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RICHARD J. PEARSON

ARCHAEOLOGY OF THE RYUKYU ISLANDS

A REGIONAL CHRONOLOGY
FROM 3000 B.C. TO THE
HISTORIC PERIOD

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3000 B.C. to the Historic Period**

Richard J. Pearson

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*The kingdom of Ryukyu is a place of beauty in the Southern
Ocean,
Gathered here are the treasures of the three countries, Korea,
the Great Ming, and Japan,
It is a treasure island which emerged from the sea between
China and Japan,
Its ships ply between ten thousand countries, and it is filled with
wondrous things which are to be seen everywhere.*

INSCRIPTION ON A BELL CAST FOR SHURI CASTLE IN 1458, TRANSLATED FROM RYUKYU SEIFU HAKUBUTSUKAN 1964:ITEM 69.

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Preface

The fieldwork for this study of Ryukyuan culture history was carried out from November 1962 to June 1963, under the auspices of the Canada Council and the Augusta Hazard Fund of Yale University, and in the summer of 1965, under the auspices of a grant from the National Science Foundation to Dr. K. C. Chang of Yale University. Following the field season of 1963, I visited museums in Japan and Southeast Asia in order to become acquainted with the comparative materials. The library research and final writing began in October 1965 and extended into the summer of 1966; at that time I was the recipient of a Yale Wilson Fellowship.

The expenses of the radiocarbon determinations and certain research costs were defrayed by a grant from the East Asia Council of Yale University, and a further grant from the Department of Anthropology at Yale covered the cost of the initial preparation of the photographs. For meeting the cost of shipping the archaeological specimens from Okinawa to Yale, I am grateful to the Yale Peabody Museum and Dr. C. Osgood. The artifacts are now part of the collections of the Peabody Museum.

The initial research plan was formulated with the assistance of Mr. G. H. Kerr, formerly of the Honolulu Academy of Arts; and during the first field season, I was a research associate of the Academy. Various drafts of the text were read and commented upon by Dr. K. C. Chang and Dr. C. Osgood. Mr. Eiki Miyazato, Mr. Shinjun Tawada, and Mr. Hiroe Takamiya of the Commission for the Protection of Cultural Assets of the Ryukyu Islands facilitated the fieldwork arrangements.

My thanks are due to the following people for aid in various aspects of the research; Dr. G. Eckholm and Dr. J. Bird, Department of Anthropology, American Museum of Natural History; Dr. M. Stuiver, Yale Radiocarbon Laboratory; Dr. S. Sakamaki, Mr. Mitsugu Sakihara, and Dr. W. Lebra, University

Preface

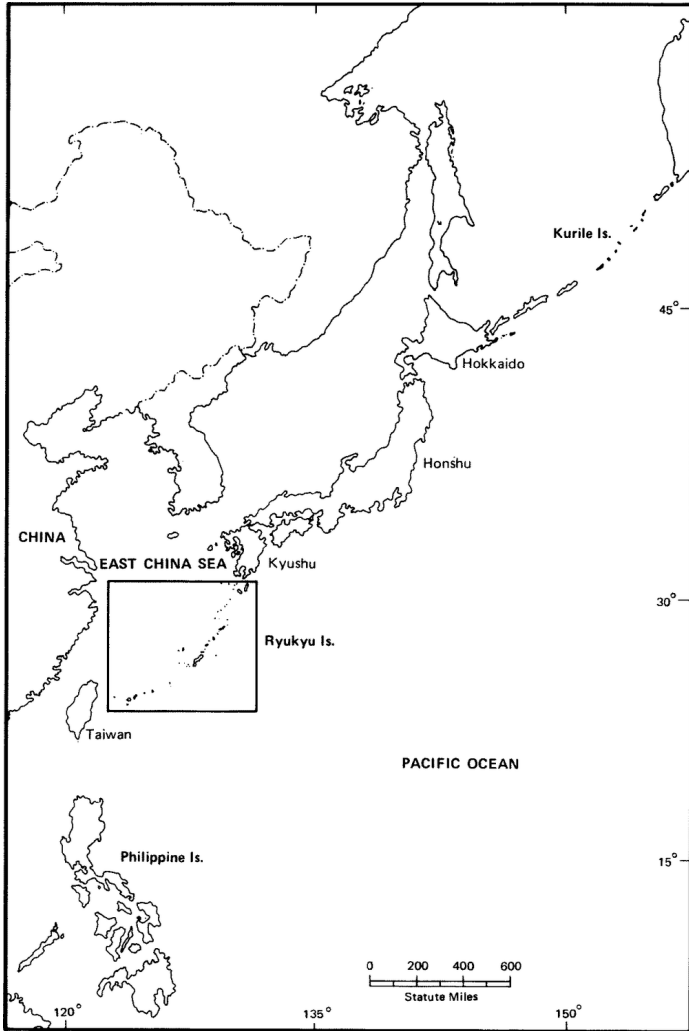
of Hawaii; Dr. J. Pope, Freer Gallery, Washington; Dr. Y. Kondo and Dr. A. Kay, Bishop Museum; Dr. Tokiharu Abe, University of Tokyo; Dr. W. Moss, Yale University; Mr. Sadanori Kawaguchi, Gyoku Ryū High School, Kagoshima; Mr. Shigeharu Tsuzuki, Miyazaki High School; Professor Mitsuo Kagawa, University of Beppu; Professor Kazuchika Komai, University of Tokyo; Professors Hiroe Takiguchi and Asahitaro Nishimura, Waseda University; Dr. Kyōichi Arimitsu and Mr. Naomichi Ishige, University of Kyoto; Dr. Naoichi Kokubu, Tokyo College of Education; Dr. Takeo Kanaseki, Tenri University; Professors Masafumi Nagai and Tadashi Okazaki, University of Kyushu; Mr. Naotaka Morizono, Nakatane High School, Tanegashima; Mr. Fumitake Yamashita, Amami Oshima; Mr. Kōji Onaga, Mr. Haruki Uehara, and Mr. Seitoku Ōshiro, Okinawa; and Mr. Takahiro Miyara, Sapporo University.

