

The Archaeological Excavation at the Pamittan Site, Barangay Lanna, Solana, Cagayan Province, Philippines.

Kazuhiko Tanaka and Alfredo B. Orogo

I. Introduction

The Cagayan River is the second longest river in the Philippines. It has many branches in several provinces of northern Luzon. The river runs in the middle of the Cagayan Valley collecting the water from these branches. It is supposed that various cultures had flourished along this river since the prehistoric times.

One of the authors, Tanaka, has joined in the research projects of shell-midden sites in the lower reaches of the Cagayan River since middle 1980's (Aoyagi, Aguilera, Ogawa and Tanaka 1986, 1988, 1989, 1991. Tanaka 1997, 1998a, b, c, 1999a, b). One of the objectives of these projects is to establish the cultural sequence in this area. Several excavations of the shell-midden sites in Lal-lo revealed the well-stratified cultural layers (Tanaka 1998a, 1998b). The results of these excavations contributed to establish the cultural sequence from the late Neolithic through the Metal Age to the Contact Age.

Meanwhile Several archaeological researches were also conducted in the middle reaches of the Cagayan River, specially along the main stream of

the Cagayan River (Aoyagi 1983, Snow et al. 1986, Ronquillo et al 1992). One of the most important sites discovered is the Andarayan Site in Solana, where Dr. Shutler and his colleagues excavated an earthenware sherd which contained the rice husk and stem in the paste. The rice husk and stem in the earthenware sherd were dated at 3400 ± 125 B.P.. And a charcoal sample excavated in that site was also dated to 3240 ± 160 B.P. So it was clarified by this excavation that the people had used the pottery and the rice as their staple food in the middle reaches of the Cagayan River by the middle of the second millennium B.C.

However, several questions were raised. What kind of pottery did they use? What were cultural and chronological relationships between the sites in the middle reaches and those in the lower reaches of the Cagayan River? How did the pottery change through the time in this area? In order to find the answers for these questions, it was necessary to conduct the archaeological excavation in the site with multiple cultural layers in the middle reaches of the Cagayan River.

The Pamittan site in Lanna, Solana is one of ideal sites for this kind of objectives. Because the

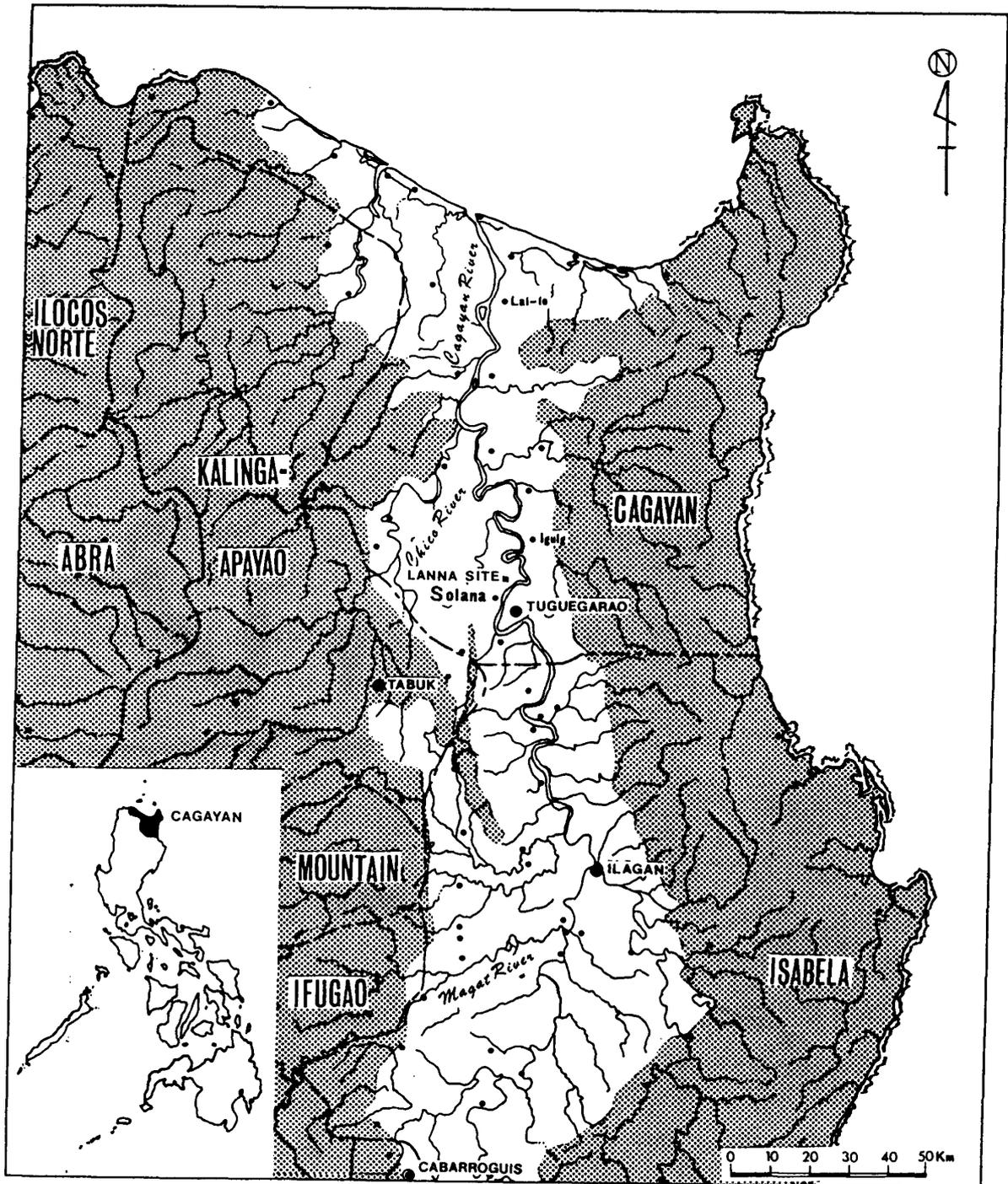


Fig. 1. Location Map of Lanna Site and the Cagayan Valley

test excavation in the Pamittan site in November, 1993 clarified that the site had at least two cultural layers. And the Pamittan site is adjacent to the Andarayan site. This is a brief report of the archaeological excavation of the Pamittan site, Solana, Cagayan. And we examined some artifacts

such as clay ornaments and a decorated earthenware sherd excavated in this site in this paper.

Our research team at the Pamittan Site is composed of Mr. Alfredo B. Orogo, Museum Researcher II, Mr. Kazuhiko Tanaka, Museum Honorary Researcher, lecturer of Chiba Keiai Junior College

and a Fellow of the Japan Society for Promotion of Science for Japanese Junior Scientists, Mr. Jose Santiago, Museum Researcher I and the artist of the team, Mr. Eustaquio Larios, Jr., Museum Technician I, Mr. Jimmy Fabila, Museum Driver/Technician I, Mr. Raul Evalisto, Museum Mechanic III/Driver, Mr. Lorito Soliano, Museum Technician of the Region II Branch Museum, Mr. Domingo Pagulayan, Museum Technician of the Region II Branch Museum and local laborers in barangay Lanna (Mr. Mario Pamittan, son of the landowner, Mr. Alex Balungaya, friend of Mr. Mario Pamittan and Mr. Wilson Lucina, son of the barangay Captain). After the excavation, Mr. Bonifacio Pacion, Museum Technician of the Region II Branch Museum and Mrs. Aileen Eclipse, Museum Clerk of the Region II Branch Museum joined in the laboratory works in the Branch Museum. The general supervision of the project was given by Mr. Wilfredo P. Ronquillo, Chief of the Archaeology Division of the National Museum.

