

Material report: Human skeletal remains of the Edo period excavated from the Shokenji Ato site, Shinjuku-ku

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Abstract This is the material report of the human skeletal remains excavated from the Shokenji Ato site in Shinjuku-ku, Tokyo. This collection is one of the good collections of human skeletal remains with good preservation state and large sample size that are stored in the department of Anthropology at the National Museum of Nature and Science, Tokyo. Although the anthropological report was published in 2005, it was written only in Japanese and some human skeletal remains were not reported. The purpose of this material report is to present the inventory of human skeletal remains excavated from the cemetery of the Shokenji Ato site in English. The total number of individuals reached to 964, and 226 individuals had well-preserved human skeletal remains.

Key Words: Edo period, human skeletal remains

Introduction

Some huge assemblages of the human skeletal remains from one archaeological site are contained within the collections of the National Museum of Nature and Science Tokyo. The Sugengi and Shokenji Ato sites are one of the good collections for anthropological researches because of well-preserved and large sample size. The Sugengi and Shokenji Ato sites were located in Minamimotomachi Shinjuku-ku, Tokyo, Japan. These sites are the ruins of the Sugengi and Shokenji Buddhist temples that utilized from 1653 A.D. to 1909 A.D. (Taisei Engineering Co. Ltd., 2005). Their cemeteries were clearly divided by remnants of the street. The number of burial facilities in these temples reached 1434, 579 of which were located at the Sugengi Ato site and 855 at the Shokenji Ato site. The anthropological analysis of the human skeletal remains excavated from these sites was reported by Kajigayama *et al.* (2005). This number of individuals reached 661 from the Sugengi temple and

401 from the Shokenji temple and an inventory with estimated sex and age-at-death was also presented in Japanese. However, the number of the unidentified samples, which were not listed in this report, reached 345 due to limited time for analysis." We already had reported the inventory of the human skeletal remains excavated in Sugengi Ato site (Sakaue and Kajigayama, 2018).

The purpose of this report is to present the inventory of human skeletal remains excavated from the cemetery of the Shokenji Ato site in English. This report will help all researchers to investigate the human skeletal remains who lived in the Edo city.

Material and Methods

The criteria for the descriptions contained in this inventory are as follows:

"Number"

The numbers refers to those of burial pits numbered under the excavation process of this site.

"Additional N."

It refers to the branch number assigned under

the excavation process of this site.

“Grid”

The characters of this column indicate the point where the skeletal remains were excavated and reported in the archaeological report (Taisei Engineering Co. Ltd. 2005).

“Level”

This indicates the height above sea level and has two subcategories: “Upper”, which is the highest altitude located at the uppermost point of the burial pit, and “Lower”, which is the lowest altitude at the bottom of the pit.

“Cutting”

This refers to the relationship of cutting and re-cutting of some pits when they were excavated with arrows.

“Burial style”

This means the structure of the burial customs, which are used as indicators of social class and status during the Edo period (Tanigawa, 2002). There are seven styles found in this site as follows;

Kamekan in wooden burial chamber: This burial style was adopted among the “Hatamoto” (the upper vassals of the Tokugawa house), the “Koke” (noble families of the Hatamoto), and the “Omoyaku” classes (high ranking samurai as officials and advisors in service to the daimyos). They tended to be buried in a ceramic jar housed in a wooden burial chamber in the earth.

Kamekan: This style was used widely among the samurai class among the “Hatamoto”, the “Gokenin” (the lower vassals of the Tokugawa house), and the “Hanshi” classes (vassals of the daimyos). They tended to be buried in only a ceramic jar after the late 17th century.

Hayaoke: This style of inexpensive circular wooden coffin was widely seen among the lower Samurai class and townsmen during the Edo period.

Square wooden coffin: This style of square wooden coffin was seen after the late 17th century, and its relationship with social class has also not been confirmed.

Cinerary urn: This style was used for the burial of the cremated bones during the Edo

period. Its relationship with social class has also not been clarified

Earthenware coffin: This was used for the burial of children’s remains during the Edo period.

Burial pit and Secondary burial: These essentially mean that one (Burial pit) or multiple individuals (Secondary burial) were buried in the earth without any burial facilities.

“Conditions”

This means the preservation state of human skeletal remains. It is supposed that one burial facility contained one person. If multiple individuals were contained in one facility, one individual comprised the primary burial and the others were thought to have been added later. In this inventory, the first individual of each burial facility is thought to have been the primary burial, based on the preservation of skeletal remains and their morphological traits such as the length, the thickness of long bones, and degenerative changes.

Good: This term is used subjectively to refer to a “good” state preservation, characterized by an almost complete skull and some intact long bones.

Not bad: This is also subjective and means that the shape of the skull can be observed and some variables of the skull are measurable.