Plans for the Taiwan east coast survey and excavations were formulated on the basis of a recent survey by Professor W. H. Sung, Department of Archaeology and Anthropology, National Taiwan University, and Mme. I. de Beauclair, Institute of Ethnology, Academia Sinica. To Mr. C. M. Hsu, Mr. J. Kress, and the students of National Taiwan University, I offer thanks for assistance rendered during the T'ai Yuan excavations.

Mr. Yung Chen of Taipei, in his free time during the summer of 1964, did the initial printing of all my field photographs.

Throughout this work, macrons over letters, indicating long vowels, have been omitted from well-known Japanese and Ryukyuan names.

Archaeology of the Ryukyu Islands



Map 1 *The Ryukyus, Asia, and the Pacific*

Introduction

BACKGROUND

This study is a discussion of the culture history as seen from archaeology of the Ryukyu Islands, which form the geographical boundary between the East China Sea and the Pacific Ocean, extending from South Japan to Taiwan. The Ryukyus constitute an important yet poorly known link in the island chain flanking East Asia, and their culture history is of interest to scholars concerned with Taiwan, China, and Southeast Asia as well as Japan. The scope in time with which we are concerned is a broad one, from the third millennium B.C. to about 1700 A.D., when the Ryukyus lost much of their political and cultural independence, falling under the shadow of Japan.

The purpose of this study is to present a synthesis of the archaeological materials from the Ryukyus in the form of a chronology consisting of sites and phases. The two terminal areas in the Ryukyu chain, southern Kyushu and eastern Taiwan, have also been taken into account in order to suggest important relationships of the culture of the Ryukyus to the cultures of the surrounding areas.

Archaeological exploration in the area began more than fifty years ago with investigations in Yaeyama (Takamiya 1961:2). These were followed by excavations of a small group of sites in Okinawa and Amami, the most important being Omonawa, Sachihijah (Shimada 1932), Ogidō (Matsumura 1921), Iha (Ōyama 1911, 1922), and Gusukudake (Komaki 1927). These are briefly summarized by Ichirō Yawata in a special issue of *Minzokugaku Kenkyu* (1952) and by Shinjun Tawada of the Commission for the Protection of Cultural Assets of the Ryukyu Islands (Tawada 1961). Neither summary attempted to relate the Ryukyuan materials to those of the surrounding areas or to

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explore the complicated historical period Kokubu and Kaneko (1964) and Takamiya (1964) have also presented survey papers on the prehistoric and historic periods of Ryukyuan culture.

Since 1950, at least twenty sites and other general aspects of the prehistory, including burials and stone monuments, have been extensively explored. The mass of data derived from these investigations, much of which has been published in the last few years, has not been digested in the local literature. Despite the impressive amount of excavation and publication, the details of many of the assemblages remain comparatively unknown even to the specialists of adjacent areas, partly because of the limited circulation of the reports and partly because of the language barriers. For this reason, many details concerning the sites and types have been included in the various chapters of this study.

As well as a digest of these important data, I have included, from my own excavations, information not usually found in the local reports—carbon dates, quantitative shell analysis, and a tentative classification of historical trade ceramics. These aspects of archaeological method will, it is hoped, be absorbed into the local scene, fostering a trend toward more precise chronological studies and ecological reconstructions.

A problem worthy of more attention is the relationship of the Ryukyus to Taiwan. Some of the scholars working in the Ryukyus have expert knowledge concerning the archaeology of Taiwan, and several of them have carried out fieldwork on that island. However, much of the information used in comparative studies with the Ryukyus comes from Taiwan's west coast, which is separated from the coast opposite the Ryukyus by one of the highest mountain ranges in East Asia, and the cultures on the two coasts of Taiwan are by no means identical. To assess and to expand the meager published material on the east coast, I have made two field trips to the area, in 1963 and 1965.

Thus far, little attention has been focused on the relation of the Ryukyuan finds to specific archaeological materials in Kyushu. One reason for this may be the unsettled question of whether or not the Ryukyus were occupied before the pottery-making, shellfish-collecting peoples whose remains date back to at least 1500 B.C. (Meighan 1964:13). Even if demonstrably earlier materials are eventually found, clear ceramic connections between Okinawa and Kyushu are evident from the time of Middle Jōmon in southern Kyushu.

The intent of this publication is to present new data (the sites which are mentioned for the first time can be checked in Table 1), to propose concrete ways of relating phases of

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Ryukyuan culture to phases in Taiwan and Kyushu, to present a more detailed framework for examining trade ceramics than has before been presented for the Ryukyus, and to suggest the use of ecological as well as historical data in discussing the evolution of culture in the Ryukyus. The chief means of accomplishing these ends is through the establishment of a firm archaeological chronology.

STRATEGY

For the following discussion, the area can be divided into smaller units based on topographical features. In the same manner as did previous field workers in the Ryukyus (Kaneko 1963:113-115; Kokubu and Kaneko 1964:120), I divide the small islands into three groups—the Satsunan Islands, Amami and Okinawa and their dependent islets, and the Sakishima Islands. Adding to these eastern Taiwan and southern Kyushu, there are five sub-areas, each with a local sequence formed by the succession and overlapping of pottery types, which are small enough units to allow a relatively precise chronological ordering of the sites. The comparison of the sequences, the aligning of contemporary types and sites, and the construction of the absolute area chronology are presented in Chapter 8. The sites which I selected and the nature of the information from each are included in Table 1. In the center column of the table, *exc* means that the site was excavated in distinction from *s.c.*, which indicates that a surface collection was made. The second column from the right indicates whether or not and at what time I studied the collection.

On the basis of a ceramic typology comprising locally-made pottery and imported trade porcelain and stoneware, it is possible to form relative chronologies for southern Kyushu and three areas of the Ryukyus.

The types in this study are historical types (Rouse 1960:318) based on selected procedural modes concerning the shape, rim treatment, interior finishing, decoration, and in some cases the nature of the glaze. The descriptions include diagnostic modes and other modes, often concerning the interior or the shape, which are useful in visualizing the kinds of ceramics involved but which may not be diagnostic. No statistical procedures have been used in any step of the formation of types, nor have systematic tabulations of clustering been made in most cases.