The research is a part of a joint project between Kazuhiko Tanaka and the Archaeology Division of the National Museum of the Philippines. This is also a part of the project entitled "The Chronological Study of the Prehistoric Pottery in Northern Luzon, Philippines" financially supported by the research fund of the Ministry of Education in Japan for a fellow of the Japan Society for the Promotion of Science for Japanese Junior Scientists. The preparation for the publication was financially supported by the fund of the Institute of Environmental Studies of Keiai Uni-

versity.

Although this report is a joint paper of Kazuhiko Tanaka and Alfredo Orogo, Chapter I, III, IV, VIII, IX, X, XI, XIII, and XIII were written by Kazuhiko Tanaka and Chapter II, V, VI, VII were written by Alfredo Orogo.

II. Physical location and profile of the area

Cagayan province is one of the six provinces that comprise Region II (Cagayan Valley) in northeastern Luzon. The other provinces of the region include Bontoc, Ifugao, Isabela, Kalinga-Apayao and Nueva Vizcaya. The wide valley is a sedimentary basin formed during the Tertiary epoch and folded in the late Pliocene to the Pleistocene period (Lopez 1973). The floor of the valley is a deposition of alluvial materials resulting from the constant inundation of the Cagayan River that runs from Nueva Vizcaya in the south to Aparri in the north and the erosion of the Cabalwan anticline in the west.

The valley is bounded in the north by the Babuyan Channel, in the east by the Sierra Madre Mountains, in the west by the Cordillera Central Mountains and terminated in the south by the Caraballo Mountains. These mountain ranges are composed of the Oligocene basaltic to andesitic volcanic rocks. Seasons are not very pronounced, however, the region is generally dry from November to April and wet during the rest of the year (Lopez 1973). The maximum rain periods are

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likewise, not very pronounced with the short dry season lasting only from two to three months. Generally, the typhoon season lasts from July to November.

III. Previous archaeological researches in Solana, Cagayan

One of earliest archaeological works in Solana is the surface collection in a jar burial site in Cabalwan in 1971 conducted by Mr. Yoji Aoyagi, then Honorary Researcher of the National Museum (Ronquillo, Evangelista and Flores 1992). Then this site was visited by Dr. Fox, Mr. Ronquillo, Mr. Evangelista and Mr. Flores in 1974. After that, the archaeological excavation was conducted. The site revealed 44 burial jars, 43 earthenware jars and one stoneware burial jar (Ronquillo, Evangelista and Flores 1992).

Linda Burton excavated the Lanna site from late May to early June in 1974. Although her report has not been published yet, she left type script in the National Museum (Burton 1974). According to it, she excavated two trenches set like letter "T"; one was 83cm long and 91.5cm wide and the other was 200cm long and 142cm wide (Burton 1974). These two trenches were set like letter "T" (Burton 1974). Four quadrangular stone adzes, three hammer stones, flakes and cores and a fragment of ling-ling-o type earring made of jade were collected from the surface of the site. Chert flakes, one stepped adze, one slate pendant, one petrified wood and earthenware sherds were exca-

vated in the trench.

Dr. Shutler excavated the Andarayan site in 1978 (Snow, Shutler et al 1986). His excavation revealed many red-slipped pottery sherds, clay earrings and clay spindle whorls, chert flakes and a small fragment of polished stone adze. As mentioned in "Introduction", Dr. Shutler and his colleagues found the rice remains in the paste of the earthenware sherd. The rice husk and the stem fragment was dated at 3400 ± 160 B.P. (Snow, Shutler et al 1986).

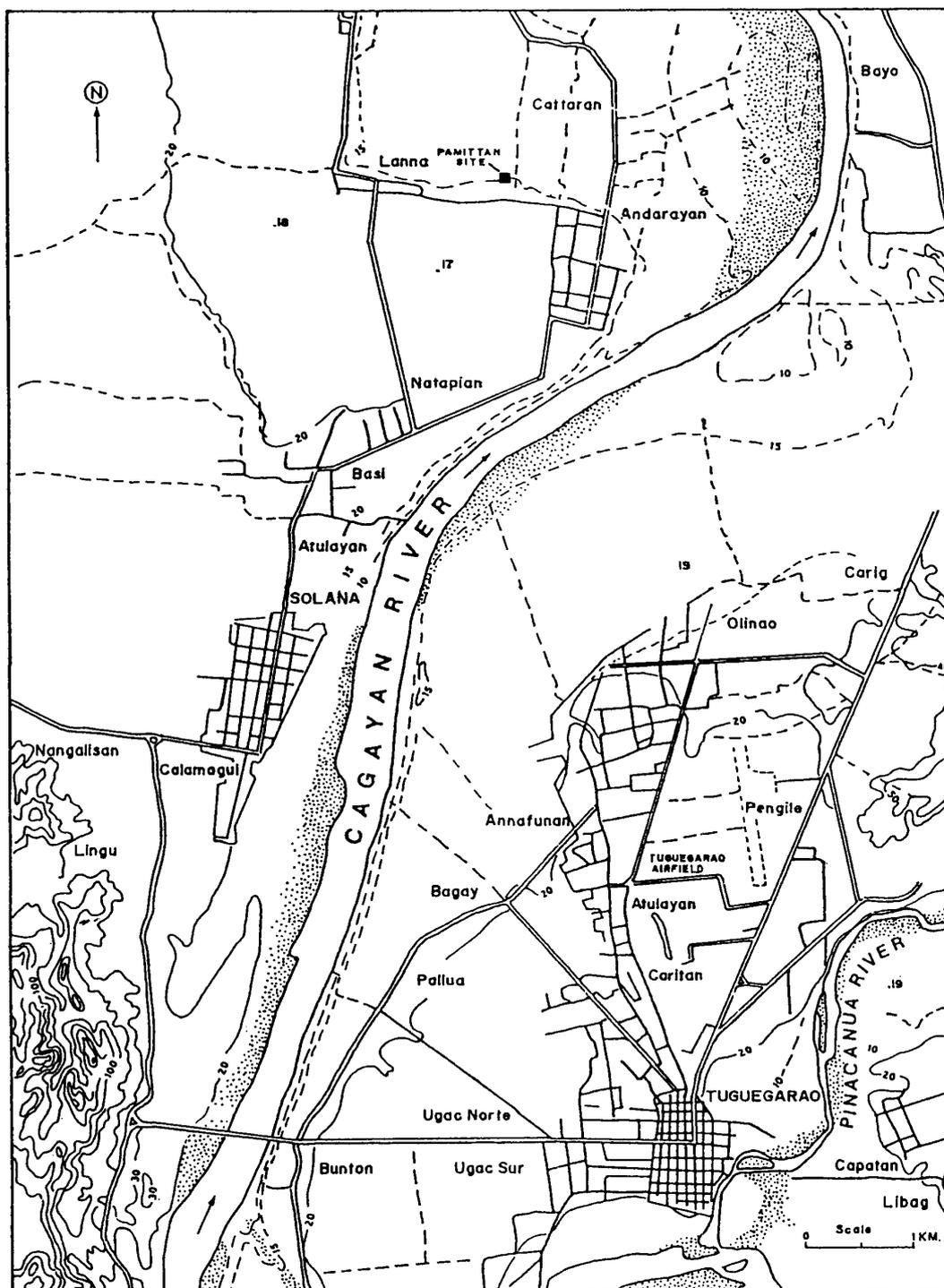
Mr. Yoji Aoyagi conducted the archaeological exploration and the surface collection in the Lanna site and the Nangalisan site in 1982 (Aoyagi 1983). The collected materials were well-documented. He collected earthenware sherds, clay disks, spindle whorls in Lanna site and earthenware sherds and two stone adzes with the trapezoidal cross-section in Nangalisan site (Aoyagi 1983). However, it was difficult to say about the association and the temporal relationship of artifacts because of the limitation of the surface collection.

