces of an Early Race in Japan". MORSE, always accompanied by students, friends and colleagues, visited the Ōmori shell mounds again for several times during his Japan years and continued to collect artefacts there.

At any rate, MORSE was a genius promoter of his investigations. Dated as early as September 21, 1877 he announced his discovery to the leading scientific journal in London, *Nature*: "The discovery [...] enables me to give positive evidence regarding a prehistoric race who occupied this island."<sup>7</sup>

<sup>7</sup> The essay "Traces of Early Man in Japan" was published in

The next month, he already gave a lecture on the Ōmori pottery and the evidences of an early race in Japan at a meeting of the Asiatic Society of Japan: "On Saturday, October 13, I gave a lecture before the Asiatic Society of Japan, in Yokohama, on "Traces of Early Man in Japan." It has never been my fortune to have so mixed an audience before, mostly Englishmen, a few Americans, a few ladies, and in the rear of the hall a fringe of Japanese. Mr. Fukuyo helped me get my objects down from Tokyo, and I had some rare and delicate specimens to handle" (MORSE 1917,I:359).

And in June 1878<sup>8</sup>: "[...] I was invited to address a native archaeological club on the Omori shell mounds. The club holds its meetings at a room in the University on the first Sunday of every month. Mr. Hattori, the Vice-Director of the University, is to act as interpreter. This morning, June 2, I went to the place of the meeting. The members were sitting around a big table, each one having in front of him a small vessel of hot coals buried in ashes for warming the hands and lighting the pipe. I was introduced to them and they all bowed profoundly. I gave my talk in an adjoining room, where I had the ancient pottery spread out in trays. I gave them a general sketch of the subject: the four ages in Europe as defined by Lubbock, the paleolithic, neolithic, bronze, and iron age; then Steenstrup's work on the shell heaps of the Baltic; and finally the Omori mound. It was delightful to have such intelligent and attentive listeners. My blackboard drawings seemed to please them. Altogether I don't know when I have enjoyed giving a lecture more than I did this one." (MORSE 1917,I:385seqq.)



Memorial stone at the site of the shell mound of Ōmori, erected November 2, 1929. Inscription: "The Site of the Omori Shell Mounds, discovered by Professor Edward S. Morse."

It seems that again he was not the first who informed the Japanese experts on this topic. As early as January 31, 1878, *Nature* reports about the "archaeological society, bearing the Title of Kobutzu-Kai (Society of Old Things). Its members, numbering 200, are scattered throughout the land, but meet once a month in Yeddo. They consist chiefly of wealthy Japanese gentleman, learned men, and priests." Heinrich von SIEBOLD, a member of the society, *Nature* continuous, "has lately made a most interesting discovery of a prehistoric mound at Omuri, near Yeddo, containing over 5.000 different articles in stone, bronze, &c." (*Nature*, XVII, 1877:271seqq.).

On May 9, 1879 Edward S. MORSE left Yokohama for a research trip to the south of Japan together with his assistant, Mr. TANADA, Professor YATABE, and two servants. On their way back from Kyūshū, in July 1879, they visited Kyōto, Nara and Ōsaka. In his Japan diaries he remembers:

"While in Osaka we were told that there were certain ancient mounds in the villages of Hattorigawa, and Korigawa, about twelve miles from Osaka. Our ride carried us across a large plain under complete cultivation. As far as the eye could reach were innumerable well-sweeps after the typical New England style, which were used in bringing up water from shallow wells for irrigating purposes. The mounds were typical dolmens such as have been described in Brittany and Scandinavia: a huge mound of earth covered a long, narrow entrance-way leading to a square chamber, ten or twelve feet across. We examined them with great interest, and wondered how these people, twelve hundred years or more ago, could have raised the immense blocks of stone that form the roofs of these chambers" (MORSE 1917,II:181seqq.).

MORSE describes these dolmens in detail in the article reprinted below, entitled "Dolmens in Japan" and published in the *Popular Science Monthly*, March 1880.<sup>9</sup>

MORSE went on four trips through Japan, to Nikkō in 1877 (with Dr. MURRAY), to Hokkaidō in 1878 (with Prof. YATABE), to the Inland Sea and Kyūshū in 1879, and to Kyōto and the Inland Sea in 1882 (with W.S. BIGELOW and E. FENELLOSA). Besides collecting specimens for his zoological and anthropological research, the research in the prehistory of Japan was always one of his main concerns during these journeys.

In 1879, MORSE returned to the US where he took up the position of director of the Peabody Academy of Sciences (now the Peabody Museum of Salem) from 1880 to 1916 and Director Emeritus until his death. He

*Nature*, XVII, November 29, 1877:89.

<sup>8</sup> ISONO (1990:208) gives the date of the lecture as "June 2, 1878".

<sup>9</sup> Some early photographs of these dolmens were taken by William GOWLAND (reprinted in HARRIS/GOTŌ 2003:52seqq.).

visited Japan for the last time between June 1882 and February 1883. Edward Sylvester MORSE died in Salem on December 20, 1925 at the age of 87.

MORSE's bibliography includes 560 entries (HICKMAN/FETCHKO 1977:195), among them many essays on Japan and Japanese archaeology. The following two reprints are well-known, but not well accessible. They were published in *Popular Science Monthly* in 1879 and 1880. The first one, "Traces of an Early Race in Japan", has been partly translated into Japanese by IKEDA Jirō in the 1970s (IKEDA/ŌNO 1973:54-60).

Both essays are milestones with regard to the debate on the origins of the Japanese people, a major issue within the general discussion of Japanese prehistory among western experts in the early Meiji period (1868-1912). Especially MORSE's "*unquestionable evidences of cannibalism*" (1879a (2008)) turned out a heavily discussed topic.<sup>10</sup>

#### REFERENCES

- HARRIS, Victor and Kazuo GOTŌ (eds.) 2003, *William Gowland: The Father of Japanese Archaeology*. Tōkyō, London: Asahi Shimbun and British Museum Press.
- HICKMAN, Money and Peter FETCHKO 1977, *Japan Day by Day: An Exhibition in Honor of Edward Sylvester Morse*. Salem, MA: Peabody Museum of Salem.
- IKEDA Jirō; ŌNO Susumu (eds.) 1973, *Nihon jinshuron, gengogaku*, [=Ronshū Nihon bunka no kigen, dai go kan]. Tōkyō; Heibonsha. [池田次郎・大野晋 [編]: 『日本人種論, 言語学』 《論集日本文化の起源 第五卷》, 東京: 平凡社.
- IMAMURA Keiji, Collections of Morse from the Shell Mounds of Omori. In: Ken SAKAMURA (ed.), *Digital Museum 2000: Memory of Jōmon Period* ([http://www.um.u-tokyo.ac.jp/publish\\_db/2000dm2k/english/02/02-03.html](http://www.um.u-tokyo.ac.jp/publish_db/2000dm2k/english/02/02-03.html)).
- ISONO Naohide 1990, Contributions of Edward S. Morse to Developing Young Japan. In: Edward R. BEAUCHAMP and Akira IRIYE (eds.), *Foreign Employees in Nineteenth-Century Japan*. Boulder, San Francisco & London: Westview Press.
- KREINER, Josef 1980, Heinrich Freiherr von Siebold, Ein Beitrag zur Geschichte der japanischen Völkerkunde und Urgeschichte. In: Josef Kreiner (ed.), *Beiträge zur Japanischen Ethnogenese*. [Bonner Zeitschrift für Japanologie 2], pp. 147-203.
- MORSE, Edward S. 1877, Traces of Early Man in Japan. In: *Nature*, Vol. XVII, p. 89.
- MORSE Edward S. 1879a (2008), Traces of an early Race in Japan, In: *The Popular Science Monthly*, Vol. 14:1, pp. 257-266. (Reprinted below)
- MORSE, Edward S. 1879b, Shell Mounds of Ōmori, Volume 1, Part 1 of the *Memoirs of the Science Department, University of Tokio, Japan, Tōkyō*.
- MORSE, Edward S. 1880 (2008), Dolmens in Japan. In: *The Popular Science Monthly*, Vol. 16:5, pp. 593-601. (Reprinted below)
- MORSE, Edward S. 1917, *Japan Day by Day 1877, 1878-79, 1882-83*. Boston and New York: Houghton Mifflin Company. (Reprint: Atlanta (GA): Cherokee Publishing Company 1990).
- OHYAMA Kashiwa 1930, Denkmal beim Muschelhaufen Ohmori zum Gedächtnis an Prof. Edward S. Morse. In: *Zeitschrift für Praehistorie (Shizengaku-Zasshi)*, Vol. 2:1, pp. E3-E9.
- SAHARA Makoto, *Firippu Furansu fon Shīboruto, musuko Hainrihhi fon Shīboruto to kindai Nihon kōkugaku no hajimari* 佐原真, フィリップ フランツ フォン シーボルト、息子ハインリッヒ フォン シーボルトと近代日本考古学の始まり国立歴史民族博物館副館長 (German version: *Philipp Franz v. Siebold und sein Sohn Heinrich von Siebold und der Anfang der modernen Japanischen Archæologie*), <http://www.kclc.or.jp/humboldt/saharaj.htm>.
- SIEBOLD, Heinrich von 1878 (1980), Japanische Kjökkenmödding (dated July 29, 1878). Reprinted in: Josef Kreiner (ed.), *Beiträge zur Japanischen Ethnogenese*. [Bonner Zeitschrift für Japanologie 2], pp. 207-209.
- SIEBOLD, Heinrich von 1879, Japanische Kjökkenmöddinger. In: *Verhandlungen der Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte*, pp. 231-234.
- TANAKA, Stefan 2004, *New Times in Modern Japan*. Princeton: Princeton University Press.

<sup>10</sup> Morse read on this topic before the Biological Society of the Imperial University on January 5, 1878. The lecture is published as part of his report on the Ōmori site, pp.17-19 (MORSE 1879b).

## TRACES OF AN EARLY RACE IN JAPAN

Edward S. MORSE

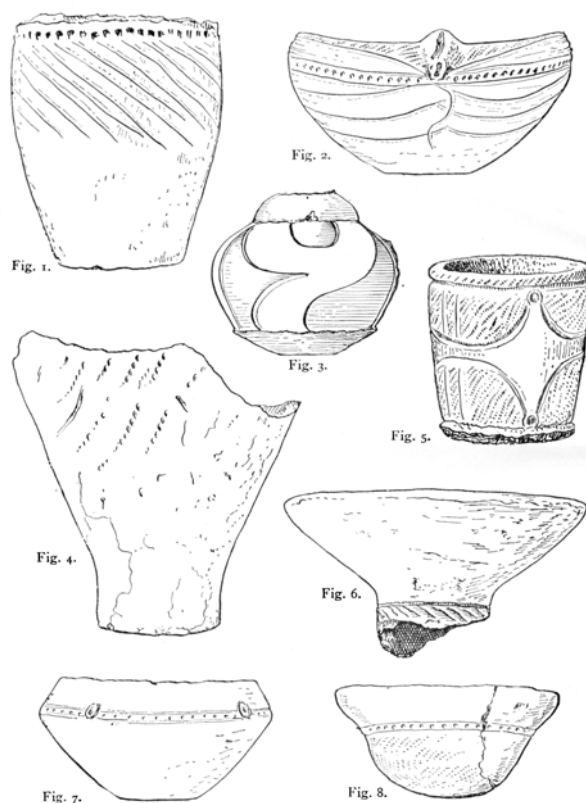
EDWARD SYLVESTER MORSE: "TRACES OF AN EARLY RACE IN JAPAN." IN: *THE POPULAR SCIENCE MONTHLY* 14 (JAN 1879): 257-266.