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In the case of southern Kyushu, a classification of local pottery has been in existence for many years. The diagnostic modes usually include the shape and the techniques and motifs of decoration. After the establishment of a type from a distinctive, newly excavated assemblage, subsequent finds from other assemblages are classified according to how closely they approximate the type sherds, and regional varieties may be established. Whole sites are usually characterized by the majority type and are placed chronologically in a firmly established order of types. The chronological usefulness of the types is demonstrated in Chapter 2. Since I have done no actual excavation in Kyushu, I have decided to use the types as they have traditionally been presented, making a few changes that have for the most part been suggested by other archaeologists working in the area, as in the case of the merging of the Ichiki, Nampukuji, and Izumi Types (Kidder 1957:90).

The types for Okinawa and Taiwan were formulated by sorting the actual artifacts or by grouping similar kinds of artifacts from their published descriptions. The types were first established on the basis of a few diagnostic modes, such as rectilinear incision or completely plain surfaces, using the largest and best documented collections from the literature in the case of Amami and Okinawa and using the artifacts themselves in the case of Sakishima and Taiwan. Modes which were constantly mentioned in the literature were also checked, for these allow more detailed comparisons with collections not available for actual typing. As with all types, variations from site to site were encountered, but it was decided to "lump" rather than "split," and to work, for this initial study, with a limited number of broad types.

In summary, the strategy by which I proceeded in this study consists of several steps.

1. The first step was the assembling of the material. Published sources were gathered, and excavated specimens were prepared, sorted, classified, and tabulated. During my fieldwork, I emphasized extensive sampling rather than an intensive exploration of any one site.

2. From the gathered data, ceramic types were formulated, and the sites were arranged according to the occurrence of types.

3. From the sites thus ordered, archaeological phases (see pp. 118-127) were abstracted. The traits distinguishing these phases include the ceramic types as well as aspects of sub-

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sistence. They show the major cultural patterns in the history of the Ryukyus as these patterns can be reconstructed from the evidence at hand. The comparison of phases involves a discussion of the relationship between cultural groups based on the common characteristics of similar sites and thought to represent living patterns of social groups, rather than the pursuit of a particular trait (for instance, roof-shaped tombs) independent of its bearers. This sort of comparison emphasizes a total pattern and ethnic groups rather than individual exotic customs. In Japanese archaeology as it is practiced in Okinawa and Kyushu, the next step in integration beyond sites and types is whole cultures rather than phases. This fact, coupled with the lack of quantification of data, tends to produce static reconstructions with the course of change usually attributed to historic contacts, influences, or "radiations" (Kokubu and Kaneko 1964:22). The sub-unit which I have chosen, the phase, allows the archaeologist to isolate temporal and spatial variations in finer detail.

TABLE 1 Table of sites

Island	Site	Excavation or Surface Collection*	Museum Collection Studied by Pearson	Publication Consulted by Pearson
Kyushu	Chiran	Kawaguchi, exc.		Kawaguchi 1960
	Ibusuki	Hamada, exc.		Hamada 1921
	Ishizaka	Kawaguchi <i>et al.</i> , exc.		Kawaguchi 1963a
	Izumi	Shimada, Hamada, Kawaguchi, exc.		Shimada and Hamada 1921; Kawaguchi 1957d, 1963d
	Kasuga	Kawaguchi, exc.		Kawaguchi 1963c
	Kusano	Mitomo, exc.		Mitomo 1955
	Miyajima			Kobayashi 1939:14-15

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	Nagano	Kawaguchi, exc.		Kawaguchi 1957a
	Ōbara	Kawaguchi, exc.		Kawaguchi 1963b
	Ōwata	Kokubu <i>et al.</i> , exc.		Kokubu <i>et al.</i> , 1963
	Todoroki	Hamada <i>et al.</i> , exc.; Matsumoto <i>et al.</i> , exc.		Hamada <i>et al.</i> , 1920; Matsumoto 1962
	Wadamae	Kawaguchi, exc.		Kawaguchi 1959
	Watase	Kokubu, exc.		Kokubu 1963a
	Yoshida			Kidder 1957: 84
Tane	Hirota	Kokubu, Morizono, Kawaguchi <i>et al.</i> , exc.	Tenri University, May 1963 University of Kyushu, Sept. 1965	Asano 1960: 192; Kokubu 1959, 1960d; Kokubu and Kaneko 1964; Kokubu and Morizono 1958; Morizono 1963b; Nagai 1966; Kaneko 1964. Morizono 1964; Kidder 1957: 83
	Nishinoomote (Moto-jō)	Morizono, exc.		Morizono 1964; Kidder 1957: 83
Yaku	Issō	Mori, Morizono, exc.		Mori 1955; Morizono 1963a
Kuchinoerabu	Shirogadaira	Kokubu, exc.		Kokubu 1963b

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	Yumuke	Mitomo, exc.		Mitomo 1963a
Takara	Ōbama	Ishige, s.c.	University of Kyoto, May 1963	
Amami	Igirisuzaka Ushuku	Ishige, s.c. Kokubu, Kawaguchi, exc.	Kagoshima, Gyoku Ryū High School, April 1963	Kokubu <i>et al.</i> 1956 Kyugakkai Rengo 1959
Okinoerabu	Asani Sumiyoshi	Pearson, exc. Kawaguchi, exc.	Kagoshima, Gyoku Ryū High School, April 1963	Kawaguchi 1963e
Tokuno	Omonawa No. 2	Kokubu, Kawaguchi <i>et al.</i> , exc.		Kokubu 1957
	Component 1 Omonawa No. 2	"	"	Kokubu 1956, 1960a; Kyugakkai Rengo 1959
	Component 2			
	Omonawa No. 3 (Kaneku Site)	"	"	Kawaguchi 1957b
	Omonawa No. 4	"	"	Kokubu 1960b Kokubu 1957, 1960b
Okinawa	Aguni	Nitta, Pearson, exc.		Nitta 1961
	Akajanga	Takamiya, exc.		Takamiya 1960
	Attabaru	Takamiya, exc.		Meighan 1964