Kazuhiko Tanaka and Miss. Amalia de la Torre conducted the archaeological exploration in the Lanna site, the Andarayan site and the Nangalisan site during the exploration of the middle reaches of the Cagayan River in November, 1993 (Tanaka and de la Torre 1995). And they conducted the test excavation in Lanna site in November, 1993 and found two cultural layers by the test excavation (de la Torre 1994).

IV. Lanna village

Lanna is one of the villages of Solana municipality in Cagayan province, northern Luzon. This village is located in the western side of the Cagayan

River (Fig. 2). The present settlements of Lanna and adjacent villages are situated along the contour line of 15 meters above the mean sea level. We saw that the flooded river reached the field in front of Lanna village in November, 1993. However,



Original map was made by Mr. Jose Santiago.

Fig. 2. Location Map of the Pamittan Site in Lanna and the surrounding area

er, the river did not reach the settlement itself at that time.

V. Location of the site

The Pamittan site in Barangay Lanna is situated 121° 41' 33" longitude east and 17° 41' 30" latitude north. It is approximately five kilometers north of Solana proper and about three kilometers west of the Cagayan River (Fig.2). The area is elevated about 15 meters above the mean sea level.

The site was named "Pamittan site" after the landowner, Mr. Jose Pamittan. This name was assigned by the National Museum archaeologists during the exploration and the test excavation in November, 1993.

The site, which gently slopes a few degrees towards the north, is planted to various grain products and root crops.

VI. Preparation for the excavation

The boundaries of the site, which covers a total area of about 26 meters by 86 meters, were established based on the description of the landowner. Due to the lack of a permanent natural feature in the area, the land property boundary marker or "mojon" was adopted as the primary reference point or datum point (D.P.) for this site (Fig. 3). The primary datum point will be the reference of all measurements, horizontal and vertical, that will be taken during the excavation activities

(Peralta, 1979).

The National Museum has assigned the code number II-1993-O as the official accession number for this particular site. This code number were used for all archaeological materials and features that has been encountered during the excavation activities.

From the primary datum point, criss-crossing grid lines oriented towards the four points of the compass were established. The grid lines were marked at two meters interval towards north-south and east-west directions forming a grid of two-meter square. Each square was assigned code numbers to facilitate the recording of the archaeological materials or features that might be encountered during the process of systematic excavation. The system of numbering the square was based on the *Field Manual in Archaeology* (Peralta 1979). The excavated one by one test pit made by Ms. de la Torre and Tanaka in November, 1993 was identified and indicated in the grid map of the site.

These excavation units bearing code number Sq.N59E2, Sq.N59E6 were selected for the excavations (Fig. 4).

VII. Method of the excavation

Each 2 x 2 meter square was divided into four quadrants marked A, B, C and D clockwise. The natural soil layer observed at the walls of the test pit was followed in the excavation. An arbitrary level of 10cm used for the vertical control of the