ALSO: REPRINTED AS SEPERATA BY D. APPLETON & CO. IN 1879

THERE is no race of people in whose origin we are more interested than in that of the Japanese. Their history going so completely back for nearly two thousand years, their civilization, which in so many respects parallels our own—the various epochs in our history being typified again and again by similar ages in Japan—all excite our deepest interest. The difficulty of tracing out ethnical affinities either through their personal peculiarities or their language presents a problem yet unsolved. That they are a composite race we cannot doubt. All their traditions point to their coming from the south, and equally sure are we that when they landed they found a hairy race of men to contest their occupation. Later history shows that a number of Chinese invasions took place, and these unwelcome visits were returned by the Japanese. Corea was invaded by the Japanese long ago. With these facts in mind, we are no longer surprised at the great variety of faces to be met with in Japan—faces purely Chinese; others with the coarser features of the northern tribes; and again the delicate and pleasant features of what is supposed to represent the typical Japanese.

The conjectures and opinions that have been advanced regarding the origin of the Japanese would form a curious and bulky collection. It is worth noting that both pagan and Christian writers have held almost equally preposterous notions regarding the origin of the Japanese. The people themselves have a tradition that they owe their origin to the sun. Kämpfer<sup>a</sup> holds the absurd idea that "they are descended from the first inhabitants of Babylon." From these vagaries we pass in turn to other ideas based on some foundation of fact. In a paper read before the Asiatic Society of Japan by Mr. Aston<sup>b</sup>, an affinity is shown to exist between certain words in the Japanese and Aryan; while Mr. Brooks<sup>c</sup>, in the proceedings of the California Academy of Sciences, takes ground for believing that the Japanese and Chinese may have been derived from the west coast of

South America. Mr. Isawa,<sup>d</sup> an intelligent Japanese student, at the last meeting of the American Association for the Advancement of Science, called attention to the similarity



Figs. 1 to 9 show some of the various forms of vessels. Fig. 1, diameter, 130 mm. Fig. 2, diameter, 280 mm. Fig. 3, diameter, 130 mm. Fig. 4, height, 330 mm. Fig. 5, diameter, 105 mm. Fig. 6, diameter, 180 mm. Fig. 7, diameter, 150 mm. Fig. 8, diameter, 150 mm.

existing between many Japanese words and Hindostanee. With these and many other conflicting views, authorities seem to agree upon one thing, and that is, that the present inhabitants of Japan are not autochthonous, neither the Japanese nor the Ainos in Yesso.

So far as the ancient records of Japan are to be relied upon (and they certainly go back before the Christian era with considerable accuracy), Jimmu Tenno in the first century of our era came from a province in Kinshin

for the conquest of Nippon or Japan. The invaders met with so courageous a resistance that they were obliged to go back to their own shores. The people who repulsed Jimmu Tenno and his followers are believed by the Japanese to have been the hairy men of Yesso, the ancestors of the present inhabitants of the northern islands.

The study of the language, traditions, and folk-lore of the Ainos, furnishes good reasons for believing that the ancestors of the Ainos came from Kamtchatka, drifting down through the Kuriles, and gradually becoming proprietors of the soil before the Japanese came from the south to displace them.

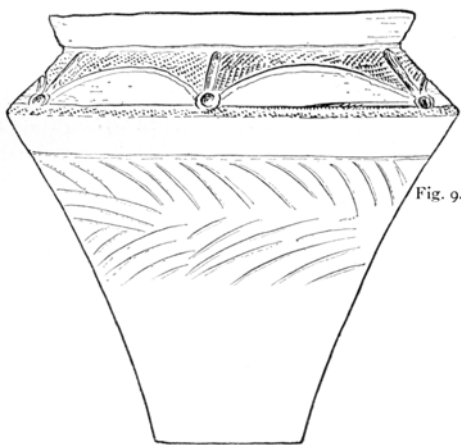


Fig. 9—the rims of this vessel are quite common in the heaps, but only one, the fragments of which could be matched, was found. Its height was about 300 mm.

With every reason for believing that the Japanese came from the south, displacing the Ainos, who came from the north, the question next arises as to the original occupants of the island. Did the northern people encounter resistance from a primitive race of savages, or were they greeted only by the chattering of relatives still more remote, whose descendants yet clamber about the forest-trees to-day? The records are silent on these points. A discovery that I made in the vicinity of Tokio last year leads me to believe that possibly the traces of a race of men previous to the Aino occupation have been found. I say possibly, because a study of the Aino people, their manners, and traces of their early remains, is necessary before a definite opinion can be formed.

On my first visit to Tokio I discovered from the car-window a genuine "Kjoekkenmoedding," or shell-heap, as we call them. The deposit is in Omori, about six miles from Tokio; and one may well wonder why it had not been recognized before. It had probably often been seen, but, like many similar deposits in Europe and America, had been looked upon as natural beds of sea-shells deposited in past times, and after their formation

elevated by upheaval. It was not until Steenstrup,<sup>c</sup> of Copenhagen, first took up the critical study of similar deposits along the shores of the Baltic, and showed that the deposits were really the work of man, and of ancient man, that attention was attracted to these beds in other parts of the world.

Thanks to several years' study of these deposits along the coast of New England, in company with Prof. Jeffries Wyman<sup>f</sup>, I was enabled to recognize the character of the Omori deposit at once. The railway passes directly through it, and most of it has been removed for ballasting the road. The bed evidently covered the field beyond the track for a considerable distance, judging from the quantity of shells and fragments of pottery which were strewn in the adjacent rice-field. The deposit varied from a few inches to two feet and a half in thickness, and the layer of earth above varied from two feet to nearly five feet in thickness. This great depth of soil above the shells might have been brought in by man, as the Japanese are famous for the manner in which they level the ground and fill in depressions. The thickness of soil above a deposit is always an untrustworthy guide in estimating the age of such a deposit: as, for example, the deposits about Salem, Massachusetts, containing precisely the same kinds of pottery and bone-implements, and presumably of the same age, will have in one place a thickness of two feet of soil above, and in the sterile pastures a thin layer of a few inches. The Omori deposit is made up of shells which still live in the bay of Yeddo, though I have not yet been able to study the living-forms sufficiently to ascertain whether any changes have taken place in the fauna since the heaps were made. A number of genera are found, representing, among others, *Eburna*, *Turbo*, *Cerithium Area*, *Pecten cardium*, two species of *Ostrea*, and, curiously enough, large valves of the common clam, *Mya arenaria*, hardly to be distinguished from the same species so common along the New England coast. The position of the Omori heap is striking. The shell-heaps of New England, Florida, and nearly all places where they have been observed, are always in immediate proximity to the shore or river. In some places, as at Goose Island, Maine, the ocean encroaches upon the deposits and is gradually removing them. Rev. James Fowler<sup>g</sup>, in commenting upon the absence of shell-heaps along the New Brunswick coast, offers this as one of the evidences that the sea is encroaching upon the land, and calls attention to the fact that buildings, which stood at some distance from the shore fifty years ago, have since been washed away.\* Along the shores of the Baltic, the shell-heaps, on the contrary, are a mile or more from the shore, and this fact, with evidences of a geological character, shows a practical encroachment of the land upon the sea by upheaval

\* "Smithsonian Annual Report" for 1870, p. 389.

since the deposits were made.

The Omori deposits, like those of the Baltic, are some distance from the sea-shore—nearly, if not quite, half a mile. And that an upheaval has taken place since the deposits were made, there can be no doubt. Geological evidences are not wanting to support this view ; these various deposits, remote from each other, such as the Denmark, New England, and Florida deposits, have each their peculiarities. In the Danish heaps there seems to be a scarcity of pottery, but an abundance of flint-chips and rude stone implements, as well as implements worked out of horn and bone. The New England shell-heaps are not rich in pottery fragments, the stone implements are rude and scarce, but the implements of horn and bone are comparatively not uncommon, those worked out of bone being more common. In the Florida deposits fragments of pottery are more abundant ; and while rude stone and bone implements are found, the larger shells seem to have furnished them with material for many of their implements. Prof. Wyman<sup>h</sup> has figured many of them in his memoir on the fresh-water shell-heaps of Florida, and Dr. Stimpson<sup>i</sup> has figured an awl in the *American Naturalist*, which was made out of the spirally grooved columella of *Fasciolaria*. While the pottery of Denmark and New England is ornamented by incised lines and "cord-marks," the Florida pottery bears the marks of stamps by which they impressed a rude ornamentation upon their vessels. The Omori shell-heap has also its peculiarities: 1. The extreme abundance of pottery, both in fragments and nearly perfect vessels. From the great quantity found there, one is led to believe that in past times it was a famous place for its manufacture. Yet in the excavations no masses or unfinished vessels were found to justify this assumption. 2. The great variety in the form of the vessels and remarkable diversity in their ornamentation. From these characters alone one might infer it to be of more recent origin. Its rudeness, however, and the absence of anything like lathe-work or glazing, show it to be ancient.<sup>†</sup> A greater portion of the pottery has the twisted cord-mark so common in most of the early pottery. Much of it has incised lines, and small fragments show a peculiar carving, made after the clay was dry, but before baking.