Bad: This refers to a wide range of preservation state, including skulls with a few measurable variables to bone fragments that are identifiable.

Burned: This refers to bones that have been cremated, from which sex cannot be diagnosed basically but age-at-death was roughly estimated as “Child?” or “Adult?” as noted below.

Fragments: This category contains a small amount of identified bones and unidentifiable bone fragments in one facility.

Contamination: This refers to a small amount of identified bones which were apparently from the other persons than a person of primary burial. “Age-at-death”

The estimation of age at death is based on teeth, pubic symphysis and the auricular surface of the pelvis, epiphyseal union, and cranial

sutures. An individual's age-at-death is classified into following eight age categories.

Infant: This category refers to individuals aged about 0–5 years. Indications for this age group range from “no eruption of deciduous teeth” to “no eruption of permanent teeth.” (Ubelaker, 1989).

Child: This category refers to individuals aged about 5–11 years. Indications for this age group range from “eruption of the first permanent molar” to “no eruption of the second permanent molar.”

Adolescent: This category refers to individuals aged about 11–20 years. Indications for this age group range from “eruption of the second permanent molar” to “persistence of epiphyseal lines in any bone but the clavicle.”

Young adult: This category refers to individuals aged about 20–30 years. Indications for this age group range from the “macroscopic disappearance of epiphyseal lines in all bones but the clavicle” to “persistence of epiphyseal lines of the clavicle.” In addition, the pubic symphysis of an individual shows the morphological characteristics of Phases 1–2 in the Suchey-Brooks system (Brooks and Suchey, 1990). There are finely granulations with marked transversely organized billows on the auricular surface (Lovejoy *et al.*, 1985).

Middle adult: This category refers to individuals aged about 30–50 years. Indications for this age group range from the “macroscopic disappearance of the epiphyseal lines of the clavicle” to “no or little appearance of degenerative change in the vertebral body.” In addition, the pubic symphysis shows the morphological characteristics of Phases 3–5. There are also coarse granulations or a partially dense irregular surface without transverse organization.

Old adult: This category refers to individuals aged more than 50 years. Indications for this age group are degenerative changes such as “antemortem tooth loss”, “lipping of the vertebral body,” and “lipping on the articular facet.” In addition, the pubic symphysis shows the morphological characteristics of Phase 6. The auricu-

lar surface shows a dense irregular surface of rugged topography with macroporosity and irregular and lipping margins.

Child?: This category is used for individuals without the indicators used to estimate the age-at-death. In this case, however, the size of the bones or the bone surface characteristics such as the smooth area of muscle attachments as well as tooth formation, indicate that the individual was likely a child at his or her time of death.

Adult?: This category is used for individuals without the indicators used to estimate age-at-death. However, morphological characteristics such as size, muscle attachments, and tooth formation, indicate that the individual was likely an adult.

“Sex”

The sex of an individual can be diagnosed based on morphological characteristics comprising the greater sciatic notch and ventral arc of the pelvis, supraorbital ridge, and mastoid process of the skull (Buikstra and Ubelaker, 1994; Sakaue and Adachi, 2009). The following four classifications pertain to this criterion.

Male: All characteristics indicate that the individual is male.

Male?: Any of the above-mentioned characteristics indicates that the individual is male. In case of a discrepancy, the sex is diagnosed according to the characteristics mentioned above in descending order of importance.

Female: All characteristics indicate that the individual is female.

Female?: Any of the above-mentioned characteristics indicates that the individual is female.

A blank cell means there is no clue for sexual diagnosis.

“N. of Measurable” in Cranium and Mandible

This number indicates the number of how many variables (out of 13 variables) that can be measured for the cranium (Maximum length, Basion-Nasion length, Maximum breadth, Basion-Bregma height, Least frontal breadth, Basion-Prosthion length, Bizygomatic breadth, Bimaxillary breadth, Martin's Upper facial height, Orbital breadth, Orbital height, Nasal

breadth, and Nasal height) and five variables of mandible (Bicondylar breadth, Bigonial breadth, Projective length of mandible, Height of mandibular ramus, and Minimum width of ramus).

“Long bone Length”

A “○” sign in these columns means that it was possible to measure the maximum lengths of each long bone. If multiple individuals were contained in one burial facility and have difficulty to be assessed the attribution of long bones, the long bones that were able to be measured at their maximum length were not assigned to “Measurable” in this inventory.