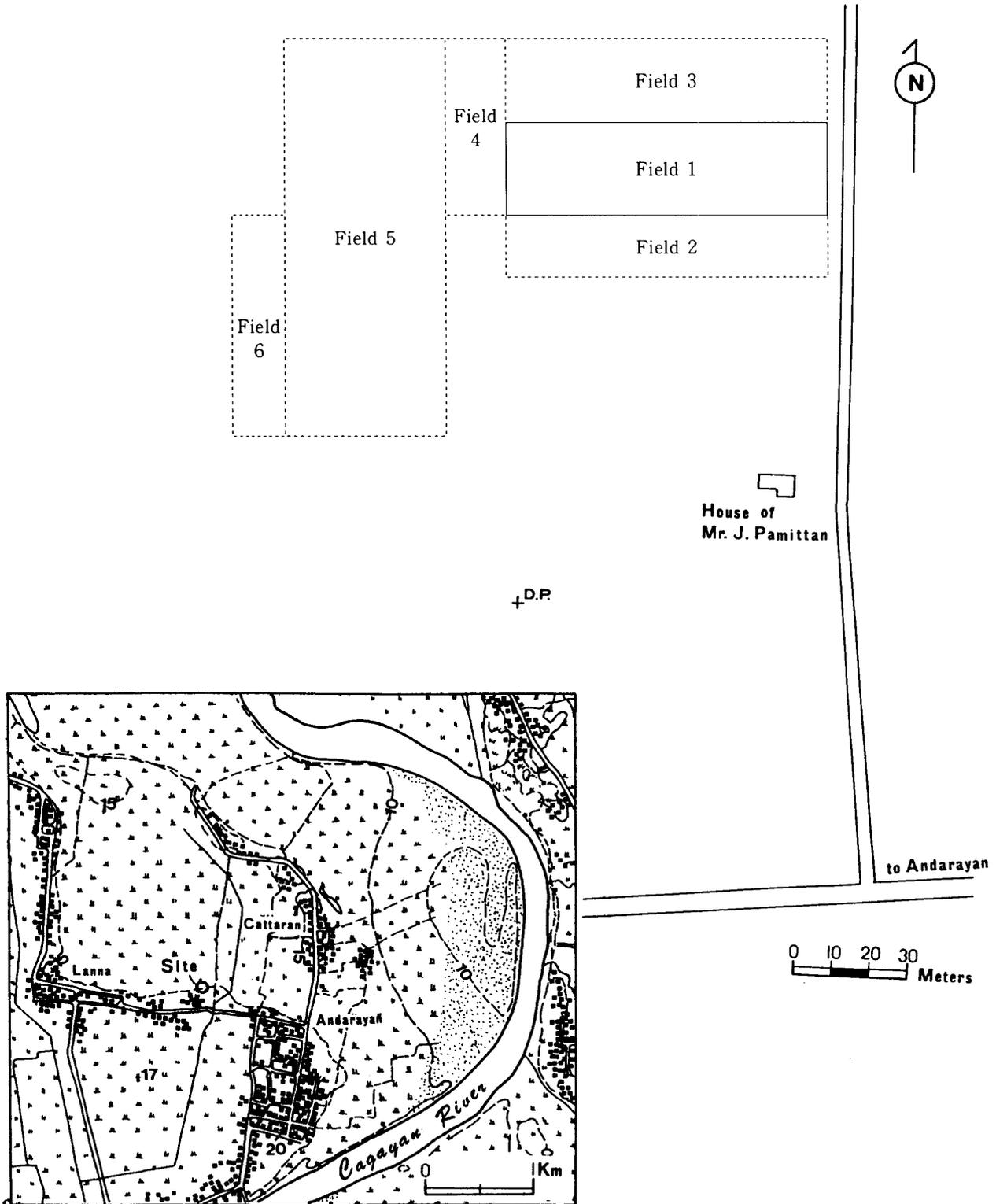


Fig. 3. Location Map of the Field (1~6) in the Pamittan Site in Lanna, Solana

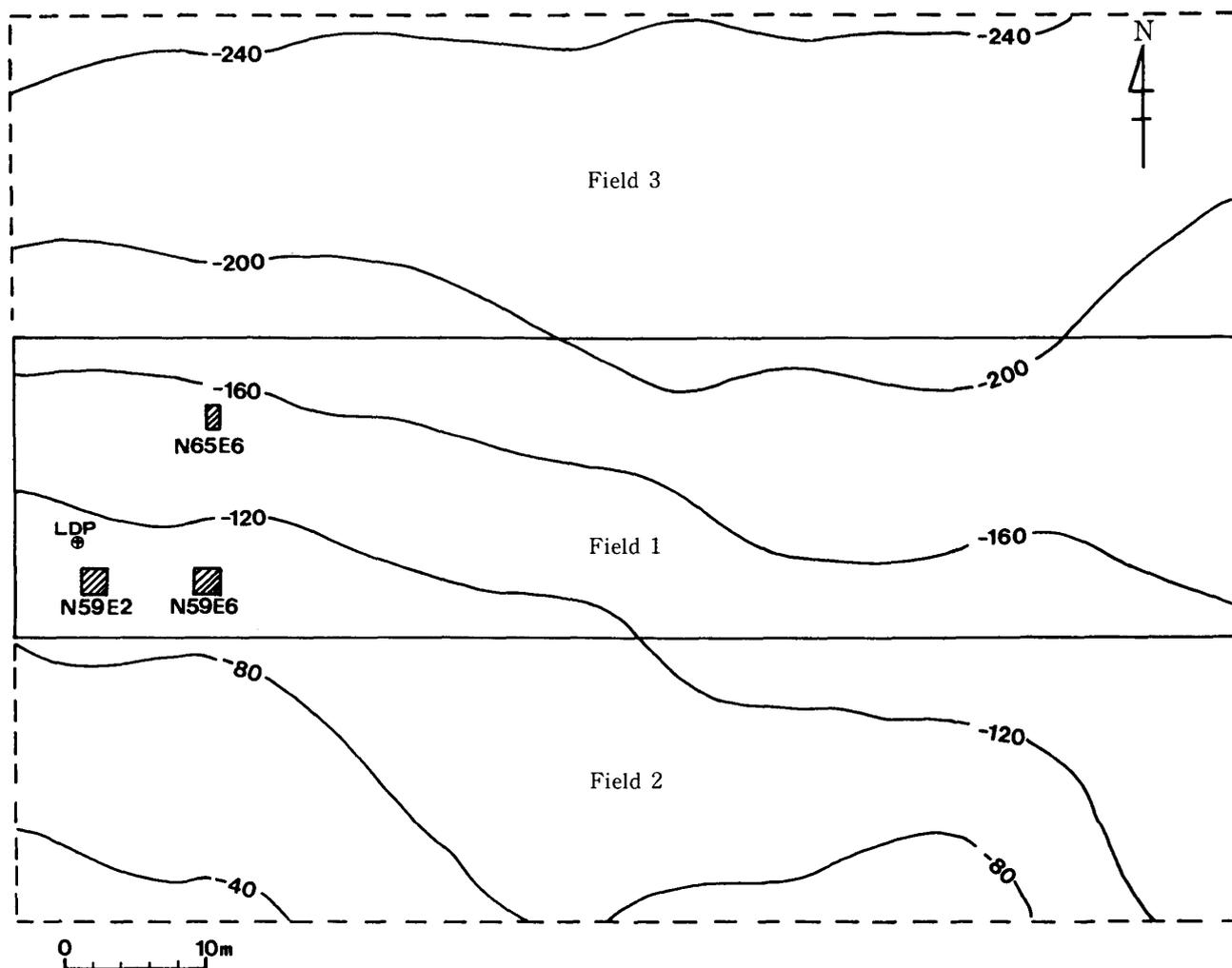


Fig. 4. Location Map of the Excavated Squares in the Pamittan Site

excavation within the same natural soil layer. The curved scrapers, mason trowel and multipurpose knife locally called "bolo" were used for the excavation. The loosened soil was sieved by using a 6mm-mesh screen which was set up near the excavation square.

The provenance of the exposed artifacts were recorded (i.e., the NS and EW location and its depth). After proper measurements and recording of observations, artifacts were retrieved and placed in plastic bags with the bagging slip with relevant information as to its provenance and other observations. The distribution maps of arti-

facts were made in the field.

VIII. Process of the excavation

Before the excavation, we accorded courtesy calls to Hon. Rudolfo Aguinaldo, the Governor of Cagayan province, Mr. Arnoldo C. Lingan, the mayor of Solana and Mr. Arenio Kusina, the barangay captain of Lanna on January 25, 1994. After the courtesy calls, the field research had started on January 26 and ended on February 12, 1994. Then, the laboratory works were conducted from January 13 to January 15, 1994. I would

like to summarize the process of the excavation as follows :

January 26 (Wed) : The grasses in the western portion of Field 1 were cleared. The datum point was found. And the back dirt of the test pit was removed.

January 27 (Thu) : Two excavation units measuring 2 by 2 meter square (Sq.N59E6) and 1 by 2 meter square (Sq. N65E6) were set up. The Sq.N59E6 contains 2/3 of the test pit. The artifacts scattered on the surface of the square were collected. The excavation of Layer I was started. A broken spindle whorl with the design of dots was found in Sq.N65E6.

January 28 (Fri) : The excavation of Layer I was finished in Sq.N59E6. The excavation of Layer II was started in Sq.N59E6. A broken stone adze was found in Sq. N59E6. Mr. Lorito Soliano collected a perforated stone adze on the surface in Field 5.

January 31 (Mon) : Another 2 by 2 meter square (Sq.N59E2) was set up for the excavation. The tempo of the excavation was so slow because of the hardness of the soil.

February 1 (Tue) : The excavation of Layer III was started in Sq.N59E6. It was recognized that the soil under 30cm from the surface was lighter than the color of the upper soil.

February 2 (Wed) : An earthenware sherd of a shallow bowl with a handle was found at the top of Layer II in Sq. N59E2. Two fragments of animal teeth were found at the Depth of -51cm from the surface in Sq.N59E6. Mr. Ronquillo, Dr.

Dizon and their students, Mr. Victor Paz and Miss. Owis Bolunia arrived in Cagayan from Manila to visit our site and briefly participate in the excavation.

February 4 (Fri) : The profile of Feature 5 in Sq. N59E6 were measured.

February 5 (Sat) : We visited and stayed overnight at the field station in Peñablanca with Mr. Ronquillo, Dr. Dizon and their students.

February 6 (Sun) : Mr. Ronquillo, Dr. Dizon and their students left back to Manila. We went back to Tugegarao.

February 7 (Mon) : It was foggy in the early morning. The excavation was continued in each square.

February 8 (Tue) : It was also foggy in the early morning. The excavation in Sq.N65E6 reached at the depth of -100cm from the surface.

February 9 (Wed) : It was recognized that small pieces of fired clay were scattered mainly on the southern portion of Sq.N65E6.

February 10 (Thu) : Two decorated earthenware sherds were found at the depth of -140cm from the surface in Sq.N65E6. Many small pieces of fired clay were scattered at the same level.

February 11 (Fri) : The profiles of four walls of Sq.N65E6 were measured. And the photographs of four walls of Sq.N65E6 were taken. And the soil samples of each layer were collected from the wall.

February 12 (Sat) : The profiles of four walls of Sq.N59E2 and N59E6 were measured. And the photographs of four walls of Sq.N59E2 and

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N59E6 were taken. The excavation of all squares were stopped due to the time constraint. The large plastic bags were spread on the bottom of the each square. Then each square was backfilled with soil.

IX. The stratification of the site

(Fig. 5)

The depth of three excavated squares are as follows : Sq.N59E2 is 23 to 27cm deep from the surface at the south wall. Sq.N59E6 is 56 to 57cm deep from the surface at the north wall and 57 to 58cm from surface at the south wall. Sq.N65E6 is 116 to 118cm deep from the surface at the north wall and 129cm to 133cm from the surface at the south wall.

Four layers (Layer I to Layer IV) were recognized in Sq.N65E6 which is the deepest of three squares. Meanwhile, only three layers (Layer I to Layer III) were recognized at Sq.N59E2 and Sq.N59E6. Those three layers are assumed to be identical. So four layers in Sq.N65E6 are described on the basis of the observation of the soil stratification as the typical stratification as follows :

Layer I : A dark brown (7.5YR3/3) soil

It is disturbed since the field is seasonally cultivated for agricultural purposes. Small ditches for planting crops remain on the surface of this layer. So the surface of this layer

is uneven. The compactness is relatively loose and the plasticity is relatively low. This layer contains many earthenware sherds, several broken spindle whorls and a few pieces of broken polished stone adzes.