The ornamentation in these fragments is almost precisely similar to the Aino style of ornamenting. In other pottery also the peculiar way in which spaces between curved lines are "filled in," either by "cord-marks" or

punctures, again recalls the Aino. And had nothing else been found in the deposit, the remains might have unhesitatingly been referred to the Yessoines. Such comparisons are unsafe, as Mr. Frank H. Cushing<sup>j</sup>, of the Smithsonian Institution, finds similar pottery in Northern New York and Canada, and I may add that in New England such pottery has been found. In many cases the borders of vessels are ornamented with undulating ribs, showing the marks of "fingersqueezing." A marked peculiarity of the pottery consists in the

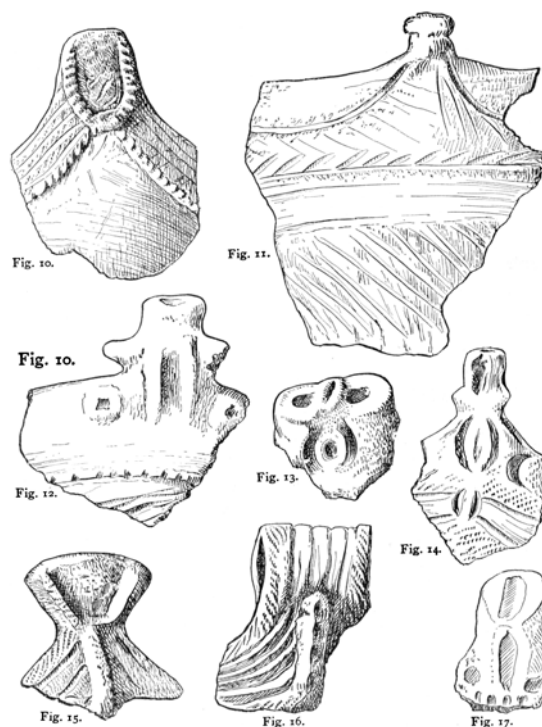


Fig. 10 to 17 show a few of the knobs or handles which are peculiar to the Omori deposit. Not a single vessel was found with legs, as with the Central American pottery, but most of the vessels have raised knobs on the margin. Fig. 16 is looped, so that a wooden handle might be adjusted. Fig. 11 is 190 mm. in its longest diameter; the size of the other knobs may be estimated from this.

elevation of the rim or border into ornamented knobs or handles, some of which are represented in Figs. 10 to 17 inclusive. Some painted pottery was also found, the coloring matter of which, on analysis by Prof. Jewett<sup>k</sup>, of the Imperial University of Tokio, proves to be cinnabar. The occurrence throughout the empire of stone celts, finished arrow-heads, and spear-points and pestles, is common. These might or might not have belonged to the Ainos, though, as similar forms occur in Yesso, the probability is that many of them at least are of early Aino manufacture. It is significant, however, to observe that the few stone implements found in the Omori beds are of the rudest manufacture ; and, furthermore, that no shell-heap that I know of has revealed a less number, the two shown in Figs. 28 and 29 being made of a soft vol-

<sup>†</sup> A writer in one of the Yokohama papers calls attention to the fact that a fragment of glazed pottery was found, when the excavations were first made, against the exposed bank of the railway. He might have added that an English button and the soldered disk of a tin preserving-can were also found! Such a one, finding a living toad in a granitic crevice, would be likely to infer, either that the toad was as old as the granite, or that the granite was as recent as the toad.



canic rock. Curiously enough, most of the other implements were made out of deer's-horns, only one being of bone (Fig. 21, evidently the end of a deer's metatarsal). An exquisitely finished arrow-point (Fig. 25) was fabricated out of a boar's tusk.

The bones of birds were not common. I searched in vain for traces of the great auk, the remains of which are so widely met with in Denmark and New England. Though ponderous shells of various species occur in the heap, no evidence was found that these were worked in any way.

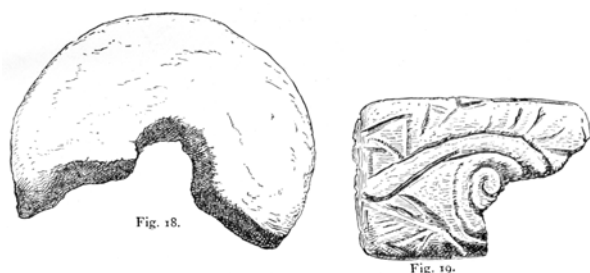


Fig. 18 is a piece of pottery that may be a spindle-whorl—diameter, 70 mm.

Fig. 19 is a small clay brick, 55 mm. in length. This is ornamented on both sides. It is difficult to conjecture its use. I have four more in the collection at the university, much larger and ornamented in a different manner. These are possibly amulets, or perhaps signs of office or authority. I think they are unique.

A fragment of a spindle-whorl is shown in Fig. 18. A peculiar tablet, or brick of clay, curiously ornamented, is shown in Fig. 19. Nothing of the kind, so far as I know, has been found in the shell-heaps of other parts of the world. It is difficult even to conjecture its use.

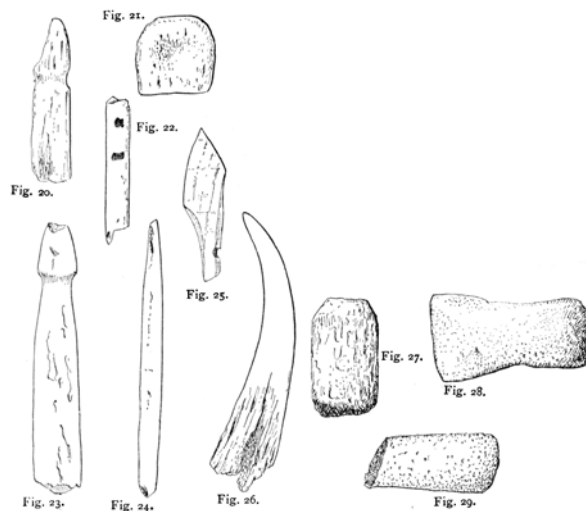
The most important discoveries connected with the Omori deposits are the unquestionable evidences of cannibalism. Large fragments of the human femur, humerus, radius, ulna, lower jaw, and parietal bone, were found widely scattered in the heap. These were broken in precisely the same manner as the deer-bones—either to get them into the cooking-vessel, or for the purpose of extracting the marrow—in all respects corresponding to the facts cited by Wyman<sup>1</sup> in proof of the evidences of cannibalism found in the Florida and New England shell-heaps.

The question as to the antiquity of the Omori deposits naturally arises, and the evidences all point to a considerable antiquity, suggested by the entire absence of worked metals, as well as of finished or polished stone implements, the few implements found being of the rudest character.

The change which has taken place in the coast-line by upheaval, since the deposits were made, has not the importance which would be ascribed to it in a more stable country.

The next question arises as to whether the deposits

are Aino or pre-Aino. The race who left these remains were pot-makers *par excellence*. It is generally admitted by ethnologists that the art of pottery once gained is never lost. It is a fact, however, that neither the



Figs. 20 to 26 represent a number of implements made out of horn, with the exception of Fig. 25, which is worked out of a boar's tusk. Figs. 23, 24, and 26, are respectively 60, 62, and 125 mm. in length. Fig. 21 is worked out of the end of a deer's metatarsal. Fig. 22 is a bird's bone, probably a humerus, with two holes worked in it. Fig. 27 is a portion of deer's antler cut at both ends and broken. Figs. 28 and 29 are two stone implements, worked out of soft lava-rock. They are respectively 50 and 70 mm. in length.

Esquimaux, Aleutians, Kamtchadales, nor the Ainos, are essentially earthen-pot makers, their vessels being usually wrought out of stone or wood, and their ancient stone vessels are often met with in various parts of Japan.

If the unquestionable resemblance between the ornamentation of some of the fragments and similar styles of ornamentation among the present Ainos be looked upon as indicating a community of origin, what shall be said of the following figures of knobs found in a shell-heap on the Upper Amazon by the lamented Prof. Hartt<sup>m</sup>? The knobs themselves are so unlike anything figured heretofore, and yet so precisely do they resemble similar knobs which are most common in the Omori deposits, that were they mixed with the collection it would be impossible to separate them by a single character!—even to the depression on top and in front, as shown in Fig. 12.

A curious stone ornament, having the general shape of a comma, with the big end perforated, is known as the *magatama*. These peculiar-shaped objects are looked upon as ornaments belonging to the primitive inhabitants of Japan. Mr. Borlase<sup>‡</sup> says the traditions about them have been handed down from mythological times.

<sup>‡</sup> "Nippon and its Antiquities."



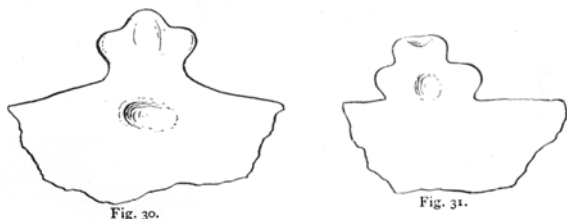
Siebold<sup>o</sup> says: "To this day they are in use among the Ainos of Yesso and in the Kuriles, as precious ornaments, under the name of *sitogi*. The inhabitants, too, of Liukiu wear a stone resembling the *magatama*; so that this little jewel helps us to a noteworthy historic fact, namely, to the connection which in remote times existed between the inhabitants of the whole chain of islands from Taiwan to Kamtschatka."

An exhaustive examination of the Omori deposits did not reveal anything like a *magatama*.

Were the Ainos cannibals?

Repeated inquiries among eminent Japanese scholars and archaeologists, like Mr. Kanda<sup>p</sup>, Mr. Ninagawa<sup>q</sup>, and others, as to this question, are always answered in the same way. Not only were they not cannibals, but they are reported as being so mild and gentle that murder was never known to have occurred. So monstrous a habit would certainly have been known and recorded, particularly in the painstaking annals of early historians.

In conclusion, then, the Omori shell-heap presents all the leading characteristics of the typical Kjoekkenmoedding. And the evidences



which Prof. Wyman<sup>r</sup> cites as evidence of cannibalism, in the shell-heaps of Florida and Massachusetts, are likewise present in the Omori deposit. The recent occupation of America by the white race renders it difficult to determine how recent the shell-heaps along the coast may be, since the savages when first encountered were living in much the same condition as their ancestors had lived, just as to-day there still exist in some parts of the world veritable Stone-age savages. In Japan, however, where historians have chronicled with remarkable fidelity the minute details of their history, we get, as it were, some standard for time in estimating the age (if the Omori deposits. It can be stated with absolute certainty that they are pre-Japanese; and there are as good reasons for believing them pre-Aino as early Aino.

I have to return my sincere thanks to the university authorities for the zeal they have displayed in assisting me in the examination of the deposits, and to the personal help afforded me in the excavations by Profs. Yatabe<sup>s</sup>, Toyama<sup>t</sup>, and Dr. David Murray<sup>u</sup>, Messrs. Matsumura<sup>v</sup>, Sasaki<sup>w</sup>, Matsura<sup>x</sup>, Fukuyo, and others. I made a special request that the deposits should be com-

pletely examined during my absence, and this examination was most faithfully done. A much larger collection was made with many new and curious forms of pots. I hope at some future time to illustrate them.

#### NOTES:

- <sup>a</sup> Engelbert KAEMPFER, *Geschichte und Beschreibung von Japan*, ed. Christian Wilhelm DOHM, Meyersche Buchhandlung, Lemgo 1777-79, Vol. 1, chapter 5: "Aus allen, was wir bisher angeführt haben, läst sich nun die sichere Folge ableiten, daß die Japaner eine selbstständige originale Nation sind. Diese müste also ohne Zweifel unmittelbar von den babylonischen Völkern nach diesen Inseln ausgezogen seyn; ob es sich gleich nicht bestimmen läst, wie lange sie auf ihrer Reise dahin mögen zugebracht haben." Engelbert KÄMPFER (1651-1716), German traveler and physician, worked as VOC-physician in Deshima, Japan, 1690-1692.
- <sup>b</sup> W. G. ASTON, Has Japanese an Affinity with Aryan Languages? In: *Transactions of The Asiatic Society of Japan*, First Series, Vol. 2, (1874), pp. 196-203. William George ASTON (1841-1911), was a British consular official in Japan and Korea.
- <sup>c</sup> Charles Wolcott BROOKS, Origin and Exclusive Development of the Chinese Race—Inquiry into the Evidences of their American Origin, suggesting the great Antiquity of the Human Race on the American Continent. In: *Proceedings of the California Academy of Sciences*, VI (1875), pp. 95-122. Two other articles of C.W. BROOKS in the same issue deal with the same topic: Early Migration—Ancient Maritime Intercourse of Western Nations before the Christian Era, Ethnologically considered and Chronologically arranged, Illustrating Facilities for Migration among early types of human race. In: *Proceedings of the California Academy of Sciences*, VI (1875), pp. 67-77; and Report of Japanese Vessels Wrecked in the North Pacific Ocean, from the Earliest Records to the Present Time. In: *Proceedings of the California Academy of Sciences*, VI (1875), pp. 50-66. Charles Wolcott BROOKS (1851-1939), was an American trader. Since 1870, he was first Honorary Consul of Japan in San Francisco, where he hosted the Iwakura embassy in 1872.
- <sup>d</sup> ISAWA Shuji 伊沢修二 (1851-1917) was student at Bridgewater School and Harvard in 1875 to 1878. After his return to Japan, he was one of the authorities in elementary education, music and physical education in Meiji Japan.
- <sup>e</sup> Johannes Japetus Smith STEENSTRUP (1813-1897) was a Danish zoologist and biologist. He was professor of zoology and director of the Zoology Museum at the University of Copenhagen.
- <sup>f</sup> Jeffries WYMAN, An Account of Some Kjoekkenmoeddings, or Shell-Heaps, in Maine and Massachusetts. In: *American Naturalist* 1 (1868), pp. 561-584. Jeffries WYMAN (1814-1874) was an American naturalist and anatomist, first curator of the Peabody Museum of Archaeology and Ethnology, and president of the American Association for the Advancement of Science. WYMAN was one of MORSE's teachers at Harvard.
- <sup>g</sup> James FOWLER (1829-1923), American Biologist.