Results and Discussion

Table 1 shows the inventory of the human skeletal remains excavated from the Shokenji Ato site. It is showed that 661 out of the 855 burial facilities contained the human skeletal remains. The total number of individuals was 964, which indicated that the estimated numbers of individuals were overpassed those of burial facilities. Over one-third of faculties (268 out of 661) had the inter relationship of cutting and re-cutting between each other. And there were 251 samples classified in “contamination”. Similar trends could be seen also in the Sugenji Ato site (804 individuals out of 500 facilities, and 235 facilities having cutting and re-cutting, and 169 samples of “contamination”: Sakaue and Kajigayama, 2018). These results must have been caused by the burial system of the Edo city that people were buried additionally in a grave where someone already had been buried within a narrow and restricted cemetery area (Tanigawa, 2004).

As seen in Table 2, the number of the well-preserved remains reached to 127 for “Good” and 99 for “Not bad” conditions. The number of individuals who could be assigned to the eight age categories reached to 695, of which 371 individuals were able to be estimated their sexes (192 males, 111 females) in Table 3. It can be said that

the human skeletal remains excavated at the Shokenji Ato site show the same good condition as those at the Sugenji Ato site, and they both will have great value for anthropological research.

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Table 1. Inventory of the human skeletal remains excavated from the Shokengi Ato site

Table 1. Continued

Table 1. Continued

Number	Branch N.	Grid	Level		Cutting	Burial style	Condition	Age-at-death	SEX	Cranium N. of measurable	Mandible N. of measurable	Humerus length	Radius length	Ulna length	Femur length	Tibia length	Fibula length	
			Upper	Lower														
91		H9	15.431	15.221		Cinerary urn				Contamination	Adult?							
92		I9	15.581	15.491		Cinerary urn				Burned	Child?							
94	b	H9	15.717	15.477		Cinerary urn				Burned	Adult?							
96		I0	15.282	15.082		Cinerary urn				Burned	Adult?							
97		H9-10	15.531	14.831	-385	Kamekan				Burned	Adult?							
98		I9-10	15.542	15.262		Square wooden coffin				Contamination	Child?							
99		H9	15.535	15.085	-100-348	Hayaoke				Contamination	Child?							
100		H9	15.610	15.49	-99	Earthenware coffin				Bad	Infant							
101		H9	15.517	15.267	-102	Square wooden coffin				Bad	Child							
102		I9	15.491	15.191	-101-349	Hayaoke				Contamination	Adult?							
108		H9	15.497	15.197	-109-195-193-194-110	Hayaoke				Bad	Infant							
111		H9	15.525	15.255	-46a-364	Hayaoke				Bad	Middle adult							
114		I8-9	15.577	15.397		Square wooden coffin				Fragments	Child?							
120		H8	15.461	15.101		Hayaoke				Bad	Adult?	Female						
121		I8	15.544	15.397		Cinerary urn				Contamination	Adult?							
122		F8	15.528	15.118		Hayaoke				Fragments	Adult?							
123		I8	15.525	15.455		Kamekan				Fragments	Child?							
124		G7	15.621	15.251		Square wooden coffin				Bad	Child							
126	1	F7	15.597	15.397	-126-2-126-3	Hayaoke				Bad	Adult?							
126	3	I7	15.497	15.367	-126-1	Cinerary urn				Burned	Adult?							
127		F7	15.664	15.304	-315b	Hayaoke				Bad	Adult?							
129	a&b	F7	15.401	15.031	-129b-129c	Square wooden coffin				Bad	Adult?							
130		F-G7	15.679	15.549		Hayaoke				Contamination	Adult?							
136		H8	15.305	15.125		Square wooden coffin				Bad	Middle adult	Male						
137		H8	15.339	15.289		Square wooden coffin				Fragments	Infant							
138	a	H8	15.500	15.27	-138b	Hayaoke				Fragments	Adult?							
										Fragments	Child?							