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Chiarabaru	Tawada, exc.	Tawada <i>et al.</i> 1962
Garabi Go	Pearson, exc.	
Gusukudake	Komaki, exc.	Komaki 1927
Ie Jima	Tokunaga, exc.	Tokunaga 1936; Kaneko and Kokubu 1964
Iha	Ōyama, exc.	Ōyama 1911, 1922
Kadena	Nitta and Takemoto, exc.	Nitta and Takemoto 1960
Kanegusuku	Takamiya, exc.	Takamiya 1961
Katsuren	Takamiya, exc.	Ryukyu Seifu Bunkazai Hogo Iin Kai 1965
Kina	Pearson, s.c.	
Kogachi	Pearson, s.c.	
Komesu	Kokubu, exc.	Kokubu 1957
Noguni	Bird, Eckholm, Takamiya, exc.	American Museum of Nat. Hist., April 1966
Ogidō	Matsumura, exc.	University of Tokyo, April 1963
Ōyama	Kagawa and Tawada, exc.	Kagawa and Tawada 1959
Sachihijah	Shimada <i>et al.</i> , exc.	Shimada 1932

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	ShimashiyamaKokubu, exc.	Ryukyu Museum, May 1963	Kokubu 1960c
	Tsuboya		Yanagi 1942
	Tsuken	Takemoto, exc.	Takemoto 1961
	Urasoe	Pearson, exc.	Itō and Kamakura 1937; Okawa 1962
	Yabuchi	Kaneko and Kokubu, exc.	Kaneko and Kokubu 1962
	Yaejima	Pearson, exc.	
Miyako	Hisamatsu	Inamura, exc.	Kaneko 1963; Inamura 1962
Iriomote	Funaura	Pearson, exc.	
	Nakama No. 1	Takiguchi <i>et al.</i> , exc.	Ōtomi HighTakiguchi School, 1960 Feb. 1963 Waseda University, April 1963
	Nakama No. 2	Takiguchi <i>et al.</i> , exc.	Takiguchi 1960
	Ku'ura	Pearson, exc.	
	Pinishi	Takiguchi <i>et al.</i> , exc.	Waseda April 1963
Ishigaki	Yambaru	Takiguchi <i>et al.</i> , exc.	Takiguchi 1960
	Kanda	Pearson, exc.	Takiguchi 1960
	Ishisuku	Pearson, exc.	
	Kudo	Pearson, s.c.	

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Hatoma	Nakamori	Takamiya, exc.	Takamiya and Meighan 1959
Hateruma	Shimotabaru	Kanaseki, Kokubu <i>et</i> <i>al.</i> , exc.	Kanaseki 1963; Takiguchi 1960
	Atanoshi	Pearson, exc.	
	Misuku	Pearson, exc.	
Yonaguni	Shimanaka	Kaneko, Pearson, s.c.	Kokubu and Kaneko 1962: 93
	Hinai	Kaneko, Pearson, s.c.	Kaneko 1963: 135
Taiwan (east)	Peinan	Pearson, s.c. Kanaseki and Kokubu, exc.	Shih and Sung 1953 Kanaseki and Kokubu 1957
	P'ing Lin	Pearson, s.c.	Shih and Sung 1953
	O Luan Pi	Pearson s.c.; Utsurikawa, exc.; Sung, exc.	Utsurikawa 1936; Sung 1967; Kano 1952: 187 Kano 1952: 187
	T'ai Yuan	Pearson, exc.	
	Hualien Park	Kokubu and Kanaseki, exc. Pearson, s.c.	Shih and Sung 1953; Solheim 1960
	Chung Yung	Pearson, s.c	Shih and Sung 1953

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	Tung Ho	Shih and Sung, Pearson s.c.	Shih and Sung 1953
Lü Tao	You Tze Hu	Kano, exc.	Kano 1952: 407
Lan Yü	Imourud	Kano, exc.	Kano 1952: 84

*exc. = excavation

s.c. = surface collection

4. Through the comparison of phases from one area, certain continuities and discontinuities, both historical and ecological, make it possible to point up the major trends in the evolution of island cultures. Comparison of the early phases of Kyushu and the northern and central Ryukyus suggests that in the initial colonization from Kyushu sampling error or the founder theory principle may have been responsible for major changes between contiguous phases.

A diversity of scattered cultures within an ecologically homogeneous area may be accounted for on the basis of historical factors. However, even before the cultures are subjected to different historical influences, the effect of sampling error—which operates because of the smallness of the colonizing groups—may be felt. Certain features of the parent culture are lost because the individuals who have learned them are not included in the founding group. This kind of sampling error operating between parent cultures and their colonies, has been termed the founder theory principle (Rappaport and Vayda 1964; see pp. 132-134).

I became interested in the application of the founder theory to the culture history of the Ryukyus when I encountered the reports on the Ushuku Site in Amami which stated that Kyushu Ichiki Type pottery was found in the bottom layers of the site, establishing with certainty that cultural transmission between the two areas had occurred. A check of the pottery present on sites from southern Kyushu to Amami showed a reduction in the range of types found and the appearance in Amami of new, slightly different types (Table 42). It should be noted that the use of this theory does not commit one to stating that all of the population of the Ryukyus came from southern Kyushu but rather that extensive contacts took place. It seems likely that the greater part of the population of the Ryukyus, particularly from Okinawa to the north, is from southern Kyushu.

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5. A brief external comparison in the final chapter shows the rather isolated position of the Ryukyus in East and Southeast Asia. This isolation lasted until the 13th century, when the islands were gradually integrated into the Chinese commercial system.

1

Southern Kyushu, the Ryukyus, and Eastern Taiwan—the Geographical Background

The area included in this study extends from Kyushu, which is the southernmost of the four large islands of Japan, to the eastern coast of Taiwan (Map 1). The Ryukyu Islands form a 700-mile-long link in the chain of islands flanking the Pacific coast of Asia from Siberia to South China. Since the islands extend over 6 degrees of latitude, creating a gradient from north to south in climate and some forms of vegetation, the main features will be discussed in this order.

SOUTHERN KYUSHU

Southern Kyushu is largely volcanic, with several caldera still active or recently extinct. Both Kagoshima and Miyazaki, the two prefectures closest to the Ryukyus, are cut off from the northern part of Kyushu by mountain ranges which reach 5,000 feet in height. The main topographical constituents are alluvium, volcanic ash, highlands of volcanic rock, and highlands of other rock, presumably Palaeozoic (Trewartha 1965:599). However, extensive alluvial lowlands are lacking. The mountains are young and folded, and the Ryukyuan arc, coming up from the south, joins the mountains of the home islands, creating a node.