- FOWLER, J.: On Shell Heaps in New Brunswick. In: *Annual Report of the Smithsonian Institution* 25 (1870), p. 389.
- <sup>h</sup> Jeffries WYMAN, *Fresh-water Shell-mounds of the St. John's River*; Florida, Salem, 1875, (see endnote *f*).
- <sup>i</sup> William STIMPSON (1832-1872) was an American naturalist. In 1853 he joined the United States North Pacific Exploring and Surveying Expedition, which journeyed to Madeira, South Africa, Australia, the Coral Sea, Hong Kong, Japan, and the Aleutian Islands. He collected over 5,000 specimens, mostly invertebrates, of which he described 3,000. Upon his return in 1856, Stimpson worked at the Smithsonian Institute. In 1865 he became director of the Chicago Academy of Sciences.
- <sup>j</sup> Frank Hamilton CUSHING (1857-1900) was curator at the ethnological department of the National Museum in Washington, D.C.
- <sup>k</sup> Frank Fanning JEWETT (1844-1926) held the post of chemistry professor at the Imperial University of Tōkyō in 1876 to 1880.
- <sup>l</sup> For Jeffries WYMAN see endnote *f* and *h*.
- <sup>m</sup> Charles F. HARTT, *Geology and physical geography of Brazil*. In: *Thayer Expedition: Scientific results of a journey in Brazil by Louis Agassiz and his traveling companions*, Boston: Fields, Osgood & Co., 1870. Charles Frederick HARTT (1840-1878) was a Canadian-American geologist and paleontologist, and member of the Thayer Expedition to Brazil 1865/66.
- <sup>n</sup> William C. BORLASE (1848-1899), *Nippon and its antiquities an essay on the ethnology, mythology, and religions of the Japanese*, Plymouth: W. Brendon and Son 1876.
- <sup>o</sup> SIEBOLD, F.v., *Archiv zur Beschreibung von Japan und dessen Neben- und Schutzländern Jezo mit den südlichen Kurilen, Krafu, Koorai und den Liukiu-Inseln*, Leiden 1832-1858. Philipp Franz von SIEBOLD (1796-1866) was a German physician ethnologist, plant collectors and botanists. He lived and worked in Japan from 1823 to 1829 (as VOC-physician in Deshima) and from 1859 to 1862.
- <sup>p</sup> KANDA Takahira 神田孝平 (1830-1898) was a Japanese politician and scholar, and first president of the Anthropological Society of Nippon (ASN).
- <sup>q</sup> NINAGAWA Noritane 蜷川式胤 (1835-82) was an important collector of Japanese ceramics.
- <sup>r</sup> For Jeffries WYMAN see endnote *f* and *h*.
- <sup>s</sup> YATABE Ryōkichi 矢田部良吉 (1851-1899) studied botany at Cornell University in 1872 to 1876 and became the first professor of botany at the Tōkyō Imperial University. YATABE translated MORSE's report on the Ōmori shell mound into Japanese in 1879 (among other things he also made some translations of Shakespeare together with TOYAMA Masakazu). Together with MORSE, YATABE was founder of the Botanical Society of the University of Tōkyō, later the Botanical Society of Japan.
- <sup>t</sup> TOYAMA Masakazu 外山 正一 (1848-1900) studied at the University of Michigan and became first Japanese professor of philosophy. From 1886 to 1890 he was president of Tōkyō Imperial University and later education minister.
- <sup>u</sup> MURRAY David (1830-1905) was mathematics professor and consultant of the Japanese Ministry of Education in the years 1873-1879. MURRAY accompanied MORSE on some his travels through Japan.
- <sup>v</sup> MATSUMURA Jinzō 松村任三 (1856-1928) was one of MORSE's students. From 1885 to 1888 he studied in Germany. 1890-1922 he was professor of botany at Tōkyō Imperial University.
- <sup>w</sup> SASAKI Chūjirō and IJIMA Isao, Jōshū Okadaira kaikyo hōkoku 常州陸平介墟報告. In: *Gakugei Shirin* 学藝志林, Vol. 6, (1880), pp. 91-110; and Okadaira shell mound at Hitachi, appendix to Vol. 1, part 1, of the *Memoirs of the Science Department*, Tōkyō Daigaku 1882. SASAKI Chūjirō 佐々木忠次郎 (1857-1938), a student of MORSE, became entomologist. SASAKI published together with IJIMA Isao 飯島魁 (1861-1921) some excavation reports on Okadaira shell mound, where the first independent excavations were carried out by Japanese scholars.
- <sup>x</sup> MATSURA Sayohiko 松浦佐用彦 (1857-1878), a student of MORSE, died in 1878, the year of the excavation of the Ōmori shellmound, from beri-beri.

TRACES  
OF  
AN EARLY RACE IN JAPAN.  
BY  
EDWARD S. MORSE.

THERE is no race of people in whose origin we are more interested than in that of the Japanese. Their history going so completely back for nearly two thousand years, their civilization, which in so many respects parallels our own—the various epochs in our history being typified again and again by similar ages in Japan—all excite our deepest interest. The difficulty of tracing out ethnical affinities either through their personal peculiarities or their language presents a problem yet unsolved. That they are a composite race we cannot doubt. All their traditions point to their coming from the south, and equally sure are we that when they landed they found a hairy race of men to contest their occupation. Later history shows that a number of Chinese invasions took place, and these unwelcome visits were returned by the Japanese. Corea was invaded by the Japanese long ago. With those facts in mind, we are no longer surprised at the great variety of faces to be met with in Japan—faces purely Chinese; others with the coarser features of the northern tribes; and again the delicate and pleasant features of what is supposed to represent the typical Japanese.

The conjectures and opinions that have been advanced regarding the origin of the Japanese would form a curious and bulky collection. It is worth noting that both pagan and Christian writers have held almost equally preposterous notions regarding the origin of the Japanese. The people themselves have a tradition that they owe their origin to the sun. Kämpfer holds the absurd idea that "they are descended from the first inhabitants of Babylon." From these vagaries we pass in turn to other ideas based on some foundation of fact. In a paper read before the Asiatic Society of Japan by Mr. Aston, an affinity is

VOL. XIV.—17

258 THE POPULAR SCIENCE MONTHLY.

shown to exist between certain words in the Japanese and Aryan; while Mr. Brooks, in the proceedings of the California Academy of Sciences, takes ground for believing that the Japanese and Chinese may have been derived from the west coast of South America. Mr. Isawa, an intelligent Japanese student, at the last meeting of the American Association for the Advancement of Science, called attention to the simi-

Figs. 1 to 9 show some of the various forms of vessels. Fig. 1, diameter, 120 mm. Fig. 2, diameter, 200 mm. Fig. 3, diameter, 130 mm. Fig. 4, height, 350 mm. Fig. 5, diameter, 170 mm. Fig. 6, diameter, 200 mm. Fig. 7, diameter, 130 mm. Fig. 8, diameter, 120 mm.

ilarity existing between many Japanese words and Hindostanee. With these and many other conflicting views, authorities seem to agree upon one thing, and that is, that the present inhabitants of Japan are not autochthonous, neither the Japanese nor the Ainos in Yesso.

TRACES OF AN EARLY RACE IN JAPAN. 259

So far as the ancient records of Japan are to be relied upon (and they certainly go back before the Christian era with considerable accuracy), Jimmu Tenno in the first century of our era came from a province in Kinshin for the conquest of Nippon or Japan. The invaders met with so courageous a resistance that they were obliged to go back to their own shores. The people who repulsed Jimmu Tenno and his followers are believed by the Japanese to have been the hairy men of Yesso, the ancestors of the present inhabitants of the northern islands.

The study of the language, traditions, and folk-lore of the Ainos, furnishes good reasons for believing that the ancestors of the Ainos came from Kamtschatka, drifting down through the Kuriles, and gradually becoming proprietors of the soil before the Japanese came from the south to displace them.

Fig. 9—the class of this vessel are quite common in the heaps, but only one, the fragments of which could be matched, was found. Its height was about 300 mm.

With every reason for believing that the Japanese came from the south, displacing the Ainos, who came from the north, the question next arises as to the original occupants of the island. Did the northern people encounter resistance from a primitive race of savages, or were they greeted only by the chattering of relatives still more remote, whose descendants yet clamber about the forest-trees to-day? The records are silent on these points. A discovery that I made in the vicinity of Tokio last year leads me to believe that possibly the traces of a race of men previous to the Aino occupation have been found. I say possibly, because a study of the Aino people, their manners, and traces of their early remains, is necessary before a definite opinion can be formed.

On my first visit to Tokio I discovered from the car-window a genuine "Kjoekoenmoedding," or shell-heap, as we call them. The deposit is in Omori, about six miles from Tokio; and one may well wonder why it had not been recognized before. It had probably often

260 THE POPULAR SCIENCE MONTHLY.

been seen, but, like many similar deposits in Europe and America, had been looked upon as natural beds of sea-shells deposited in past times, and after their formation elevated by upheaval. It was not until Steenstrup, of Copenhagen, first took up the critical study of similar deposits along the shores of the Baltic, and showed that the deposits were really the work of man, and of ancient man, that attention was attracted to these beds in other parts of the world.