Table 1. Continued

Table 1. Continued

Number	Branch N.	Grid	Level		Cutting	Burial style	Condition	Age-at-death	SEX	Cranium	Mandible	Ulna length	Radius length	Femur length	Tibia length	Fibula length	
			Upper	Lower													
207		G10	14.945	14.685	←204-206/→372					Good	Young adult	Female	13	5			
		G10	14.989	14.869						Not bad	Middle adult	Male	13				
208	1	G10	14.898	—	→371					Not bad	Adult?	Male	10				
209	2	G10	14.851	—						Contamination	Adult?	Male					
210		G10	15.015	14.565						Fragments	Adult?						
211		G10	14.840	14.24						Fragments	Adult?						
212		G-H9	15.102	14.452						Fragments	Adult?						
214		G9	14.995	14.695	←216-217					Kamekan	Contamination	Child?					
215		G9	15.017	14.717	→215					Square wooden coffin	Bad						
216		G9	15.483	15.083	→354-355-366					Kamekan	Middle adult	Male					
218		G9	14.966	14.776						Square wooden coffin	Bad						
222		G9	14.886	14.666						Hayaoke	Bad						
223		G9	14.975	14.845						Cinerary urn	Burned						
226		H10	15.274	15.154						Hayaoke	Bad						
227		J10	15.448	15.228						Cinerary urn	Burned						
230		J10	15.466	15.236						Cinerary urn	Burned						
232		J10	15.438	15.228						Cinerary urn	Burned						
236		H9	15.332	15.172						Cinerary urn	Burned						
238		H9	15.415	15.215						Cinerary urn	Burned						
239		H-19	15.308	15.168						Cinerary urn	Burned						
241		I9	15.347	15.137						Cinerary urn	Burned						
242		I9	14.777	14.557						Cinerary urn	Burned						
244		H9	15.220	15.02						Cinerary urn	Burned						
245		H9	15.186	14.969						Cinerary urn	Burned						
247		H9	15.393	15.173						Cinerary urn	Burned						
248		H9	15.540	15.130						Cinerary urn	Burned						
249		H9	15.317	15.117	→258					Cinerary urn	Burned						
250		H9	15.033	14.903	→257d					Cinerary urn	Burned						
255		H10	15.195	14.895	←249					Cinerary urn	Burned						
258		H9	15.132	15.032	→357					Hayaoke	Bad						
262		I10	15.132	15.032						Hayaoke	Bad						

Table 1. Continued

Table 1. Continued

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Table 1. Continued

Table 1. Continued

Number	Branch N.	Grid	Level		Cutting		Burial style		Condition	Age-at-death	SEX	Cranium	Mandible	Humerus length	Radius length	Ulna length	Femur length	Tibia length	Fibula length
			Upper	Lower															
51.0		H9	14.561	14.401	-491a		Cinerary urn	Burned	Adult?										
51.1		H9	14.561	14.341	-491a		Cinerary urn	Burned	Adult?										
51.2		F6	14.778	14.638			Square wooden coffin	Bad	Adult?										
51.3		F6	14.778	14.078	-556		Kamekan	Good	Middle adult	Male	11	5	○	○	○	○	○	○	○
51.4		G10	14.384	14.284	->599		Cinerary urn	Burned	Adult?										
51.5		H9	14.609	14.159	->494		Kamekan	Not bad	Contamination	Adult?									
51.6		G9	14.308	13.948			Hayaoke	Bad	Contamination	Adult?									
51.8		G9	14.004	13.784	-<453		Cinerary urn	Burned	Adult?										
52.0		H10	14.183	13.963			Square wooden coffin	Bad	Child	Contamination	Adult?								
52.2		I9	14.293	13.693			Kamekan	Good	Middle adult	Male	11	4	○	○	○	○	○	○	○
52.4		G6	14.631	14.441			Cinerary urn	Burned	Adult?										
52.5		G6	14.521	14.221	->583: 592		Burial pit	Good	Middle adult	Male	12	5	○	○	○	○	○	○	○
52.6		F6	14.394	13.894	-<513		Hayaoke	Contamination	Adult?										
52.7		F5	14.956	—			Secondary burial	Not bad	Contamination	Adult?									
52.8		F5	14.723	—			Secondary burial	Not bad	Contamination	Adult?									
52.9		F5	14.797	—			Secondary burial	Bad	Contamination	Adult?									
53.2		F6	15.361	15.151			Cinerary urn	Burned	Adult?										
53.3		F6	15.400	15.17			Cinerary urn	Burned	Adult?										
53.4		F6	15.030	14.41	->701		Kamekan	Not bad	Young adult	Female	10	5	○	○	○	○	○	○	○
53.6		F5	14.912	14.212			Kamekan in wooden burial chamber	Good	Old adult	Male	12	5	○	○	○	○	○	○	○
53.7		F5	15.012	14.162	->538a: 549: 758a: 758b		Kamekan in wooden burial chamber	Bad	Middle adult	Male	13	5	○	○	○	○	○	○	○
53.8	a	F5	14.915	14.615	->537: 538b		Hayaoke	Contamination	Adult?										
53.8	b	F5	14.915	14.825	->538a		Cinerary urn	Burned	Adult?										
53.9	upper	F5	14.846	—			Secondary burial	Not bad	Middle adult	Male	3	3	○	○	○	○	○	○	○
53.9	in a lump	F5	14.846	14.666	->540: 541		Hayaoke	Bad	Middle adult	Male	3	3	○	○	○	○	○	○	○