The climate of southern Kyushu is much more extreme than that of the Ryukyus, with a January average of 45°F and an August average of 81°F (Trewartha 1965:51). In Kagoshima there are about 112 days with frost each year, whereas most of the islands are frost-free. As in the Ryukyus and in Taiwan, the humidity is high throughout most of the year. The forests of

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southern Kyushu, consisting of broad-leaf evergreens at all but the highest elevations, share many features with the forests of other areas surrounding the East China Sea.

THE RYUKYU ISLANDS

The Ryukyus consist of 105 islands, many of which are no larger than rocks. At least twenty-four of them are uninhabited. They fall into five main groups and several subgroups (Maps 2, 3; Table 2).

In its composition, the island chain shares many features with the Andamans, Nicobars, and Lesser Antilles (Yoshiwara 1901:66). The islands were formed during the Tertiary by a series of depressions in the East China Sea, and the resulting curve is comprised of three arcs of different kinds of rocks. The Inner Zone is composed of the youngest rocks, volcanic in origin; the Outer Zone is of Tertiary formation; and the Central, the oldest, is of Palaeozoic, igneous materials.

A continuation of the Palaeozoic rocks of the Ryukyus is found in the interior of Taiwan, where slate prevails and other rocks are limited. The volcanic chain continues to the north into Kyushu, where the volcanoes of Kaimon Dake and Sakura Jima are still active, and to the south to Ta Tung Mountain in Taiwan and on to the Pescadores (Yoshiwara 1901). Ishigaki Island, in Yaeyama, some mountains of which are volcanic, does not seem to belong to this line but may be situated on a line of fissures extending to the southeast of Taiwan.

From Tane and Yaku in the north, which are within sight of Kyushu, to Yonaguni, from which Taiwan very occasionally can be seen, the largest islands, with their land masses and maximum elevations, are listed in Table 3.

Tane is 35 miles south of Kyushu and 11 miles east of Yaku. The length of the island is about 34 miles, and the width varies from 4 to 7 miles. The southern portion of the island is a broad plain, the middle consists of a series of terraces, and the north is a plateau sloping to the northwest. There are no true reefs surrounding Tane or any of the other islands north of the Tokara Strait; however, extensive beaches and sand dunes do occur.

Yaku is a circular island with a maximum diameter of 17 miles. Parts of the coast drop precipitously into the sea, while along other parts there is a narrow terrace with beaches. The entire island is volcanic, with active hot springs. Flat land is rare.

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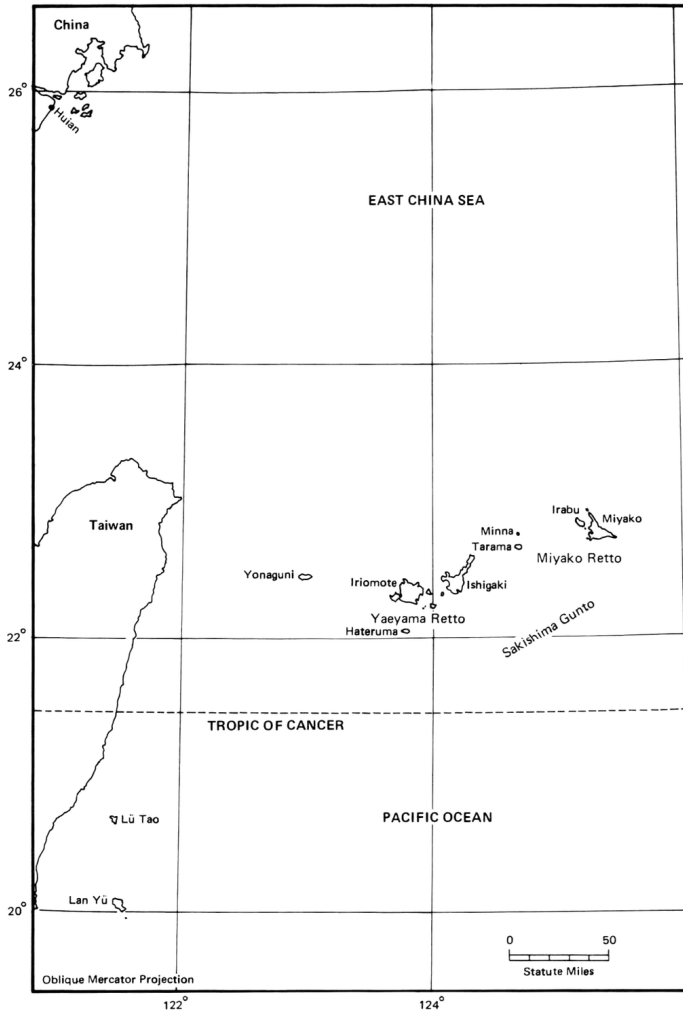
Amami, 35 miles long and 18 miles at its widest point, lies in a northeast-southwest direction. It is triangular in shape and heavily forested, with six mountain ridges crossing the island in a southerly direction and two ridges extending north into the Kasari Peninsula. The mountainous areas are extremely rough, and agricultural land is restricted to alluvial deposits. Since there are almost no foreshores, the roads and paths cross over the mountains instead of following the coast. On parts of the Kasari Peninsula there are sand dunes and wave-cut terraces. Wide coral reefs extend along much of the shore. To the east of Amami, separated by a channel 12 miles wide, lies Kikai or Kikaigashima, the surface of which is composed entirely of limestone.

Tokuno is 13½ miles long along its north-south axis and 7½ miles wide at its widest point. The center is mountainous, and the coastal areas are made up of terraces, 1 to 4½ miles wide, which are the most characteristic feature of the landscape. Today most of the villages are concentrated in the south along these terraces. Southwest of Tokuno and north of Okinawa are Okinoerabu and Yoron. Okinoerabu is roughly 12½ miles long, with a maximum width of 6 miles. To the south of Okinoerabu is Yoron, broader and flatter than Okinoerabu.