Thanks to several years' study of these deposits along the coast of New England, in company with Prof. Jeffries Wyman, I was enabled to recognize the character of the Omori deposit at once. The railway passes directly through it, and most of it has been removed for ballasting the road. The bed evidently covered the field beyond the track for a considerable distance, judging from the quantity of shells and fragments of pottery which were strewn in the adjacent rice-field. The deposit varied from a few inches to two feet and a half in thickness, and the layer of earth above varied from two feet to nearly five feet in thickness. This great depth of soil above the shells might have been brought in by man, as the Japanese are famous for the manner in which they level the ground and fill in depressions. The thickness of soil above a deposit is always an untrustworthy guide in estimating the age of such a deposit: as, for example, the deposits about Salem, Massachusetts, containing precisely the same kinds of pottery and bone-implements, and presumably of the same age, will have in one place a thickness of two feet of soil above, and in the sterile pastures a thin layer of a few inches. The Omori deposit is made up of shells which still live in the bay of Yeddo, though I have not yet been able to study the living forms sufficiently to ascertain whether any changes have taken place in the fauna since the heaps were made. A number of genera are found, representing, among others, *Eburna*, *Turbo*, *Cerithium Arca*, *Pecten cardium*, two species of *Ostrea*, and, curiously enough, large valves of the common clam, *Mya arenaria*, hardly to be distinguished from the same species so common along the New England coast. The position of the Omori heap is striking. The shell-heaps of New England, Florida, and nearly all places where they have been observed, are always in immediate proximity to the shore or river. In some places, as at Goose Island, Maine, the ocean encroaches upon the deposits and is gradually removing them. Rev. James Fowler, in commenting upon the absence of shell-heaps along the New Brunswick coast, offers this as one of the evidences that the sea is encroaching upon the land, and calls attention to the fact that buildings, which stood at some distance from the shore fifty years ago, have since been washed away.<sup>1</sup> Along the shores of the Baltic, the shell-heaps, on the contrary, are a mile or more from the shore, and this fact, with evidences of a geological character, shows a practical encroachment of the land upon the sea by upheaval since the deposits were made.

The Omori deposits, like those of the Baltic, are some distance from

<sup>1</sup>"Southonian Annual Report" for 1870, p. 339.

the sea-shore—nearly, if not quite, half a mile. And that an upheaval has taken place since the deposits were made, there can be no doubt. Geological evidences are not wanting to support this view; these various deposits, remote from each other, such as the Denmark, New England, and Florida deposits, have each their peculiarities. In the Danish heaps there seems to be a scarcity of pottery, but an abundance of flint-chips and rude stone implements, as well as implements worked out of horn and bone. The New England shell-heaps are not rich in pottery fragments, the stone implements are rude and scarce, but the implements of horn and bone are comparatively not uncommon, those worked out of bone being more common. In the Florida deposits fragments of pottery are more abundant; and while rude stone and bone implements are found, the larger shells seem to have furnished them with material for many of their implements. Prof. Wyman has figured many of them in his memoir on the fresh-water shell-heaps of Florida, and Dr. Stimpson has figured an awl in the *American Naturalist*, which was made out of the spirally grooved columella of *Fuscolaria*. While the pottery of Denmark and New England is ornamented by incised lines and "cord-marks," the Florida pottery bears the marks of stamps by which they impressed a rude ornamentation upon their vessels. The Omori shell-heap has also its peculiarities: 1. The extreme abundance of pottery, both in fragments and nearly perfect vessels. From the great quantity found there, one is led to believe that in past times it was a famous place for its manufacture. Yet in the excavations no masses or unfinished vessels were found to justify this assumption. 2. The great variety in the form of the vessels and remarkable diversity in their ornamentation. From these characters alone one might infer it to be of more recent origin. Its rudeness, however, and the absence of anything like lathe-work or glazing, show it to be ancient. A greater portion of the pottery has the twisted cord-mark so common in most of the early pottery. Much of it has incised lines, and small fragments show a peculiar carving, made after the clay was dry, but before baking.

The ornamentation in these fragments is almost precisely similar to the Aino style of ornamenting. In other pottery also the peculiar way in which spaces between curved lines are "filled in," either by "cord-marks" or punctures, again recalls the Aino. And had nothing else been found in the deposit, the remains might have unhesitatingly been referred to the Yessoites. Such comparisons are unsafe, as Mr. Frank H. Cushing, of the Smithsonian Institution, finds similar pottery

A writer in one of the Yokohama papers calls attention to the fact that a fragment of glazed pottery was found, when the excavations were first made, against the exposed bank of the railway. He might have added that an English button and the soldered disk of a tin preserving-can were also found! Such a one, finding a living toad in a granitic crevice, would be likely to infer, either that the toad was as old as the granite, or that the granite was as recent as the toad.

in Northern New York and Canada, and I may add that in New England such pottery has been found. In many cases the borders of vessels are ornamented with undulating ribs, showing the marks of "finger-squeezing." A marked peculiarity of the pottery consists in the eleva-



Figs. 10 to 17 show a few of the knobs or handles which are peculiar to the Omori deposit. Not a single vessel was found with lips, as with the Central American pottery, but most of the vessels have raised knobs on the margin. Fig. 16 is looped, so that a wassies handle might be attached. Fig. 11 is 120 mm. in its longest diameter; the size of the other knobs may be estimated from this.

tion of the rim or border into ornamented knobs or handles, some of which are represented in Figs. 10 to 17 inclusive. Some painted pottery was also found, the coloring matter of which, on analysis by Prof. Jewett, of the Imperial University of Tokio, proves to be cinnabar. The

occurrence throughout the empire of stone celts, finished arrow-heads, and spear-points and pestles, is common. These might or might not have belonged to the Ainos, though, as similar forms occur in Yesso, the probability is that many of them at least are of early Aino manufacture. It is significant, however, to observe that the few stone implements found in the Omori beds are of the rudest manufacture; and, furthermore, that no shell-heap that I know of has revealed a less number, the two shown in Figs. 28 and 29 being made of a soft volcanic rock. Curiously enough, most of the other implements were made out of deer's-horns, only one being of bone (Fig. 21, evidently the end of a deer's metatarsal). An exquisitely finished arrow-point (Fig. 25) was fabricated out of a boar's tusk.

The bones of birds were not common. I searched in vain for traces of the great auk, the remains of which are so widely met with in Denmark and New England. Though ponderous shells of various species occur in the heap, no evidence was found that these were worked in any way.



Fig. 18 is a piece of pottery that may be a spindle-whorl—diameter, 70 mm. Fig. 19 is a small clay brick, 50 mm. in length. This is ornamented on both sides. It is difficult to conjecture its use. There are four more in the collection at the university, much larger and ornamented in a different manner. These are possibly amulets, or perhaps signs of office or authority. I think they are unique.

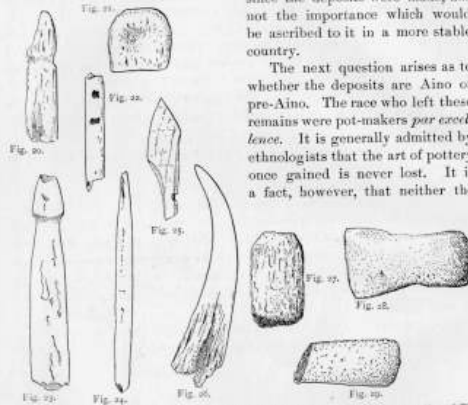
A fragment of a spindle-whorl is shown in Fig. 18. A peculiar tablet, or brick of clay, curiously ornamented, is shown in Fig. 19. Nothing of the kind, so far as I know, has been found in the shell-heaps of other parts of the world. It is difficult even to conjecture its use.

The most important discoveries connected with the Omori deposits are the unquestionable evidences of cannibalism. Large fragments of the human femur, humerus, radius, ulna, lower jaw, and parietal bone, were found widely scattered in the heap. These were broken in precisely the same manner as the deer-bones—either to get them into the cooking-vessel, or for the purpose of extracting the marrow—in all respects corresponding to the facts cited by Wyman in proof of the evidences of cannibalism found in the Florida and New England shell-heaps.

The question as to the antiquity of the Omori deposits naturally arises, and the evidences all point to a considerable antiquity, suggested by the entire absence of worked metals, as well as of finished or polished stone implements, the few implements found being of the rudest character.

The change which has taken place in the coast-line by upheaval, since the deposits were made, has not the importance which would be ascribed to it in a more stable country.

The next question arises as to whether the deposits are Aino or pre-Aino. The race who left these remains were pot-makers *par excellence*. It is generally admitted by ethnologists that the art of pottery once gained is never lost. It is a fact, however, that neither the



Figs. 20 to 28 represent a number of implements made out of horn, with the exception of Fig. 23, which is worked out of a boar's tusk. Figs. 23, 24, and 26, are respectively 60, 62, and 125 mm. in length. Fig. 21 is worked out of the end of a deer's metatarsal. Fig. 22 is a bird's bone, produced by a hammer, with two holes worked in it. Fig. 25 is a portion of deer's antler cut at both ends and broken. Figs. 28 and 29 are two stone implements, worked out of soft lava-rock. They are respectively 50 and 70 mm. in length.

Esquimaux, Aleutians, Kamtchadales, nor the Ainos, are essentially earthen-pot makers, their vessels being usually wrought out of stone or wood, and their ancient stone vessels are often met with in various parts of Japan.

If the unquestionable resemblance between the ornamentation of some of the fragments and similar styles of ornamentation among the present Ainos be looked upon as indicating a community of origin, what shall be said of the following figures of knobs found in a shell-heap on the Upper Amazon by the lamented Prof. Hartt? The knobs themselves are so unlike anything figured heretofore, and yet so precisely do they resemble similar knobs which are most common in the Omori deposits, that were they mixed with the collection it would be

impossible to separate them by a single character!—even to the depression on top and in front, as shown in Fig. 13.

A curious stone ornament, having the general shape of a comma, with the big end perforated, is known as the *magatama*. These peculiar-shaped objects are looked upon as ornaments belonging to the primitive inhabitants of Japan. Mr. Borlase<sup>1</sup> says the traditions about them have been handed down from mythological times.

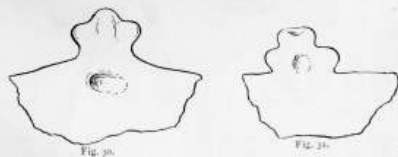
Siebold says: "To this day they are in use among the Ainos of Yesso and in the Kuriles, as precious ornaments, under the name of *sitogi*. The inhabitants, too, of Liukiu wear a stone resembling the *magatama*; so that this little jewel helps us to a noteworthy historic fact, namely, to the connection which in remote times existed between the inhabitants of the whole chain of islands from Taiwan to Kamchatka."

An exhaustive examination of the Omori deposits did not reveal anything like a *magatama*.

Were the Ainos cannibals?

Repeated inquiries among eminent Japanese scholars and archaeologists, like Mr. Kanda, Mr. Ninagawa, and others, as to this question, are always answered in the same way. Not only were they not cannibals, but they are reported as being so mild and gentle that murder was never known to have occurred. So monstrous a habit would certainly have been known and recorded, particularly in the painstaking annals of early historians.

In conclusion, then, the Omori shell-heap presents all the leading characteristics of the typical Kjoekkenmoedding. And the evidences



which Prof. Wyman cites as evidence of cannibalism, in the shell-heaps of Florida and Massachusetts, are likewise present in the Omori deposit. The recent occupation of America by the white race renders it difficult to determine how recent the shell-heaps along the coast may be, since the savages when first encountered were living in much the same condition as their ancestors had lived, just as to-day there still exist in some parts of the world veritable Stone-age savages. In Japan, however, where historians have chronicled with remarkable fidelity the minute details of their history, we get, as it were, some standard for

<sup>1</sup> "Nippon and its Antiquities."

time in estimating the age of the Omori deposits. It can be stated with absolute certainty that they are pre-Japanese; and there are as good reasons for believing them pre-Aino as early Aino.