Table 1. Continued

Number	Branch N.	Grid	Level		Cutting	Burial style	Condition	Age-at-death	SEX	Cranium N. of measurable	Mandible N. of measurable	Humerus length	Radius length	Ulna length	Femur length	Tibia length	Fibula length
			Upper	Lower													
540		F5	14.853	14.693	←539 F-541	Square wooden coffin	Contamination	Adult?									
541		F5	14.811	14.601	←539 F→540	Hayaoke	Bad	Adult?									
542	b	F5	15.109	14.859		Cinerary urn	Burned	Adult?									
543		F5	14.651	14.071	→543; 637; 642	Kanekan	Good	Middle adult	Male	12	5	○	○	○	○	○	○
544		F5	14.800	14.68		Earthenware coffin	Fragments	Contamination	Adult?								
545		F5	14.672	13.932	→694	Kanekan	Good	Middle adult	Female	11	4	○	○	○	○	○	○
547		F5	14.766	14.626	→550	Square wooden coffin	Bad	Adult?	Male								
548		F5	14.846	14.646	←537	Hayaoke	Bad	Adult?	Male?								
549		F5	14.560	14.42	←552	Square wooden coffin	Bad	Young adult									
551		F5	14.734	14.574	←530; →551	Square wooden coffin	Bad	Middle adult	Female								
552		G5	14.461	14.221		Cinerary urn	Burned	Adult?									
556		G5	14.575	14.045		Hayaoke	Not bad	Middle adult		12	○	○	○	○	○	○	○
557		G5	14.573	14.073	→636	Hayaoke	Contamination	Adult?									
558		G5	14.638	14.118	←601	Hayaoke	Good	Middle adult	Male	12	5	○	○	○	○	○	○
559		G5	14.697	14.147	←561 a	Hayaoke	Contamination	Adult?									
560		G5	14.651	14.351		Hayaoke	Not bad	Middle adult									
561	b	G5	14.650	14.5		Cinerary urn	Bad	Infant									
562		G5	14.650	14.5		Cinerary urn	Contamination	Adult?									
563		G5	14.591	14.481		Cinerary urn	Contamination	Adult?									
564		G6	14.578	14.388		Cinerary urn	Burned	Adult?									
565		G6	14.495	14.385		Cinerary urn	Burned	Adult?									
567		G6	14.544	14.314		Cinerary urn	Burned	Adult?									
568		G6	14.661	14.461	→569	Kanekan	Fragments	Adult?									
570	a	G6	14.676	14.136	←570a; 570b	Hayaoke	Burned	Adult?									
570	b					Cinerary urn	Bad	Adult?		11							
570	in a lump					Contamination	Adult?										
572	a	G6	14.390	13.91	→572b	Burial pit	Good	Middle adult	Male	11	3	○	○	○	○	○	○

Table 1. Continued

Number	Branch N.	Grid	Level		Cutting	Burial style	Condition	Age-at-death	SEX	Cranium	Mandible	Humerus length	Radius length	Ulna length	Femur length	Tibia length	Fibula length
			Upper	Lower													
572	b	G6	14.603	14.023	←572a	Square wooden coffin	Good	Young adult?	Female	13	5	○	○	○	○	○	○
573		G6	14.661	14.261		Hayaoke	Bad	Contamination	Adult?	Infant	Middle adult	Male				○	○
574		G6	14.640	14.09		Square wooden coffin	Good	Young adult?	Female	13	5	○	○	○	○	○	○
575		G6	14.324	14.104		Hayaoke	Bad	Contamination	Child?	Infant	Middle adult	Male				○	○
576		G6	14.270	14.04		Cinerary urn	Bad	Burned	Adult?	Infant	Middle adult	Male				○	○
577		F6	14.455	14.005		Kamekan	Bad	Burned	Adult?	Infant	Middle adult	Male				○	○
578		F-G6	15.021	14.471		Hayaoke	Good	Young adult	Female	13	4	○	○	○	○	○	○
579		G6	14.444	14.244		Hayaoke	Burned	Adult?	Infant	Not bad	Middle adult	Male				○	○
580	b	F-G6	14.929	14.629	←580a		Bad	Contamination	Child?	Infant	Old adult	Male				○	○
581		F6	14.577	14.247		Earthenware coffin	Good	Young adult	Female	13	5	○	○	○	○	○	○
582		F-G6	14.537	14.037	→617	Square wooden coffin	Good	Young adult	Male	13	5	○	○	○	○	○	○
583		F-G6	14.284	14.084	←525	Hayaoke	Good	Young adult	Male	13	5	○	○	○	○	○	○
584		F5-6	14.411	13.791	←533	Kamekan	Good	Young adult	Male	13	5	○	○	○	○	○	○
586		G5	14.624	14.304		Hayaoke	Good	Young adult	Male	13	5	○	○	○	○	○	○
587		G5-6	14.777	14.227		Hayaoke	Good	Young adult	Male	13	5	○	○	○	○	○	○
588		G5	14.573	14.203	←568	Hayaoke	Good	Young adult	Male	13	5	○	○	○	○	○	○
590		G5-6	14.578	14.188	→621-634	Hayaoke	Bad	Contamination	Adult?	Infant	Middle adult	Male				○	○
591		G6	14.573	14.033	→603	Hayaoke	Good	Young adult	Male	10	9	○	○	○	○	○	○
592		upper				Hayaoke	Good	Young adult	Male	13	5	○	○	○	○	○	○
592		G6	14.508	13.958	←525	Hayaoke	Good	Young adult	Male	13	5	○	○	○	○	○	○
593		F-G6	14.593	14.063	→607	Hayaoke	Good	Young adult	Male	12	5	○	○	○	○	○	○
595		G6	14.185	13.605		Cinerary urn	Bad	Burned	Adult?	Infant	Middle adult	Male				○	○
597		G10	14.329	14.199	→596	Cinerary urn	Bad	Burned	Adult?	Infant	Middle adult	Male				○	○
598		G10	14.306	14.105		Cinerary urn	Bad	Burned	Adult?	Infant	Middle adult	Male				○	○
599		G10	14.421	14.221	←514	Cinerary urn	Bad	Burned	Adult?	Infant	Middle adult	Male				○	○
601		G5	14.656	14.156	→559-602	Square wooden coffin	Good	Young adult	Male	13	5	○	○	○	○	○	○
602		G5	14.597	14.067	←601	Hayaoke	Good	Young adult	Male	12	3	○	○	○	○	○	○
603		G6	14.563	14.213	←591-→666	Hayaoke	Good	Young adult	Male	13	5	○	○	○	○	○	○
607		G6	14.492	13.942	←593-→666	Hayaoke	Bad	Contamination	Adult?	Infant	Middle adult	Male				○	○
608		G6	14.288	13.858		Kamekan	Bad	Contamination	Adult?	Infant	Middle adult	Male				○	○
609		F6	14.200	14.050	→610b	Cinerary urn	Bad	Contamination	Child?	Infant	Middle adult	Male				○	○