TABLE 2
Island groups in the Ryukyus

Satsunan	Yaku, Tane, Suwanose, Kuchinoerabu.
Amami-Tokara	Tokara Retto, Amami, Kikai, Kakeruma, Tokuno, Okinoerabu, Yoron.
Okinawa	Okinawa, Izena, Iheya, Ie, Kume, Aguni, Kerama, Kudaka, Tsuken, Hamahiga, Henza, etc.
Sakishima-Miyako	Miyako, Irabu, Ikema, Ōgami, Kurima, Minna, Tarama
Sakishima-Yaeyama	Ishigaki, Iriomote, Taketomi, Kobama, Hatoma, Aragusuku, Kayama, Yonaguni, Hateruma, Kuroshima

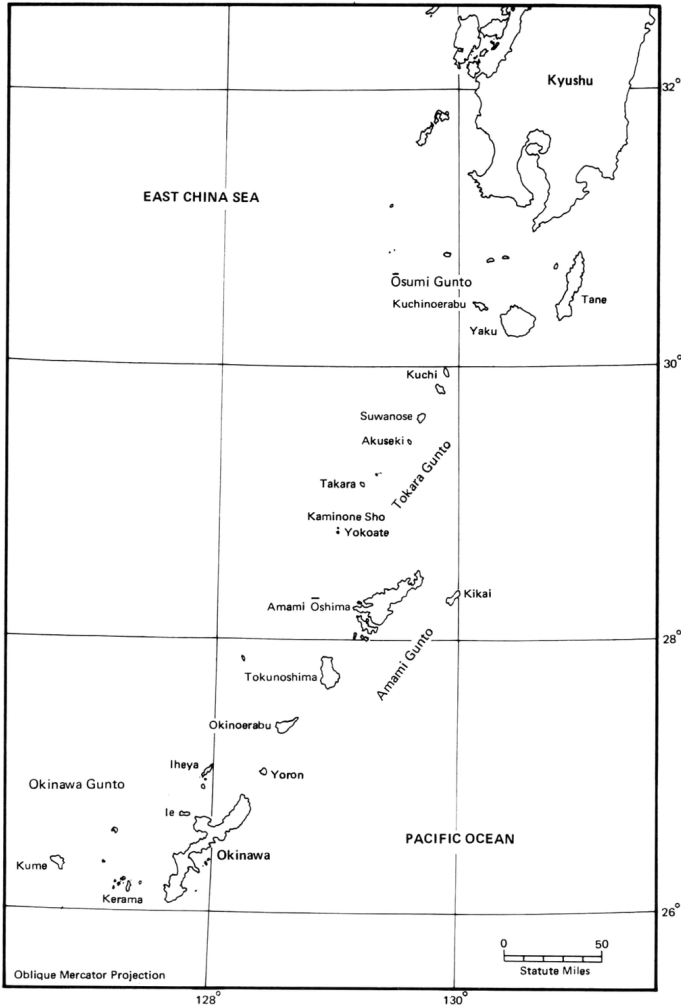
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Map 2 The Ryukyu Islands: Sakishima Gunto

Okinawa, or the Great Loochoo as it was known in the writings of the 19th century, is 60 miles long from the northeast to the southwest and from 2 to 16 miles wide. The island can be divided into two areas at the narrowest part, which is to the north of the Zampa and Katsuren Peninsulas.

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Map 3 The Ryukyu Islands: Okinawa, Amami, Tokara, Ōsumi

The northern section, known as Kunigami, consists of a densely forested mountain ridge with short streams and alluvial valleys where water is abundant. Along the extreme north end there are high coastal terraces on the east and west sides. The Motobu Peninsula, divided into two mountainous sections with an interior valley, forms part of Kunigami. The southern portion of the island consists of a mid-section with limestone ridges and

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*TABLE 3
Land mass and elevation of the Ryukyu Islands**

Island	Area in Square Miles	Elevation in Feet
Yaku	208	6,347
Tane	173	864
Amami Ōshima	284	2,293
Tokuno	95	2,107
Okinoerabu	35	-
Okinawa	454	1,650
Kume	22	1,016
Miyako	59	378
Ishigaki	84	1,680
Iriomote	109	1,449

**The areas of Yaku and Tane are taken from the Nihon Rekishi Dai Jiten (Kawude 1959: Vol. 12, p. 213; Vol. 18, p. 163), while the areas of the others are from Glacken (1960:11). Slightly different areas are given by Hacker (1959:510). The elevations are taken from Nuttonson (1952).*

a rolling, hilly, southern end. The former is known as Nakagami, and the latter, Shimajiri. In Nakagami there are low coastal flats on both sides of the central ridge, and in Shimajiri the uplands slope to the south, where cliffs drop into the sea in regions remote from river estuaries.

The dependent islets of Okinawa are numerous, and only a few have been intensively explored archaeologically. These include Tsuken, Yabuchi, and Kudaka. To the west of Okinawa, from north to south, lie groups of islands including Iheya, Ie, Aguni, the Keramas, and Kume. Ie is composed of a continuation of terraces from the Motobu Peninsula built up around a pinnacle of Palaeozoic rock which reaches a height of 557 feet. Its

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length, from east to west, is 5 miles, and its width is $2\frac{1}{2}$ miles. Kume lies 65 miles west of southern Okinawa. Its greatest dimension is $8\frac{1}{2}$ miles, and its maximum height is 1,016 feet. The northern part of Kume is an extensive raised reef. Like Aguni, which is within sight of Kume, it is entirely covered with a deep layer of limestone.

Miyako is a raised coral island with a maximum height of 378 feet. Limestone ridges run north and south, sloping gently to the west side and dropping off sharply on the east side. The island is roughly triangular, with the sides 11 miles long. Because it is low and flat it is densely settled and intensively cultivated. Since all of the Miyako group, including Ikema, Irabu, Kurima, and Shimoji, are composed of porous limestone, water is very restricted and very little wet rice can be grown. Wells are usually deep inside limestone caves.

Ishigaki, 11 miles long, consists of a southern plain and a northern mountainous spur, with other small peninsulas creating an indented coastline. There is a low, raised beach extending along the southern coast. Iriomote, 15 miles wide from east to west and about 10 miles long from north to south, is the largest island of the Sakishima group. It is enclosed with Ishigaki and the islets of Hatoma, Kuroshima, Taketomi, and Kobama by one large reef. The coasts are very irregular, indented by drowned valleys, and the surface is rough and mountainous. Several rivers originate in the interior and form broad streams which support small stands of mangrove around their mouths.