Layer II : A brownish black (7.5YR 3/1) soil

It is very hard and compact. The plasticity of the soil is very high. So the difference of the Layer I and Layer II is easily recognized. This layer also contains many earthenware sherds.

Layer III : A dull yellowish brown (10YR4/3) soil

The color of the soil was light yellowish brown, when it was exposed. Then it turned to dull yellowish brown by and by after it was exposed to the air. The difference of Layer II and Layer III is easily recognized on the basis of the difference of the color of the soil. The soil is also very hard and compact like the soil of Layer II . And the percentage of plasticity of the soil is also high like the soil of Layer II . But this layer contains many white minute particles.

This layer inclines downward from the north to the south at about 4 degrees from the top of the soil.

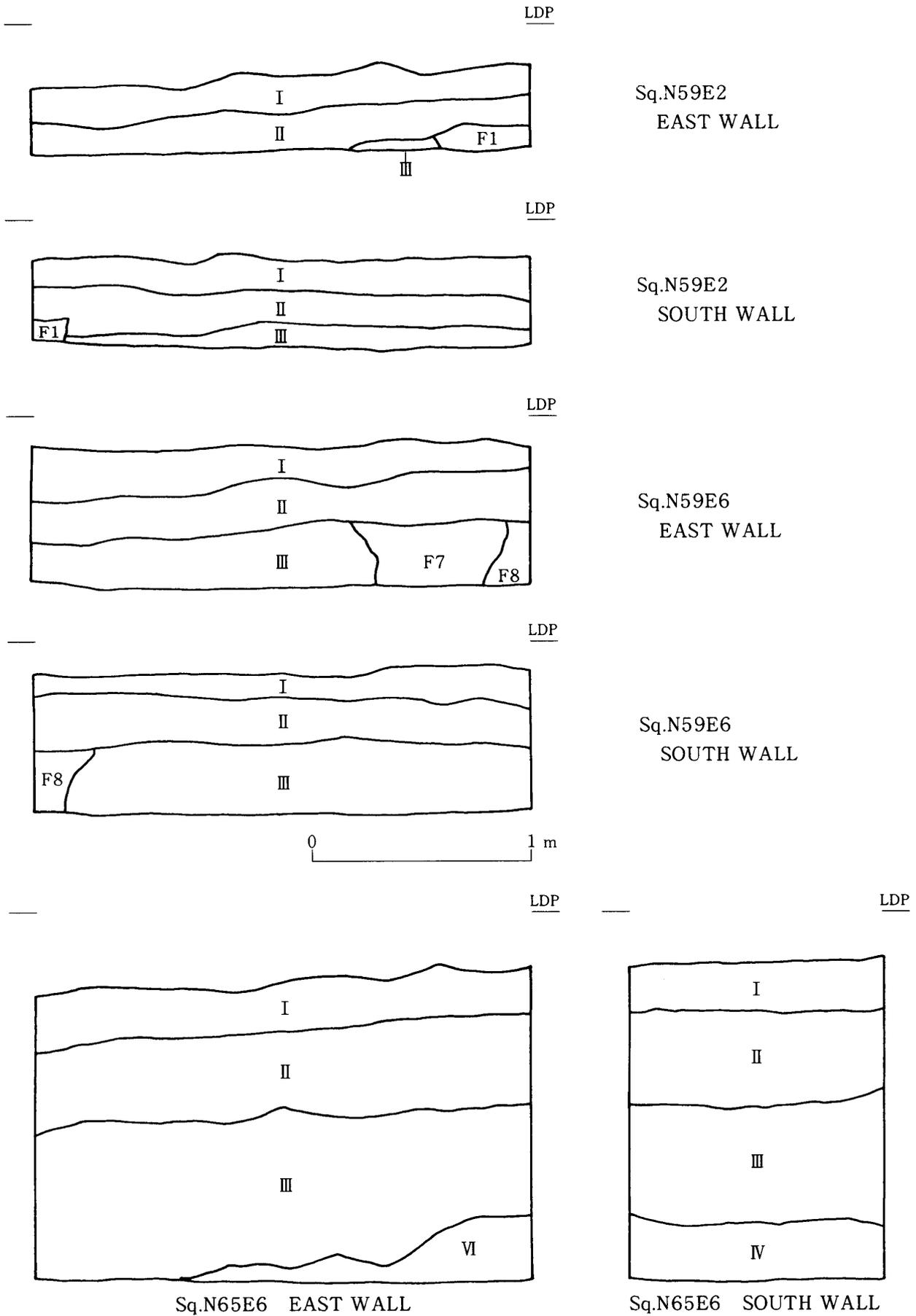


Fig. 5. Soil Profiles of the Excavated Squares in the Pamittan Site

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Layer IV : A dull yellowish brown (10YR4/3) soil

The color, the compactness and the plasticity of the soil is identical to those of Layer III. However, Layer IV contains many small burnt red brown clay particles which Layer III doesn't contain. The layer inclines downward at 14 to 15 degrees from the north to the south at the top of the layer. The excavation of the square was not yet reached the bottom of this layer. The burnt clay particles were sparsely distributed as speckles in this layer.

Several causes were considered for the burnt clay particles found in Layer IV to be made. We just would like to mention three hypotheses at this moment for the future research.

The first hypothesis is that those burnt clay particles were made by the activities of the pottery making like the burning of the pottery. The second hypothesis is that probably these were made by firing activities like using the hearth. The third hypothesis is that these were maybe made by the farmers the slash-and-burning activities. Since the burnt clay particles don't densely concentrate but sparsely distributed like speckles, those were probably deposited secondarily in the layer in all cases.

X. C14 dating

Ten charcoal samples were found during the excavation. Five charcoal samples were found in Sq.N59E6 and the other five were found in Sq.N65E6.

As the prerequisite amount of the charcoal for the ordinary C14 dating is more than 10g, the specimens with the amount of more than 10g were selected. The amount of the charcoal samples found in Layer III and Layer IV in sq. N65E6 were less than 10g. So two samples found in Sq.N59E6 were selected for C14 dating.

One sample is the charcoal fragment with the accession No. II -93-O-8364 excavated at the lower level of Layer II. The other is also the charcoal fragment with the accession No. II -93-O-8688 excavated at the level of - 71 cm from the local datum point in Layer III.

The C14 date of the charcoal sample found in Layer II (Gak-17967) is 3390 ± 100 B. P. (1440 B. C.)

The C14 date of the charcoal sample found in Layer III (Gak-17968) is 3810 ± 200 B. P. (1860 B. C.)

XI. Features (Fig. 6)

Ten features including the suspected features were found. Four features were found in Sq.N59E2 and six features were found in Sq.N59E6. Stratigraphically, one feature was found in Layer II in Sq.N59E2 and also one feature was found in Layer II in Sq.N59E6. Three features were found in Layer III Sq.N59E2 and other five features were found in Layer III in Sq.N59E6. These features are described by the square and the layer.

(1) Sq.N59E2

a) Layer II

Feature 1 (F1) :

This feature was found at the southeast corner in Quadrant B (south-eastern quadrant) in Layer II. It was exposed only at the north-western portion because the rest portion extends beyond the square. The size of the exposed portion is 35cm long from the north to the south and 18cm wide from the east to west. The color of the soil is dark brown (7.5YR 3/4). And the soil contains charcoal fragments and small earthenware sherds. The earthenware sherds concentrated on the surface of the feature. The extent of the distribution was measured and the artifacts were collected. The feature was excavated to the upper part of Layer III.

b) Layer III

Feature 2 (F2) :

This feature was found at the Quadrant D (north-western quadrant) on the top of Layer III. It has a deformed round shape, although the western portion of it extends beyond the square. The size of the exposed portion in the square is 32cm long from the north to the south and 28cm wide from the east to the west. The color of the soil is dull yellowish brown (10YR 3/3). The soil contains charcoal fragments and small earthenware sherds.