Table 1. Continued

Table 1. Continued

Table 1. Continued

Number	Branch N.	Grid	Level		Cutting	Burial style	Condition	Age-at-death	Sex	Cranium	Mandible	Humerus	Radius	Ulna	Radius length	Ulna length	Femur length	Tibia length	Fibula length
			Upper	Lower															
673		G6	13.668	13.468		Cinerary urn	Burned	Adult?	Young adult	Male	12	5	○	○	○	○	○	○	○
674		G6	13.824	13.304			Hayaoke	Good	Young adult	Male			○	○	○	○	○	○	○
676		G6	13.739	13.429			Hayaoke	Contamination	Adult?	Infant									
677		G6	13.778	13.418			Hayaoke	Bad	Infant										
a		G6	13.912	13.582	→ 678b		Hayaoke	Bad	Infant										
b																			
678		F-G6	13.991	13.641			Hayaoke	Contamination	Adult?	Infant									
679		G6	13.600	13.340			Hayaoke	Not bad	Infant										
681		G6	13.606	13.426				Burned	Adult?										
682		G6	13.609	13.409				Burned	Adult?										
683		G6	13.673	13.403				Bad	Infant										
684		G6	13.749	13.399				Bad	Infant										
685		G6	13.593	13.293				Contamination	Infant										
686		G6	13.615	13.295				Not bad	Infant										
687		F7	13.341	12.921				Hayaoke	Child										
688		F7	14.157	13.577				Hayaoke	Child										
689		G7	14.069	13.489				Hayaoke	Young adult	Male	13	5	○	○	○	○	○	○	○
690		G7	13.579	12.979				Hayaoke	Young adult	Female	13	5	○	○	○	○	○	○	○
691		G6	13.609	13.289				Hayaoke	Good	Young adult									
692		G6	13.774	13.214				Hayaoke	Good	Middle adult	Male	13	5	○	○	○	○	○	○
693		F5	14.127	13.847				Hayaoke	Good	Middle adult	Male	13	5	○	○	○	○	○	○
695		G6	13.689	13.489					Secondary burial	Adult?									
697		F7	13.665	13.475					Good	Adult?									
698		F7	13.646	13.436					Burned	Adult?									
702	upper	F6	14.586	14.066	→ 701 / → 728a	728b-729		Square wooden coffin	Not bad	Young adult	Male?	12	5	○	○	○	○	○	○
702	lower								Contamination	Adult?									
706	a	F5	13.666	13.436						Middle adult	Male	13	5	○	○	○	○	○	○
706	b	F5	13.636	13.576						Adolescent									
704		G6	13.747	13.467						Infant									
705		F5	14.696	14.446						Good	Middle adult	Male	13	5	○	○	○	○	○
706		F5	13.593	13.409						Contamination	Adult?								
707		F5	13.593	13.393							Burned	Adult?							
708		F5	13.593	13.393							Contamination	Adult?							
709		F5	13.532	13.332								Burned	Adult?						