About one-third of the refugees from the outer islands who moved to the wet interior of Iriomote during the bombing raids of World War II died from malaria, which, however, is under control at the present time. Iriomote is probably the only island in the entire chain from which one can derive some idea of the original climax forest of the Ryukyus, although the remaining forests are now being changed by commercial logging operations. Kuroshima and Aragusuku are tiny low coral islands. Hatoma is a small sandstone dome surrounded by a raised coral reef.

Yonaguni, lying between Iriomote and Taiwan, has a maximum elevation of 758 feet. The island, 7 miles from east to west and $2\frac{1}{2}$ miles from north to south, consists of many flat-topped ridges and table lands. Like Hateruma, most of Yonaguni is composed of Tertiary rocks, with parts capped by limestone.

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TABLE 4
*Average annual temperatures in the Ryukyus**

	Average	Mean Max.	Mean Min.
Nase, Amami Ōshima	69°F	76°F	64°F
Naha, Okinawa	72°F	78°F	66°F
Ishigaki City, Ishigaki	74°F	79°F	68°F

**from Glacken (1960:18)*

The climate of the Ryukyus is influenced by the latitude, the surrounding ocean, the monsoon, the Black Current, and typhoons (Glacken 1960:19). The ocean, the monsoon, and the Black Current create an environment of moderate temperatures and considerable humidity. The average annual temperatures are given in Table 4.

Amami has an average precipitation of 120.4 inches, whereas Naha has 84.3 inches, and Ishigaki has 86 inches. The rainfall occurs throughout the year, with the greater part falling during the summer months when typhoons bring moist air from the south. During the winter, cold continental air, which has picked up moisture while crossing the East China Sea, causes chilling, humid weather, and persistent cloudiness.

The Ryukyus are famous for typhoons, which are most frequent in the summer and autumn, when the growing season is at its height. They bring salt spray, torrential rains, and ripping winds; countless features of Ryukyuan culture show adaptation to these violent storms.

Tidal waves have had a great effect on the Ryukyus. The most notable one was the famous Meiwa tsunami of 1771 which washed over many low-lying sections of Yaeyama. The shallow shelf between Ishigaki and Iriomote probably acted to increase the build-up of the water. Great quantities of pumice were washed up onto the island, according to local informants. The resulting displacement of whole villages is considered to be one of the factors creating complicated local dialect distributions. After the tidal wave, disease and famine persisted for several decades (Sakihara 1961).

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One of the environmental features most affecting the Ryukyus is the Black Current, at present the subject of detailed research by a combined team of Asian scientists under the auspices of UNESCO. The details of their findings should be of great interest to natural scientists and anthropologists alike. In a preliminary article, Niino (1964) set down the salient features of the Black Current as they are known to date.

The current is a Western Pacific extension of the North Equatorial Current. Somewhere off the southeast coast of Taiwan this river within the ocean accelerates to a speed of two knots per hour, forming a stream of warm water which extends from the surface to a depth of 1,250 feet. Between Taiwan and Yonaguni, it enters the East China Sea, flowing to the northwest of Okinawa. At this point the speed increases slightly, the depth increases to about 2,000 feet, and the width is about 90 miles. North of Amami Ōshima the current branches, and the upper level goes to the west coast of Kyushu and to the Goto Islands, finally becoming the Tsushima Current. The main-stream passes the islands of Yaku and Tane, flowing along the coasts of Kyushu, Shikoku, and Honshu. Like the Atlantic Gulf Stream, the current supports an inestimable amount of life. The water temperature in the region of Okinawa ranges from 72°F to 80°F, although the winter air temperature may drop as low as 40°F. Abundant fish live either in the stream or along the edges of it. These include bonito, flying fish, swordfish, and many other species. Pearl-producing shells and an infinite variety of corals extend north into the warm current of the Ryukyus. Mangrove and nipa palms survive north of their usual range because of the warm salt water and the abundant river water flowing from islands such as Ishigaki and Iriomote. Fossils from the Ryukyu limestone, which is the remains of the reefs produced in the warm water of the current, show that during the formation of the coral the water was warmer and saltier than at present (Niino 1964). Had the Ryukyus not lain in the path of the current their topography would certainly have lacked the coral caps or raised reefs which are their most characteristic feature.

Recent observations of variations within the Black Current have led to the assumption that cyclical changes may occur, particularly in the northern part of the current. Cold water occasionally flows along the shores of southern Kagoshima, as it did from 1936 to 1940, bringing different kinds of fish, such as the black tuna. Periodicity of six to seven years and from twenty to thirty years for various changes has been postulated.

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The vegetation of the Ryukyus has been described as transitional between that of Japan and Taiwan (Walker 1953). Various trees, including the ubiquitous *fukugi* (*Garcinia spicata*), may have been introduced into the Ryukyus from Southeast Asia during the past 600 years. There are almost no forests which have not been extensively altered by man.

The strandline vegetation, in all but the northernmost islands, is characterized by pandanus and other Indo-Pacific shore plants. The high islands may have interior stands of broad-leaf evergreens or the Ryukyu pine, as well as other local dwarf bamboo and *Miscanthus* grass. The forest stands are usually extremely dense, with sturdy, shrubby growth which is best adapted to typhoons and the high winds which occur every month of the year.

While sweet potatoes and sugar cane are of primary importance at present, they were apparently not important in the prehistoric or early historic periods. The sweet potato was introduced in 1606 (Kerr 1959:183) and sugar cane was said to have been brought to Miyako from China in 1597 (Kerr 1959:122). However, other accounts state that sugar cane may have existed in the Ryukyus as early as 753 A.D. (Mitsugu Matsuda, personal communication). As a result of the severe changes in the vegetation wrought by the typhoon of fire and steel which marked the closing days of World War II, *Imperata* grass, the usual grassland climax before the war, has now been replaced in many areas, such as southern Okinawa, by *Miscanthus*. Cycads are indigenous to all the islands. These dwarf, palm-like plants provide strong leaves—useful for fertilizer and for innumerable handicrafts—and seeds, which are toxic when raw but consumable when boiled. The trunks also supply a starch which is used as a famine food. The cycad is adapted to rocky soils and grows equally well under pines or on exposed shores.