Feature 3 (F3) :

This feature was found at the boundary between Quadrant A (north-eastern quadrant) and Quadrant D on the top of Layer III. It has a deformed round shape at the plane. The size of it is measured about 35cm long from the north to the south and 31cm wide from the east to the west. The color of the soil is dull yellowish brown (10YR 3/3).

Feature 4 (F4) :

This feature was found at the boundary between Quadrant A and Quadrant B on the top of Layer III. It has a deformed round shape at the plane. The size of it is 18cm in diameter. The color of the soil is brown (10YR 3/3).

All three features found on the top of Layer III were not yet excavated because the excavation in this square was stopped at the upper part of Layer III.

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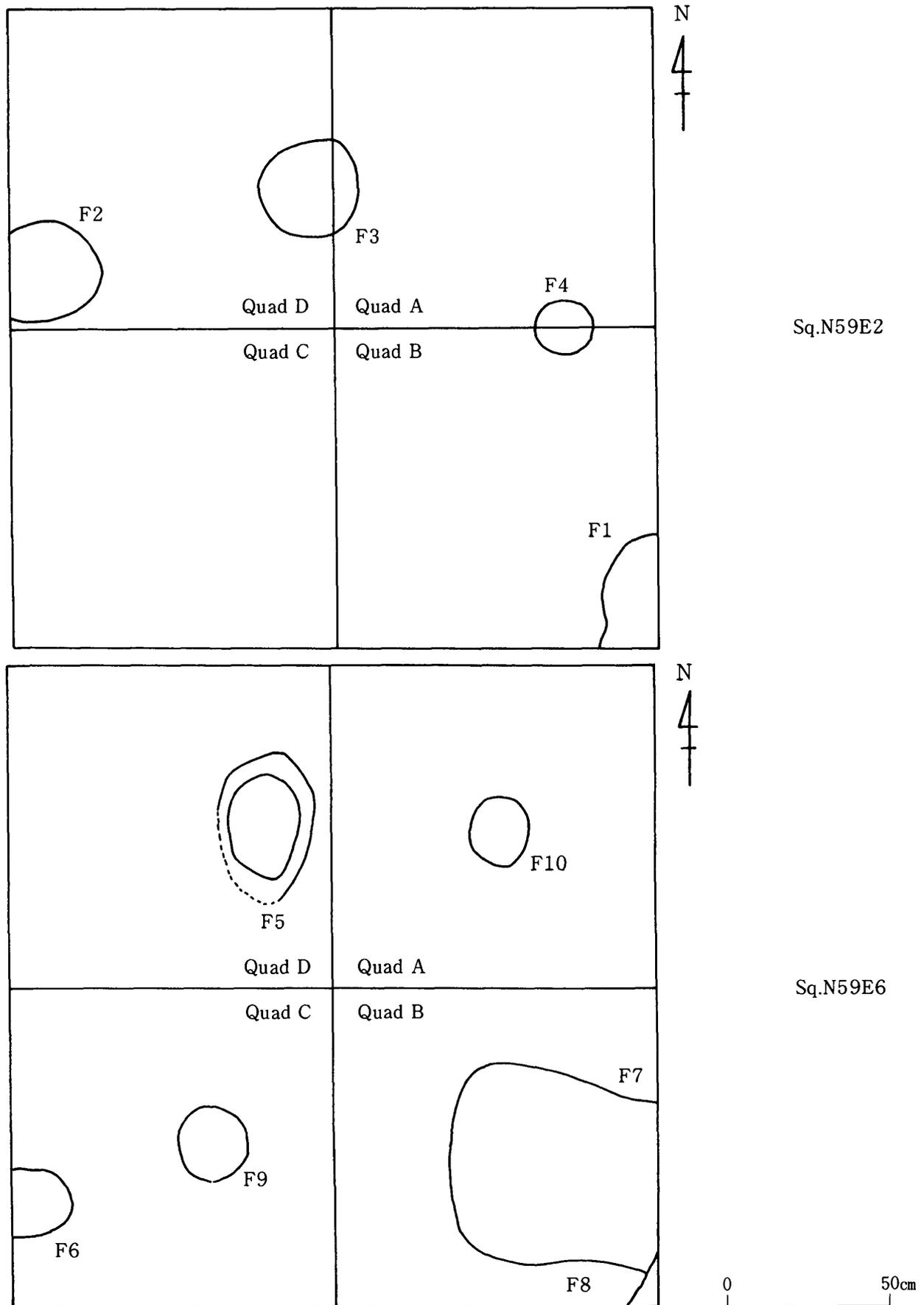


Fig. 6. Distribution Map of Features in Sq N59E2 and Sq N59E6 in the Pamittan Site

(2) Sq.N59E6

a) Layer II

Feature 5 (F5) :

This feature was recognized at the eastern part of the Quadrant D in Layer II. It was first found in 1 by 1 test pit during the test excavation. Only south-western quarter of the feature was excavated during the test excavation in November, 1993. It has an elliptical shape at the plane. The size of it is 46cm in length from the north to the south and 30cm wide from the east to the west. The soil profile was composed of two layers; the upper layer and the lower layer. The color of the soil of the upper layer is dark brown (10YR 2/2). It contains many earthenware sherds. It is 12 to 16 cm thick. Meanwhile, the color of lower layer is dark brown (10YR 2/3). It contains the yellowish brown loam blocks and the earthenware sherds. It is 25cm thick at the thickest point. And the depth of the feature is about 40cm at the deepest point. The shape of the bottom is not flat. Soil sample was collected for analysis.

b) Layer III

Feature 6 (F6) :

This feature was found at the western part of the Quadrant C (south-western quadrant) on the top of Layer III. The western portion of it extends beyond the square. It has an elliptical shape at the plane. The size of the exposed area is 22cm long from the north to the south and 19cm wide from the east to the west. The color of the soil is dark

brown (10YR 3/4). The depth of the feature is 16cm. The bottom of the feature is not flat.

Feature 7 (F7) :

This feature is found in Quadrant B. It was difficult to distinguish the outline of this feature from the top of Layer II. Because the soil of it contains the yellowish brown loam blocks. So the outline was recognized only in the middle of Layer II. The eastern portion of it extends beyond the square. The small portion of the southern part was cut by Feature 8 (F8). The size of the exposed part is 62 to 64cm long from the east to the west and 53 to 62cm wide from the north to the south. The color of the soil is dark brown (10YR 3/3). The soil contains the yellowish brown loam blocks at the mixing rate of about 40%. It contains many earthenware sherds. It was excavated to the depth of 26cm from the top of Layer III.

Feature 8 (F8) :

This feature was also found in Quadrant B. The outline of this feature is recognized in the middle of Layer III like feature 7. However, the soil profile of the east wall of this square reveals that this feature was also dug up from the top of Layer III. The shape and the size of it is unknown. Because the only small portion of it was exposed in this square. And the rest of it extends beyond the square. The color of the soil is dark brown (10YR 2/2). It was excavated to the depth of 26cm from the top of Layer III.

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Feature 9 (F9) :

This feature was found in Quadrant C in Layer III. It has a round shape and about 21cm in diameter. The color of the soil is dark brown. This feature was not yet excavated but only measured the outline at the plane.

Feature 10 (F10) :

This feature was found at the center of Quadrant A in Layer III. It has an elliptical shape. The size of it is 22cm long from the north to the south and 18cm wide from the east to west. The color of the soil is dark brown (10YR 4/3). The soil contains minute charcoal fragments and earthenware sherds. This feature was also yet excavated but only measured the outline at the plane.