Table 1. Continued

Number	Branch N.	Grid	Level		Cutting	Burial style	Condition	Age-at-death	SEX	Cranium	Mandible	Ulna length	Radius length	Femur length	Tibia length	Fibula length	
			Upper	Lower													
710		G5·6	13.7.16	13.186		Hayaoke	Not bad	Young adult	Female	11	5	○	○	○	○	○	○
711		F5	14.3.07	14.007		Square wooden coffin	Contamination	Adult?	Female			○	○	○	○	○	○
712	outside coffin	G7	14.2.41	13.711		Hayaoke	Not bad	Young adult	Male	11	5	○	○	○	○	○	○
713		F5	14.1.71	13.891		Unknown	Good	Middle adult	Female	12	5	○	○	○	○	○	○
713	lower					Square wooden coffin	Contamination	Adult?	Female	13		○	○	○	○	○	○
714		F5	13.6.08	13.4.08	←715	Hayaoke	Not bad	Young adult	Male			○	○	○	○	○	○
715		F5	13.4.39	13.0.89	→714·734	Burial pit	Contamination	Child?	Male	13	5	○	○	○	○	○	○
716		F5	13.4.13	12.9.83	→807	Kamekan	Good	Middle adult	Male			○	○	○	○	○	○
717		G6	13.4.12	13.3.62		Cinerary urn	Burned	Child?	Male	7	5	○	○	○	○	○	○
718		G6	13.3.07	12.7.07		Kamekan	Good	Middle adult	Female	13	5	○	○	○	○	○	○
719		G6	13.4.40	13.1.80		Hayaoke	Not bad	Infant				○	○	○	○	○	○
720		G5	13.6.99	13.3.79		Hayaoke	Not bad	Infant				○	○	○	○	○	○
721		F6	14.2.02	13.5.72	←729	Kamekan	Good	Middle adult	Female	13	5	○	○	○	○	○	○
722		G5	13.6.26	13.4.26		Cinerary urn	Contamination	Child?	Male			○	○	○	○	○	○
723		G6	13.4.88	13.1.88		Hayaoke	Burned	Child?	Male			○	○	○	○	○	○
725		F5	13.7.19	13.1.99	→743	Hayaoke	Not bad	Child?	Male			○	○	○	○	○	○
726		F5	13.5.47	13.0.17		Hayaoke	Good	Middle adult	Male	13	5	○	○	○	○	○	○
728		F6	14.2.60	13.7.30	←702→728·729	Burial pit	Not bad	Adult?	Female	13		○	○	○	○	○	○
728	b	F6	14.3.60	14.0.00	←702·728a	Hayaoke	Not bad	Infant				○	○	○	○	○	○
729		F6	14.3.52	13.8.22	←702·728a→721	Hayaoke	Good	Adult?	Male	13	5	○	○	○	○	○	○
731		F5·6	14.1.61	13.9.61	←620	Kamekan	Contamination	Child?	Male	13	5	○	○	○	○	○	○
732		F5	13.3.17	13.1.27		Cinerary urn	Burned	Contamination	Adult?			○	○	○	○	○	○
733		F·G5	13.4.33	12.9.63		Kamekan	Bad	Contamination	Adult?			○	○	○	○	○	○
734		F5	13.5.65	13.3.88	→800	Cinerary urn	Burned	Contamination	Adult?			○	○	○	○	○	○
735		F5	13.4.12	13.2.32		Cinerary urn	Burned	Contamination	Adult?			○	○	○	○	○	○
736		F5	13.5.42	13.3.42	→800	Cinerary urn	Burned	Contamination	Adult?			○	○	○	○	○	○
737		G5	13.5.48	13.3.58		Cinerary urn	Burned	Contamination	Adult?			○	○	○	○	○	○
738		F5	13.3.23	13.2.63		Cinerary urn	Burned	Contamination	Adult?			○	○	○	○	○	○