I have to return my sincere thanks to the university authorities for the zeal they have displayed in assisting me in the examination of the deposits, and to the personal help afforded me in the excavations by Profs. Yatabe, Toyama, and Dr. David Murray, Messrs. Matsumura, Sasaki, Matsura, Fukuyo, and others. I made a special request that the deposits should be completely examined during my absence, and this examination was most faithfully done. A much larger collection was made with many new and curious forms of pots. I hope at some future time to illustrate them.

## DOLMENS IN JAPAN

Edward S .MORSE

EDWARD SYLVESTER MORSE: "DOLMENS IN JAPAN".  
IN: *THE POPULAR SCIENCE MONTHLY* 16:5 (1880), PP.  
593-601.

ALSO: REPRINTED SEPARATELY BY D. APPLETON & CO.  
NEW YORK IN 1880.

THOUGH a large amount of material has been collected and published regarding the megalithic structures of Europe, their classification is in a somewhat unsatisfactory condition.

The misery of the systematist has already made itself apparent in synonyms for a well-known class of monuments — namely, the dolmens. To make the matter more perplexing, structures of quite a different form, and possibly intended for a different purpose, are called by the same name.

A dolmen, generally speaking, consists of an arrangement of stones, few or many in number, supporting one or more stones in such a way as to inclose a cavity beneath. These supporting stones may form the four walls of a chamber, which may or may not be covered by a mound of earth. This chamber may or may not communicate outwardly by a long, narrow gallery (*allée couverte*). The mound may or may not have one or more rows of stones encircling it. And, finally, the stone structure may be on top of a mound of earth, instead of beneath it!

The simplest form of dolmen, if indeed it can be compared to the more elaborate structures bearing the same name, consists of several standing stones supporting one or more stones which rest upon them horizontally. If the roofing-stones rest with one end upon the ground, then it is called a demi-dolmen. A holed dolmen has one of the supporting stones (which generally forms one side of a square chamber) perforated. The demi-dolmens are not sufficiently specialized to establish any line of distribution. The holed dolmens are found in France and in India, and their curious resemblance has led many to believe in their common origin.

In the mound-covered dolmens a relationship is also seen between those of Brittany and Scandinavia, in the passageway generally opening toward the south or east



FIG. 1.—GENERAL APPEARANCE OF DOLMENS.

and never to the north.\*

From the mass of observations brought together regarding the dolmens, Mr. Fergusson †<sup>a</sup> has prepared a map showing their distribution in the Old World. From this map, dolmens are found to occur in the greatest number in France. They are also found in various parts of Great Britain, more abundantly on the eastern coast of Ireland, western coast of Wales, eastern coast of Scotland, southern portion of Sweden, and in Denmark and Northern Germany; also on the coast of Spain, Portugal, Northern Africa and the western portion of India. Mr. Fergusson, at the date of the publication of his book, asserts that the typical dolmen had not yet been found in America.

The occurrence in different parts of the world of a mound of earth containing a stone vault or chamber can not be looked upon as evi-

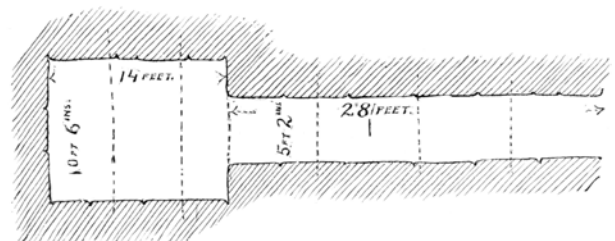


FIG. 2.—PLAN OF CHAMBER. The dotted lines show the roofing-stones.

\* Lubbock, "Prehistoric Times," p. 124.

† Fergusson, "Rude Stone Monuments," 1872.

dence of a community of origin, because such a structure seems to be a most natural form for the purposes of burial. The same structures are built to-day in many countries. It is only when it possesses some peculiar feature, like a perforation in one of its wall-stones, or a certain direction in which the passageway opens, that it suggests the idea that a common origin may be ascribed to those possessing these peculiarities.

In traveling across the southern part of Yeso last year, and also in a journey overland from the northern part of Japan to Tokio, I scanned the country carefully for mounds or monuments of any description. At the entrances of towns, one often sees two large mounds between which the road runs. Each mound is often surmounted by a large tree. Though these mounds are old, they are not prehistoric. With the exception of these, I saw nothing that would suggest a monument coming under the names of dolmen, menhir, etc.

There are many burial-mounds in Japan, such, for example, as the large one in Yamato, the grave of Jimmu Tenno, and others which are known to belong to historic periods. It is not improbable that the dolmens to be described belong to the same category.

It is difficult for one who has not traveled in Japan to realize the almost universal state of cultivation the country is under. Having a population of 33,000,000, largely given to agriculture, with an area not exceeding 80,000 square miles, one may imagine how few tracts of uncultivated land are found. One is amazed at the sight of ranges of hills and mountains extending for miles, and all terraced to their very summits, for the cultivation of wheat and other products. The lower levels for miles are ditched and diked for rice-cultivation. This is specially marked along the coast bordering the Inland Sea, and along

letter from Mr. Ogawa, of the college at Osaka, with the request that I should examine them. This letter, accompanied by a few sketches, was published by Professor Yatabe in a Japanese periodical in Tokio.

On my return from an expedition to the southern portion of the empire, I visited Osaka with my assistant, Mr. Tanada<sup>c</sup>, for the purpose of examining these structures. Mr. Ogawa and Mr. Amakusa, both teachers in the Osaka College, kindly accompanied me and rendered much assistance in the work of exploration. Our time was too limited to do more than make a hasty reconnaissance. We left Osaka early in the morning by *jinrikishas* (vehicles drawn by coolies), our way leading across extensive rice-fields, and our course directed to a range of low mountains about ten miles away. The country was as flat as a prairie, and had evidently been the floor of the sea at no remote geological period.

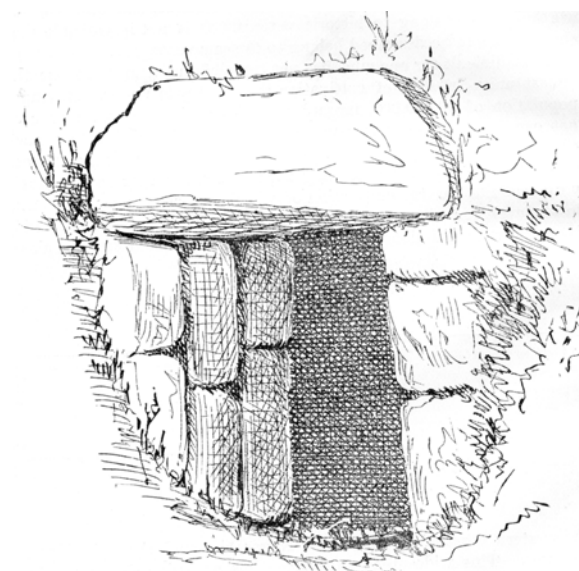


FIG. 4.—ENTRANCE TO CHAMBER.

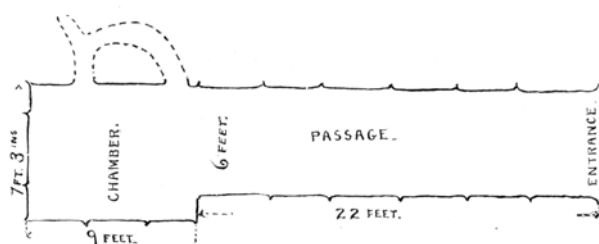


FIG. 3.—PLAN OF CHAMBER. Usual form.

the western coast of Kiushiu from Nagasaki round through Higo to Satsuma. This widespread cultivation has necessitated the leveling or other modifications of large tracts of country, and with this disturbance have probably disappeared many evidences of an ancient race. My attention was first called to the existence of some curious stone structures near Osaka, by Professor Yatabe<sup>b</sup>, of the University of Tokio, who had received a

The dolmens are found in the villages Hattori Gawa and Kori Gawa, which lie at the base of a low chain of mountains. Having reached Hattori Gawa, we left our *jinrikishas*, and hunted up the headman of the village who was to accompany us to the dolmens.

Providing ourselves with candles, we started up a rather steep road, and after a while diverged to the left, down through a tangled ravine—stopping at the door of a temple to examine an old pot which was brought out for our inspection, and which proved to be a piece of Bi-zen-ware, not very old. Shortly after, we came to a group of dolmens. They are widely scattered in groups of several along the slopes of the mountains for a considerable distance; and their general appearance is not unlike the mounds of Upsala, Sweden, as represented in the frontispiece of Lubbock's "Prehistoric Times."<sup>d</sup>



The structures consist of stone chambers covered by mounds of earth, communications with the chamber being by means of a long, straight, narrow passage—a typical *allée couverte*. The apices of the mounds are not so pointed as in the figure of Lubbock, and their slopes not so steep (see Fig. 1). They average fifteen to twenty feet in height, and fifty to seventy-five feet in diameter. The entrances to most of the chambers are partially obstructed by dirt and stone which have tumbled from the sides and roof of the entrance. The stones composing the walls of the passageway and chamber were not large. In every case, however, the roofing-stones, both of the passageway and chamber, were of very large size. In some cases the entire roof of the chamber consisted of a single stone, and in one case four huge blocks formed the roof of a passageway twenty-eight feet long (see Fig. 2). In every case, too, the stone which covered the passageway adjoining the chamber and forming part of its wall was of great size. The variation in the length of the passageways is due to their partial destruction. The other dimensions are quite uniform, as will be seen by comparing the following measurements of nine chambers, taken at random :

Length of Chamber	Breadth of Chamber	Height of Chamber	Length of Passageway	Breadth of Passageway	Height of Passageway
14•0	10•6	11•6	28	4•3	5•3
9•0	7•3	8•6	22	5•6	5•8
14•0	11•8	8•9	7	4•5	5•0
18•0	7•0	8•8	20	4•6	5•0
14•0	6•4	8•6	14	4•3	6•0
11•0	5•6	8•7	11	3•6	5•3
12•0	5•8	8•3	*	4•1	5•0
12•4	8•2	12•0	*	4•4	6•0
13•8	7•9	10•2	*	5•0	6•3

The plans vary but little—a single chamber, with the right wall flush with the right wall of the passageway, as in Fig. 3 ; or else the passageway entering the chamber on a median line, leaving a jog on each side, as in Fig. 2. Mr. Ogawa informed me that he had seen one with a small supplementary chamber leading from the end of the larger chamber.

The passageway was nearly a foot narrower at the top than at the base, and in some cases was slightly narrower at the entrance.

\* Passageway partially destroyed. Measurement in feet and inches.