F5 and F6 were excavated and F7 and F8 were excavated to the middle of Layer III and F9 and F10 were not excavated. Because the excavation of this square was stopped at the middle part of Layer III.

XII. Artifacts

As mentioned above, three squares were excavated in this site. 13,495 pieces of archaeological materials were found in these three squares. These are composed of 13,264 pieces of earthenware sherds (including 25 sherds with designs or a perforation), 2 pieces of the spindle whorls, 8 pieces of clay ornaments, 2 pieces of flakes, 2 pieces of fragments of stone adzes, 1 piece of a

petrified wood, 2 pieces of andesite chunks, 30 pieces of extraneous stones, 2 pieces of animal teeth, 2 pieces of animal bones and 17 pieces of charcoal fragments.

In addition, the survey was conducted in three other field (Field 4, 5, 6) in Lanna which are parts of the Lanna site. Several archaeological materials were collected on the surface of the ground in these fields. These are 3 pieces of earthenware sherds, 1 piece of clay ornament, 1 piece of clay ball, 1 piece of fired clay lumps, 3 pieces of fragment of stone adzes, 1 piece of chert flake, 1 piece of andesite flake, 1 piece of a fragment of the petrified wood, 3 pieces of extraneous stones.

The summary of the excavated archaeological materials by square and also by layer are the following.

(1) Number of artifacts by kind, by square and by layer

(a) Sq.N59E2

Surface :

127 pieces of the earthenware sherds and 1 piece of the fragment of the fired clay lump were found on the surface of the square.

Layer 1 :

3,004 pieces of the earthenware sherds, 1 piece of the fragment of the clay spindle whorl, 1 piece of a fragment of a clay ornament, 15 pieces of fragments of the fired clay lump, 1 piece of a chert flake and 3 pieces of

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extraneous stones were found in Layer I .

Layer II :

416 pieces of the earthenware sherds were found in Layer II .

Layer III :

24 pieces of the earthenware sherds and 1 piece of an andesite flake were found in Layer III .

Feature 1 :

31 pieces of the earthenware sherds were found in feature 1.

Feature 2 :

32 pieces of the earthenware sherds were found in feature 2.

Feature 3 :

16 pieces of the earthenware sherds were found in feature 3.

(b) Sq.N59E6

Surface :

61 pieces of the earthenware sherds were found on the surface of the square.

Layer I :

2,679 pieces of the earthenware sherds, 1 piece of the clay disk and 1 piece of a fragment of a clay ornament, 20 pieces of the fired clay lumps, 9 pieces of chert flakes, 1 piece of a fragment of a stone adze, 13 pieces of extraneous stones and 1 piece of a fragment of the animal bone were found in Layer I .

Layer II :

327 pieces of the earthenware sherds, 6

pieces of the fired clay lumps and 5 pieces of the charcoal samples were found in Layer II .

Layer III :

51 pieces of the earthenware sherds and 2 pieces of flakes were found in Layer III .

Feature 5 :

2 pieces of the charcoal samples were found in Feature 5.

Feature 7 :

128 pieces of the earthenware sherds, 2 pieces of the charcoal samples were found in Feature 7.

Feature 8 :

2 pieces of the earthenware sherds were found in Feature 8.

Feature 9 :

4 pieces of the earthenware sherds and 1 piece of the charcoal sample were found in Feature 9.

(c) Sq.N65E6

Surface :

1 piece of a chert flake and 325 pieces of the earthenware sherds were found on the surface of the square.

Layer I :

1 piece of a clay ornament and 3,271 pieces of the earthenware sherds, 44 pieces of the fired clay lumps, 5 pieces of chert flakes, 3 pieces of andesite flakes and 8 pieces of extraneous stones were found.

Layer II :

1 piece of a clay ornament, 1,289 pieces of

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earthenware sherds, 1 piece of a clay disk, 10 pieces of the fired clay lumps, 1 piece of chert flakes, 1 piece of an andesite cobble, 1 piece of an extraneous stones, 2 pieces of animal teeth and 1 piece of the charcoal sample were found in Layer II.

Layer II or III :

2 pieces of the clay ornaments and 523 pieces of the earthenware sherds were found in Layer II or III.

Layer III :

1 piece of the clay ornament, 712 pieces of the earthenware sherds, 6 pieces of the fired clay lumps, 1 piece of a petrified wood, 3 pieces of extraneous stones, 1 piece of a fragment of animal tooth and 1 piece of the charcoal sample were found in Layer III.

Layer IV :

30 pieces of the fired clay lumps and 1 piece of the charcoal fragment were found in Layer IV.

Field 4, Field 5 and Field 7

Archaeological materials were also collected on the surface of the ground in Field 4, 5 and 7.

Field 4 :

1 piece of the earthenware sherd was collected on the surface of the ground.

Field 5 :

2 pieces of fragments of stone adzes were collected on the surface of the ground.

Field 7 :

2 pieces of fragments of stone adzes, 1 piece of a clay ornament, 1 piece of a clay ball, 1

piece of the fired clay lump, 1 piece of an andesite flake, 1 piece of the petrified wood and 3 pieces of extraneous stones collected on the surface of the ground.

(2) Clay ornaments and decorated earthenware sherds (Fig. 7)

A detailed analysis of the earthenware sherds and other materials would be written in another paper. I would like to deal with only several clay ornaments and decorated earthenware sherds in this paper.

First, I would like to talk about three clay ornaments (Fig. 7-1-3) from the Pamittan site. These are all broken parts of clay pendants or earrings. Morphologically, these are divided into two groups : two with a flattened cross section (Fig. 7-1 and 2) . one with a round cross-section (Fig.7-3) . The two which belong to the first group are divided into two sub-groups on the basis of the presence and the absence of the decoration. Sub-group 1 is the clay pendant without decoration and with a flattened cross-section. Sub-group 2 is a decorated clay pendant with a flattened cross-section. The decoration is composed of two or three rows of dots (Fig. 7-2).

Meanwhile, the Magapit shell-midden site in the lower reaches of the Cagayan River revealed many clay pendants (Aoyagi, Ogawa and Tanaka 1997 : Fig. 6 and Fig. 7) . These were classified into clay pendants without a hole and clay pendants with a hole. All clay pendants without a