Table 1. Continued

Table 1. Continued

Number	Branch N.	Grid	Level		Cutting		Burial style		Condition	Age-at-death	SEX	Cranium N. of measurable	Mandible N. of measurable	Humerus length	Radius length	Ulna length	Femur length	Tibia length	Fibula length
			Upper	Lower															
775		F5	13.1.55	13.0.25			Cinerary urn		Burned	Adult?	Infant								
776		F5	13.1.35	12.8.55			Hayaoke		Bad	Infant	Infant								
777		F6	13.5.05	13.1.55	←757		Hayaoke		Not bad										
778		F5	13.1.89	12.8.89			Hayaoke		Good	Child									
779		G5	13.7.51	—			Secondary burial		Bad	Contamination	Adult?	Middle adult	Male	7					
780		F-G7	13.4.78	13.0.28			Kamekan		Contamination	Adult?	Child?	Child		12	5				
781		F6	13.4.29	13.2.49			Cinerary urn		Burned	Adult?	Adult?								
782		F6	13.3.37	13.1.27			Hayaoke		Bad	Adult?	Male								
783		F6	13.9.59	13.4.29	←662		Hayaoke		Good	Middle adult	Male	13	5	○	○	○	○	○	○
784		F5	13.4.04	12.8.64	→849		Hayaoke		Good	Middle adult	Male	13	5	○	○	○	○	○	○
786		G5	13.8.10	13.2.90			Hayaoke		Good	Contamination	Child?	Child							
787		G5	13.8.22	13.3.02			Hayaoke		Good	Old adult	Male	12							
788		F5	13.4.99	13.1.79			Hayaoke		Bad	Infant									
789		F6-7	13.6.33	13.1.83			Hayaoke		Not bad	Contamination	Adult?	Adult?		11	5				
790		G6	13.1.27	12.7.37			Hayaoke		Good	Child			11	5	○	○	○	○	
791		G6	13.1.19	12.8.89			Hayaoke		Good	Infant									
792		F5	13.7.22	13.2.42	→668 a		Burial pit		Good	Adult?	Male	12	5	○	○	○	○	○	
793		F6	13.0.67	12.8.77			Cinerary urn		Burned	Adult?	Adult?	Young adult	Male	13	5	○	○	○	
794		F6	13.1.19	12.9.29			Cinerary urn		Bad	Contamination	Adult?	Adult?	Infant						
795		F6	13.1.14	12.7.84			Hayaoke		Not bad	Contamination	Child?	Child							
796		F6	13.2.36	12.9.36			Burial pit		Good	Contamination	Child?	Young adult	Male	13	5	○	○	○	○
797		F5	13.8.28	13.4.28			Burial pit		Burned	Contamination	Adult?	Adult?	Infant						
798	a	F5	13.3.41	14.2.51	→798b		Cinerary urn		Bad	Contamination	Adult?	Adult?							
798	b	F5	14.2.41	14.0.61	←798a		Cinerary urn		Not bad	Contamination	Adult?	Adult?							
799		F5	14.4.32	14.1.22			Cinerary urn		Good	Contamination	Child?	Young adult	Male	13	5	○	○	○	○
800		F5	13.5.42	13.2.02	←734-736		Hayaoke		Not bad	Contamination	Child?	Young adult	Male	13	5	○	○	○	○
801		F-G6	13.9.06	12.4.96			Hayaoke		Bad	Contamination	Child?	Child?	Infant						
802		G6	13.9.98	12.4.78			Hayaoke		Good	Young adult	Female	Female	13	5	○	○	○	○	○
803		G6	13.0.40	—			Hayaoke		Good	Young adult	Female	Female	13	5	○	○	○	○	○
804		F5	13.0.68	12.7.48			Hayaoke		Bad	Contamination	Child?	Child?	Infant						
805		F5	13.0.19	12.8.29			Cinerary urn		Burned	Adult?	Middle adult	Female	13	4	○	○	○	○	○
807		F5	13.0.53	12.5.33	←716		Hayaoke		Good	Contamination	Child?	Child?							

Table 1. Continued

Table 1. Continued

Table 2. The number of individuals classified in each condition at the Shokenji Ato site and the Sugenji Ato site

	Shokenji	(%)	Test*	Sugenji	(%)
Good	127	(13.2)	<<	170	(21.1)
Not bad	99	(10.3)	>>	33	(4.1)
Bad	260	(27.0)	<<	380	(47.3)
Burned	197	(20.4)	>>	38	(4.7)
Fragments	30	(3.1)		14	(1.7)
Contamination	251	(26.0)	>	169	(21.0)
Total	964	(100.0)		804	(100.0)

*Two proportion Z-test were done for two tailed. A single inequality sign means significant difference at 0.05 level, and double inequality sign does at 0.01 level respectively.

Table 3. Summary of the estimated sex and age groups at the Shyokenji Ato site and the Sugenji Ato site

	Shokenji				Sugenji			
	Male	Female	Unknown	Total	Male	Female	Unknown	Total
Infant			89	89			65	65
Child			23	23			13	13
Adolescent	6	4	8	18	12	16	17	45
Young adult	21	30	1	52	45	46	0	91
Middle adult	109	43	4	156	120	52	2	174
Old adult	7	7	0	14	15	24	4	43
Child?			50	50			25	25
Adult?	49	27	217	293	29	12	84	125
Total	192	111	392	695	221	150	210	581

"Male?" and "Female?" in Table 1 were included in "Male" and "Female" respectively.