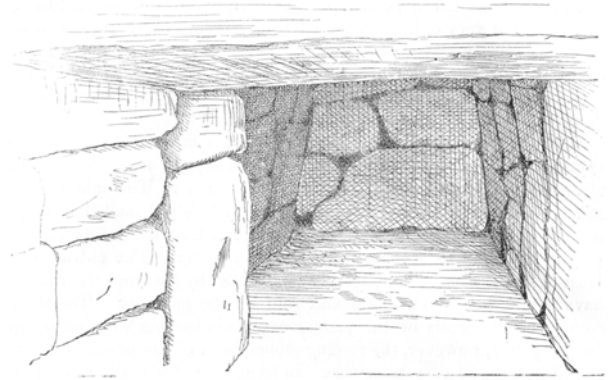


FIG. 5.—APPEARANCE OF CHAMBER FROM PASSAGEWAY.

In one case only were there signs that the chamber had been used as a place of residence. A small opening between two of the wall-stones at the base of one of the chambers appeared blackened by fire. By removing the dirt and smaller stones which had tumbled down, I managed with some difficulty to crawl into an irregular flue which was blackened with smoke. This flue communicated with another smaller flue leading back into the chamber (see Fig. 2).

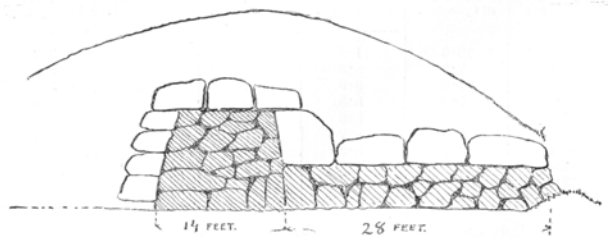


FIG. 6.—LONGITUDINAL SECTION OF DOLMEN, SHOWING CHAMBER AND PASSAGEWAY.

A rude sort of plaster was observed in some of the caves.

The walls of all the caves examined were carefully scrutinized to detect if possible signs of tool-marks or inscriptions, but nothing of the kind was observed. A careful search was made also for relics of some kind, but the floors were equally bare. Trenches were also dug down to the undisturbed soil, but no traces of pottery or implement of any description was found. This result is not surprising, when it is known that during the feudal days these chambers were often used as places of refuge for outlaws or political refugees, and during these times the earlier relics were probably removed or destroyed.

History records the fact that the governors of various provinces in which underground shelters occur ordered the closing of these places as a necessary measure.

No great antiquity can probably be assigned to these

structures. That they are over a thousand years old there can be no doubt.\* I am told by Japanese scholars that their early records call attention to these megalithic chambers existing in different parts of the country. Many of them have been destroyed, either for the purpose of securing the stone they contained for building materials, or to gain ground for cultivation.

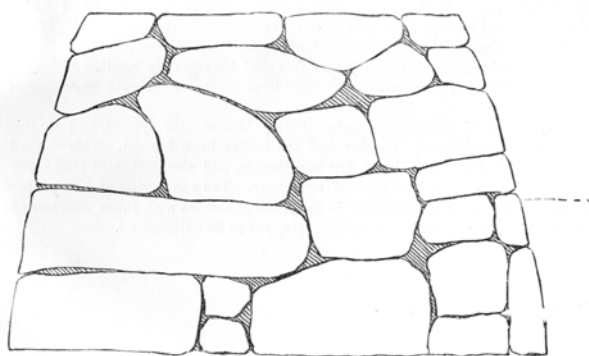


FIG. 7.—SHOWING ARRANGEMENT OF STONES IN SIDE-WALL OF CHAMBER. Length, 14 feet; height, 11 feet 6 inches. The dotted line to the right shows roof of passageway.

In the vicinity of the dolmens and in the paths leading to them, fragments of a hard, blue, unglazed pottery were found; and these fragments are identical with vessels dug up in various parts of the empire, which are regarded by Japanese archaeologists as being of Korean origin, from nine to twelve hundred years old.

At the same meeting of the Boston Society of Natural History in which I communicated the results embodied in this paper, Professor F. W. Putnam<sup>f</sup> announced the discovery of chambered mounds in America, and communicated the following, which is taken from advance sheets of the "Proceedings" of that Society:

*These chambered mounds are situated in the eastern part of Clay County, Missouri, and form a large group on both sides of the Missouri River. The chambers are, in the three opened by Mr. Curtiss, about eight feet square, and from four and a half to five feet high, each chamber having a passageway several feet in length and two in width, leading from the southern side, and opening on the edge of the mound formed by covering the chamber and passageway with earth. The walls of the chambered passages were about two feet thick,*

*vertical, and well made of stones which were evenly laid, without clay or mortar of any kind. The top of one of the chambers had a covering of large, flat rocks, but the others seem to have been closed over with wood. The chambers were filled with clay which had been burned, and appeared as if it had fallen in from above. The inside walls of the chambers also showed signs of fire. Under the burned clay, in each chamber, were found the remains of several human skeletons, all of which had been burned to such an extent as to leave but small fragments of the bones, which were mixed with the ashes and charcoal. Mr. Curtiss thought that in one chamber he found the remains of five skeletons and in another thirteen. With these skeletons there were a few flint implements and minute fragments of vessels of clay.*

*A large mound near the chambered mounds was also opened, and in this no chambers were found. Neither had the bodies been burned. This mound proved remarkably rich in large flint implements, and also contained well-made pottery, and a peculiar "gorget" of red stone. The connection of the people who placed the ashes of their dead in the stone chambers with those who buried their dead in the earth-mounds is, of course, yet to be determined.*

\* In Fergusson's work, already alluded to, there is figured a dolmen of Uby, Scandinavia, page 311, and Antiquera Spain, page 383, which resemble in many features the dolmens near Osaka. Jewitt also, in his work entitled "Grave-Mounds and their Contents," figures the dolmen of New Grange, Meath, Ireland, page 57, and the cairn of Howth, Ireland, page 58, which again recall similar features to those of the dolmens described in this article. In the cairn of Howth the passageway is twenty-seven feet long.

## NOTES:

- <sup>a</sup> James FERGUSSON, *Rude Stone Monuments, In all Countries. Their Age and Uses*, London 1872. James FERGUSSON (1808-1886) was a Scottish architect and writer in the field of architecture. He lived several years in India and the orient.
- <sup>b</sup> YATABE Ryōkichi 矢田部良吉 (1851-1899) studied botany at Cornell University in 1872 to 1876 and became the first professor of botany at the Tōkyō Imperial University. YATABE translated MORSE's report on the Omori shell mound into Japanese in 1879 (among other things he also made some translations of Shakespeare together with TOYAMA Masakazu). Together with MORSE, YATABE was founder of the Botanical Society of the University of Tōkyō, later the Botanical Society of Japan.
- <sup>c</sup> TANADA Orizō 種田織三 was assistant to MORSE at Tōkyō University.
- <sup>d</sup> John LUBBOCK, *Pre-historic Times, as Illustrated by Ancient Remains, and the Manners and Customs of Modern Savages*, London: Williams and Norgate 1865. John LUBBOCK (1834-1913), 4<sup>th</sup> Baronet and 1<sup>st</sup> Baron Avebury, was an English banker, politician, naturalist and archaeologist. He coined the terms 'Palaeolithic' and 'Neolithic'.
- <sup>e</sup> For FERGUSSON see endnote a. Llewellynn JEWITT, *Grave-mounds and Their Contents. A Manual of Archaeology as exemplified in the Burials of the Celtic, the Romano-British, and the Anglo-Saxon Periods*, London: Groombridge and Sons 1870. Llewellynn JEWITT (1816-1886), librarian and journalist, was editor of the antiquarian magazine *The Reliquary* and member of the British Archaeological Association and a Fellow of the Society of Antiquaries.
- <sup>f</sup> F. W. PUTNAM (comp.), *Symposium on "Paleolithic man in eastern and central North America"*. *Proceedings of the Boston Society of Natural History*, Vol. 23, 1888, pp. 247-254, 23, and pp. 419-449, 24; 1889, pp. 141-165. Frederick Ward PUTNAM (1839-1915) was one of the earliest anthropologists in the United States. PUTNAM was fellow student of MORSE at Harvard. He founded institutions for anthropological research at Harvard University and at the University of California, Berkeley, and worked to establish museum collections in anthropology. PUTNAM taught anthropology, archaeology and ethnology at Harvard University and directed some of the first field expeditions in the Americas. Later he became curator of the Peabody Museum of American Archaeology and Ethnology (1875-1909), honorary curator of the Peabody Museum (1909-1913), and honorary director of the Peabody Museum (1913-1915). He held the posts of Peabody Professor of American Archaeology and Ethnology (1886-1909) and Peabody Professor Emeritus (1911-1915).

DOLMENS IN JAPAN.

BY  
EDWARD S. MORSE.

THOUGH a large amount of material has been collected and published regarding the megalithic structures of Europe, their classification is in a somewhat unsatisfactory condition.

The misery of the systematist has already made itself apparent in synonyms for a well-known class of monuments—namely, the dolmens. To make the matter more perplexing, structures of quite a different form, and possibly intended for a different purpose, are called by the same name.

A dolmen, generally speaking, consists of an arrangement of stones, few or many in number, supporting one or more stones in such a way as to inclose a cavity beneath. These supporting stones may form the four walls of a chamber, which may or may not be covered by a mound of earth. This chamber may or may not communicate outwardly by a long, narrow gallery (*allée couverte*). The mound may or may not have one or more rows of stones encircling it. And, finally, the stone structure may be on top of a mound of earth, instead of beneath it!

The simplest form of dolmen, if indeed it can be compared to the more elaborate structures bearing the same name, consists of several standing stones supporting one or more stones which rest upon them horizontally. If the roofing-stones rest with one end upon the ground, then it is called a demi-dolmen. A holed dolmen has one of the supporting stones (which generally forms one side of a square chamber) perforated. The demi-dolmens are not sufficiently specialized to establish any line of distribution. The holed dolmens are found in France and in India, and their curious resemblance has led many to believe in their common origin.

In the mound-covered dolmens a relationship is also seen between

3

peculiar feature, like a perforation in one of its wall-stones, or a certain direction in which the passageway opens, that it suggests the idea that a common origin may be ascribed to those possessing these peculiarities.

In traveling across the southern part of Yezo last year, and also in a journey overland from the northern part of Japan to Tokio, I scanned the country carefully for mounds or monuments of any description. At the entrances of towns, one often sees two large mounds between which the road runs. Each mound is often surmounted by a large tree. Though these mounds are old, they are not prehistoric. With the exception of these, I saw nothing that would suggest a monument coming under the names of dolmen, menhir, etc.

There are many burial-mounds in Japan, such, for example, as the large one in Yamato, the grave of Jimmu Tenno, and others which are known to belong to historic periods. It is not improbable that the dolmens to be described belong to the same category.