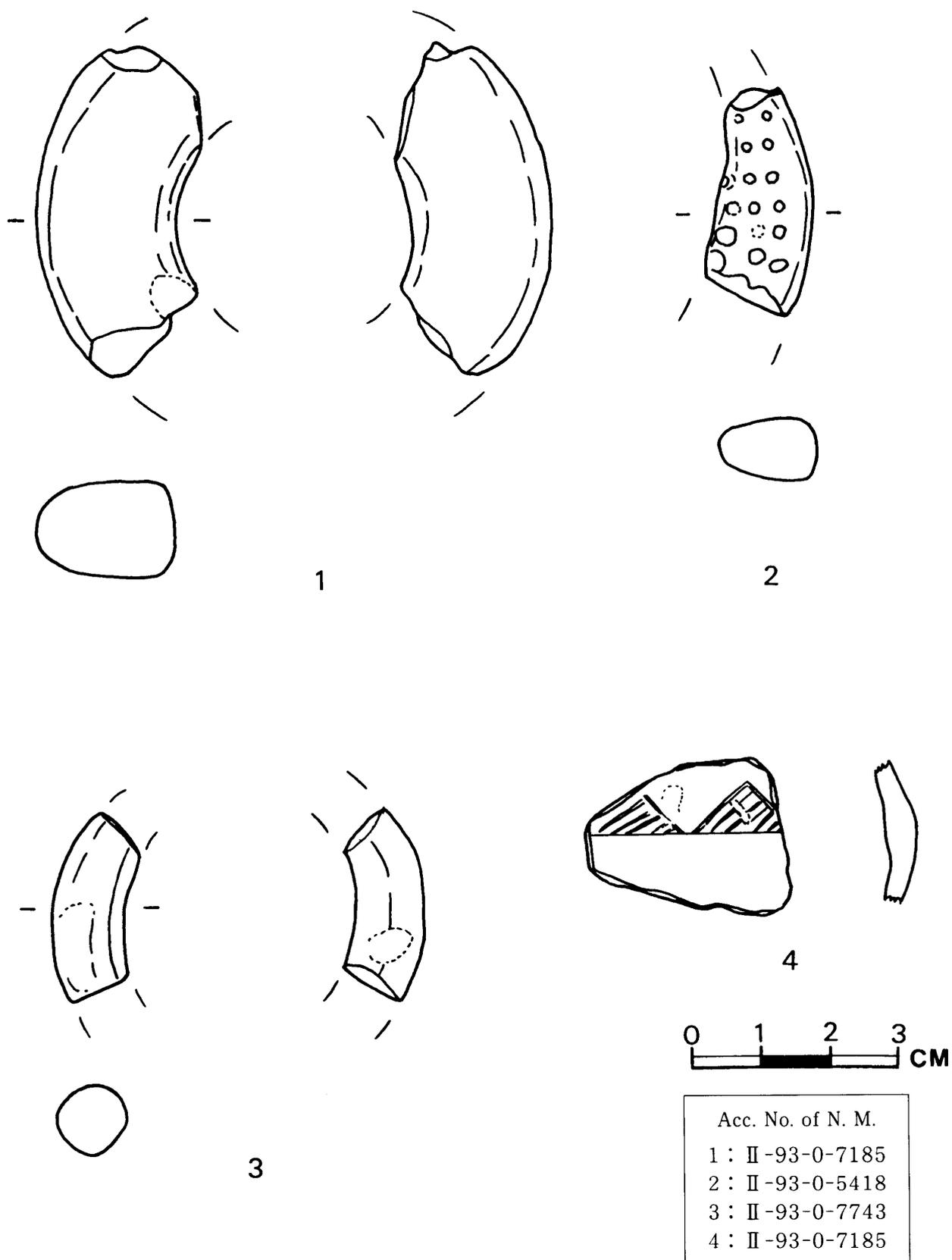


Fig. 7. Clay ornaments (1 & 2) found in Layer I, a clay ornament (3) and an earthenware sherd with decorations (4) found in Layer Ⅲ

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hole found in the Magapit shell-midden site have no decoration. Those were classified on the basis of the cross-sections of the side and the lower portion.

Unfortunately, clay pendants found in the Pamittan site lack the lower portions. So I would like to compare the clay pendants from the Pamittan site with those from the Magapit shell-midden site only on the basis of the form at the top view and the cross-section of the side. One of the clay pendants found in the Pamittan site shown in Fig. 7-1 is morphologically similar to a portion of one of the clay pendants found in the Magapit shell-midden site (Aoyagi, Ogawa and Tanaka 1997 : Fig. 6-4). And another clay pendant found in the Pamittan site shown in Fig. 7-3 is similar to another clay pendant found in the Magapit shell-midden site which suggests that the people of both sites had the same type of ornamental tradition.

Meanwhile, the decorated earthenware sherd in Fig. 7-4 was found at the depth of -61-70cm from the surface in Layer III in Sq. N65E6 at the Pamittan site. This is a part of the carinated ware. The ware has the carination at the body part. The thickness of the sherd is very thin at about 3mm, although the carinated portion is a little bit thicker at about 5mm. The design was incised on the upper part of the carination. The incision is very shallow and probably lime inlaid, although the sherd is weathered. The element of the design is the continuous triangles. Parallel inclined short lines were incised inside of each triangle. The

direction of the inclined line are from the upper right to the lower left.

The design of triangles at the carination is also found in several sherds excavated in the Magapit shell-midden site. There are two elements of the design which composed triangles. One is the short incised line (Aoyagi et al 1991 : Fig. 11-12). The other is the punctures (Aoyagi et al 1991 : Fig. 11-9). But the insides of triangles are decorated not by incised lines but by punctures in both types of triangles. So the forms of triangles at the carination are found both on the sherds from the Pamittan site and on the sherds from the Magapit shell-midden site. But the elements of the design are different between them. These facts suggest that the decorated sherd from the Pamittan site shown in Fig. 7-4 is chronologically different from the sherds from the Magapit shell-midden site. C14 dates from both sites strengthen this hypothesis.⁽¹⁾

XIII. Concluding remarks

The excavation of the Pamittan site, Lanna, Solana revealed three cultural layer (Layer II to Layer IV). Charcoal samples from Layer II and Layer III gave C14 dates for each layer: Layer II is dated at 3390 ± 100 B.P. and Layer III is 3810 ± 200 B.P. The C14 date of 3390 ± 100 B.P. is near the C14 date of the Andarayan site of 3400 ± 125 B.P.

Some of clay pendants found in the Pamittan site showed some identical characteristics with

the clay pendants found in the Magapit shell-midden site. This means that the people of both site had the same type of ornamental tradition.

Meanwhile, although the form of the design of the decorated sherd (Fig. 7-4) found in Layer III in the Pamittan site is similar to some pieces of decorated sherds of the Magapit shell-midden site, one element of the design is different from the decorated sherds found in the Magapit shell-midden site. This fact suggests chronological difference.

XV. Note

1 : C14 dates of the Magapit shell-midden site are 2800 ± 140 B.P. (Spit 9) and 2760 ± 125 B.P. (Spit 20).

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A : Field 1 of the Pamittan site
(from the west)



B : Mapping



C : Excavation

Pl. 1 : Pamittan site and research scenes in the site

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A : Measurement in Sq.N59E6

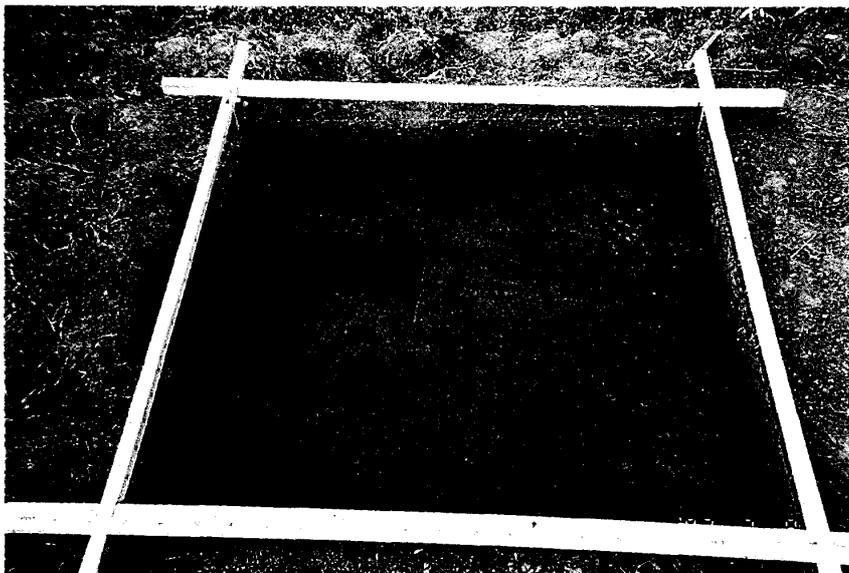


B : Taking refreshments in the open space at the side of the house of Mr. Pamittan



C : Members of the research team

Pl. 2 : Research scenes in the Pamittan site



A : Overview of Sq.N59E6 after the excavation of Layer I



B : South wall of Sq.N59E6



C : South wall of Sq.N65E6

Pl. 3 : Overview of Sq.N59E6 and walls of Sq.N59E6, Sq.N65E6