It is difficult for one who has not traveled in Japan to realize the almost universal state of cultivation the country is under. Having a population of 33,000,000, largely given to agriculture, with an area not exceeding 80,000 square miles, one may imagine how few tracts of uncultivated land are found. One is amazed at the sight of ranges of hills and mountains extending for miles, and all terraced to their very summits, for the cultivation of wheat and other products. The lower levels for miles are ditched and diked for rice-cultivation. This is specially marked along the coast bordering the Inland Sea, and along

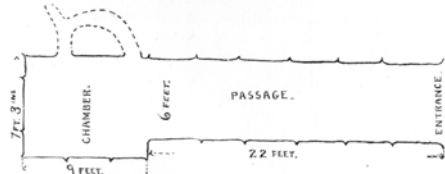


FIG. 3.—PLAN OF CHAMBER. Utsuji fort.

the western coast of Kiushiu from Nagasaki round through Higo to Satsuma. This widespread cultivation has necessitated the leveling or other modifications of large tracts of country, and with this disturbance have probably disappeared many evidences of an ancient race. My attention was first called to the existence of some curious stone structures near Osaka, by Professor Yatabe, of the University of Tokio, who had received a letter from Mr. Ogawa, of the college at Osaka, with the request that I should examine them. This letter, accompanied

2

those of Brittany and Scandinavia, in the passageway generally opening toward the south or east and never to the north.\*



FIG. 1.—GENERAL APPEARANCE OF DOLMENS.

From the mass of observations brought together regarding the dolmens, Mr. Fergusson † has prepared a map showing their distribution in the Old World. From this map, dolmens are found to occur in the greatest number in France. They are also found in various parts of Great Britain, more abundantly on the eastern coast of Ireland, western coast of Wales, eastern coast of Scotland, southern portion of Sweden, and in Denmark and Northern Germany; also on the coast of Spain, Portugal, Northern Africa and the western portion of India. Mr. Fergusson, at the date of the publication of his book, asserts that the typical dolmen had not yet been found in America.

The occurrence in different parts of the world of a mound of earth containing a stone vault or chamber can not be looked upon as evi-

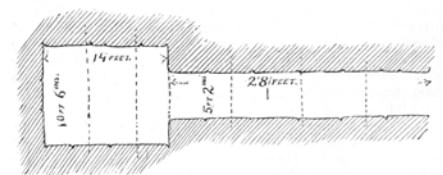


FIG. 2.—PLAN OF CHAMBER. The dotted lines show the roofing-stones.

dence of a community of origin, because such a structure seems to be a most natural form for the purposes of burial. The same structures are built to-day in many countries. It is only when it possesses some

\* Lubbock, "Prehistoric Times," p. 124.

† Fergusson, "Rude Stone Monuments," 1872.

4

by a few sketches, was published by Professor Yatabe in a Japanese periodical in Tokio.

On my return from an expedition to the southern portion of the empire, I visited Osaka with my assistant, Mr. Tanada, for the purpose of examining these structures. Mr. Ogawa and Mr. Amakusa, both teachers in the Osaka College, kindly accompanied me and rendered much assistance in the work of exploration. Our time was too limited to do more than make a hasty reconnaissance. We left Osaka early in the morning by *jirikishas* (vehicles drawn by coolies), our way leading across extensive rice-fields, and our course directed to a range of low mountains about ten miles away. The country was as flat as a prairie, and had evidently been the floor of the sea at no remote geological period.

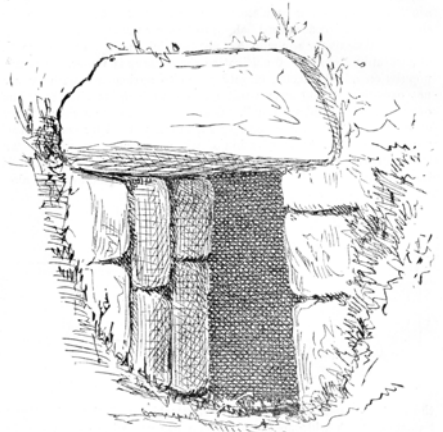


FIG. 4.—ENTRANCE TO CHAMBER.

The dolmens are found in the villages Hattori Gawa and Kori Gawa, which lie at the base of a low chain of mountains. Having reached Hattori Gawa, we left our *jirikishas*, and hunted up the head-man of the village who was to accompany us to the dolmens.

Providing ourselves with candles, we started up a rather steep road, and after a while diverged to the left, down through a tangled ravine—stopping at the door of a temple to examine an old pot which was brought out for our inspection, and which proved to be a piece of Bizzen-ware, not very old. Shortly after, we came to a group of dolmens. They are widely scattered in groups of several along the slopes of the mountains for a considerable distance; and their general appearance is not unlike the mounds of Upsala, Sweden, as represented in the frontispiece of Lubbock's "Prehistoric Times."

The structures consist of stone chambers covered by mounds of earth, communications with the chamber being by means of a long, straight, narrow passage—a typical *alle couverte*. The apices of the mounds are not so pointed as in the figure of Lubbock, and their slopes not so steep (see Fig. 1). They average fifteen to twenty feet in height, and fifty to seventy-five feet in diameter. The entrances to most of the chambers are partially obstructed by dirt and stone which have tumbled from the sides and roof of the entrance. The stones composing the walls of the passageway and chamber were not large. In every case, however, the roofing-stones, both of the passageway and chamber, were of very large size. In some cases the entire roof of the chamber consisted of a single stone, and in one case four huge blocks formed the roof of a passageway twenty-eight feet long (see Fig. 2). In every case, too, the stone which covered the passageway adjoining the chamber and forming part of its wall was of great size. The variation in the length of the passageways is due to their partial destruction. The other dimensions are quite uniform, as will be seen by comparing the following measurements of nine chambers, taken at random:

Length of Chamber.	Breadth of Chamber.	Height of Chamber.	Length of Passageway.	Breadth of Passageway.	Height of Passageway.
14-0	10-6	11-6	28	4-3	5-3
9-0	7-3	8-6	22	5-6	5-8
14-0	11-8	8-9	7	4-5	5-0
13-0	7-0	8-8	20	4-6	5-0
14-0	6-4	8-6	14	4-3	5-0
11-0	5-6	8-7	11	3-6	5-3
12-0	5-8	8-3	*	4-1	5-0
12-4	8-2	12-0	*	4-4	6-0
13-8	7-9	10-2	*	5-0	6-3

The plans vary but little—a single chamber, with the right wall flush with the right wall of the passageway, as in Fig. 3; or else the passageway entering the chamber on a median line, leaving a jog on each side, as in Fig. 2. Mr. Ogawa informed me that he had seen one with a small supplementary chamber leading from the end of the larger chamber.

\* Passageway partially destroyed. Measurement in feet and inches.

The passageway was nearly a foot narrower at the top than at the base, and in some cases was slightly narrower at the entrance.

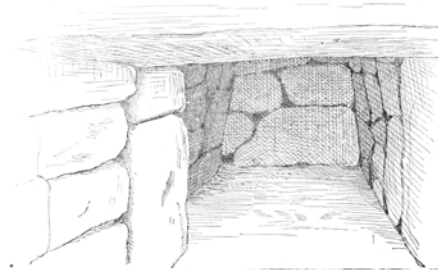


FIG. 5.—APPEARANCE OF CHAMBER FROM PASSAGEWAY.

In one case only were there signs that the chamber had been used as a place of residence. A small opening between two of the wall-stones at the base of one of the chambers appeared blackened by fire. By removing the dirt and smaller stones which had tumbled down, I managed with some difficulty to crawl into an irregular flue which was blackened with smoke. This flue communicated with another smaller flue leading back into the chamber (see Fig. 2).

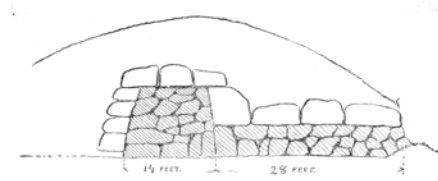


FIG. 6.—LONGITUDINAL SECTION OF DOLMEN, SHOWING CHAMBER AND PASSAGEWAY.

A rude sort of plaster was observed in some of the caves.

The walls of all the caves examined were carefully scrutinized to detect if possible signs of tool-marks or inscriptions, but nothing of the kind was observed. A careful search was made also for relics of

some kind, but the floors were equally bare. Trenches were also dug down to the undisturbed soil, but no traces of pottery or implement of any description was found. This result is not surprising, when it is known that during the feudal days these chambers were often used as places of refuge for outlaws or political refugees, and during these times the earlier relics were probably removed or destroyed.

History records the fact that the governors of various provinces in which underground shelters occur ordered the closing of these places as a necessary measure.

No great antiquity can probably be assigned to these structures. That they are over a thousand years old there can be no doubt.\* I am told by Japanese scholars that their early records call attention to these megalithic chambers existing in different parts of the country. Many of them have been destroyed, either for the purpose of securing the stone they contained for building materials, or to gain ground for cultivation.

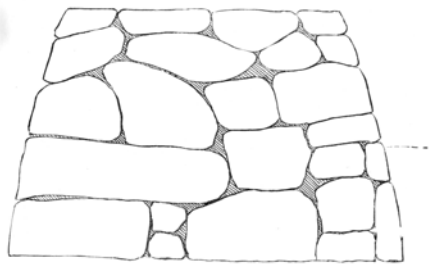


FIG. 7.—SHOWING ARRANGEMENT OF STONES IN SIDE-WALL OF CHAMBER. Length, 14 feet; height, 11 feet 6 inches. The dotted line to the right shows roof of passageway.

In the vicinity of the dolmens and in the paths leading to them, fragments of a hard, blue, unglazed pottery were found; and these fragments are identical with vessels dug up in various parts of the empire, which are regarded by Japanese archaeologists as being of Corcean origin, from nine to twelve hundred years old.

\* In Fergusson's work, already alluded to, there is figured a dolmen of Uby, Scandinavia, page 311, and Antipera, Spain, page 283, which resemble in many features the dolmens near Osaia. Jewitt also, in his work entitled "Grave-Mounds and their Contents," figures the dolmen of New Grange, Meath, Ireland, page 57, and the cairn of Howth, Ireland, page 58, which again recall similar features to those of the dolmens described in this article. In the cairn of Howth the passageway is twenty-seven feet long.

At the same meeting of the Boston Society of Natural History in which I communicated the results embodied in this paper, Professor F. W. Putnam announced the discovery of chambered mounds in America, and communicated the following, which is taken from advance sheets of the "Proceedings" of that Society:

These chambered mounds are situated in the eastern part of Clay County, Missouri, and form a large group on both sides of the Missouri River. The chambers are, in the three opened by Mr. Curtis, about eight feet square, and from four and a half to five feet high, each chamber having a passageway several feet in length and two in width, leading from the southern side, and opening on the edge of the mound formed by covering the chamber and passageway with earth. The walls of the chambered passages were about two feet thick, vertical, and well made of stones which were evenly laid, without clay or mortar of any kind. The top of one of the chambers had a covering of large, flat rocks, but the others seem to have been closed over with wood. The chambers were filled with clay which had been burned, and appeared as if it had fallen in from above. The inside walls of the chambers also showed signs of fire. Under the burned clay, in each chamber, were found the remains of several human skeletons, all of which had been burned to such an extent as to leave but small fragments of the bones, which were mixed with the ashes and charcoal. Mr. Curtis thought that in one chamber he found the remains of five skeletons and in another thirteen. With these skeletons there were a few flint implements and minute fragments of vessels of clay.

A large mound near the chambered mounds was also opened, and in this no chambers were found. Neither had the bodies been burned. This mound proved remarkably rich in large flint implements, and also contained well-made pottery, and a peculiar "gorget" of red stone. The connection of the people who placed the ashes of their dead in the stone chambers with those who buried their dead in the earth-mounds is, of course, yet to be determined.