Not all of the soils of the Ryukyus are poor by any means, but some of them are thin, barely covering the limestone bedrock. Wet rice, which is grown in every possible location, at present occupies only 3 percent of the land. On some flat islands, such as those in Yaeyama, a shortage of water constitutes a perpetually serious problem. Another determinant of settlement, malaria, is particularly widespread on forested wet islands such as Iriomote. The disease may have been introduced during the historic period, although this cannot be verified at present.

Glacken noted that at present one of the most significant features of land usage is the high percentage of the total area, 59 percent, which is in forest and wild grass (1960:11). Miyako is the exception, as noted earlier. The forest is the source of firewood and wood for construction and is the home of the wild pig. There are records that swidden agriculture was practiced in the past, and dry rice continues to be grown in some areas (Nuttonson 1952:86). The mountains of Ishigaki still show a patchy secondary growth, construed by some as evidence of recent swidden activities.

The communally owned uncultivated, or *genya* land (Glacken 1960:111), controls the water run-off from the mountains and provides thatch and light bamboo for house construction. In Okinawa tombs are built on this land, but on Ishigaki and Iriomote tombs are built on land suitable for dry agriculture, indicating that there had been little population pressure in earlier times. On Hateruma however, the present tombs are always built on the very poorest land, and this may indicate that there is some truth to the local statements that the population of Hateruma was higher previously than at present. *Genya* land may be divided into two categories, depending upon whether it supports grass and shrubs or trees for firewood or has no vegetation, as in the case of the exposed rock outcrops (Glacken 1960:117).

Sacred groves, often on the tops of hills surrounding local shrines, are never cut. *Bōfūrin*, or strip shelters, have been purposefully planted or left uncut, at least since the early historic period. These may be strips at the edges of the fields or along the shore.

Modern house sites are grouped in three basic ways to form villages or hamlets. The most common is a large block of houses with streets or lanes between them. Dense rows of trees or limestone walls surround each house. Although there may be vacant patches used for vegetables or winter crops, the main fields are around the edges of the village. The second type is a shoestring or hamlet type in which the houses are strung along the road or shoreline. The third kind, the *yadori* settlement, has a central village and isolated clusters of a few houses each situated in the agricultural land.

At present, cultivated land is divided into two major types, wet and dry. Wet rice land is particularly rare. This cultivated land can be divided into two major categories depending upon whether it will support one or two crops per year (Glacken 1960:116). Terracing is practiced for both wet and dry crops, al-

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though wet rice is often grown in the river bottoms. Dry fields are often made from rocky limestone outcrops by hacking away the obstructive boulders and bedrock and gradually adding waste vegetation and straw to the thin soil (Glacken 1960:128). It should be borne in mind that unirrigated land which at present is planted in sweet potatoes figured quite differently in the economy before the sweet potato was introduced; dry rice or millet must have been the previous staples.

Mammals are rare in the Ryukyus. Wild pigs, thought to have crossed from Taiwan by an old land bridge, and native deer, which gradually became extinct with increased human population, were the only game animals. The dog has been present since its introduction with the first colonists. At present, small horses, sheep, and goats are found on the islands, as is the water buffalo, which is used in the southern Ryukyus. Rats and mice are of course numerous, considering the high human population and the presence of sugar cane. The Ryukyus are the home of a number of fruit bats, but their remains have not been conclusively documented in archaeological sites. The deadly *habu*, or pit viper, whose distribution has provided a clue as to which islands were included in earlier land masses within the Ryukyus (Hanzawa 1935:55-59), must not go unmentioned.

EASTERN TAIWAN

Most of the east coast of Taiwan can be included in a single geographic region, but as Hsieh (1964:120) has pointed out, it is its isolation rather than any geographic unity which sets it apart from the rest of Taiwan. The major features are the coastal Taitung mountains, which north of Taitung are less than 3,000 feet but rise to more than 7,000 feet in the south, and the interior rift valley. The valley varies from 5 to 9 miles in width and is covered with thick alluvium at the floor. To the eastern side is the coastal range, and to the west are the sharply rising mountains of the central range. River valleys originally traversed the coastal range to the Pacific Ocean, from west to east, but after the subsidence of the valley floor, they began to flow from north to south. The exception is the large Hsiu-Ku-Luan River, which continues to flow through the mountains to the village of Ta-Chiang-Kou. The Pacific coast is rocky, exposed, and in some cases extremely precipitous.

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TABLE 5

*Average annual temperatures on the east coast of Taiwan**

	Average	Mean Max.	Mean Min.
Taitung	74.3°F	81.5°F	66°F
Hualien	72.5°F	79.2°F	63°F

**from Hsieh (1964:47)*

The temperature of the east coast is slightly warmer than that of the southern Ryukyus. The effect of the high mountains and the larger land mass is apparent in the wider range of temperatures throughout the year (Table 5). The rainfall is approximately 72 inches per year at Taitung, with the greater part of the rain falling in the summer, probably during the frequent typhoons.

The region is clothed with a rich, dense, broad-leaf evergreen vegetation, more luxuriant than that of the southern Ryukyus. In prehistoric times rice may have been an important food crop (Kanaseki and Kokubu 1957).

LÜ TAO AND LAN YÜ ISLANDS

Lü Tao and Lan Yü lie off the east coast of Taiwan. Green Island (known as Lü Tao in Chinese, Kashōtō in Japanese, and Samasana or Itanasai in local dialect) has an area of 6½ square miles and is 20 miles off the coast of Taitung. It is of volcanic origin, with andesite lavas, raised reefs and short radiating rivers (Hsieh 1964:29). Lan Yü (known also as Kōtōsho in Japanese, and Botel Tobago in Western literature) is about 50 miles southeast of Taitung. It has an area of 18½ square miles, and a maximum elevation of 1,500 feet. Many of the coastal mountain slopes are covered with *Miscanthus*, but the interior, rough, mountainous areas are still heavily forested. The coastal reefs are joined to raised reefs, showing that the island is still rising. The staple of the Yami aboriginal inhabitants of the island is taro. Sweet potatoes and millet are also important, but rice is grown only by one or two Chinese farmers on the west side of the island.

2

The Sequence in Southern Kyushu

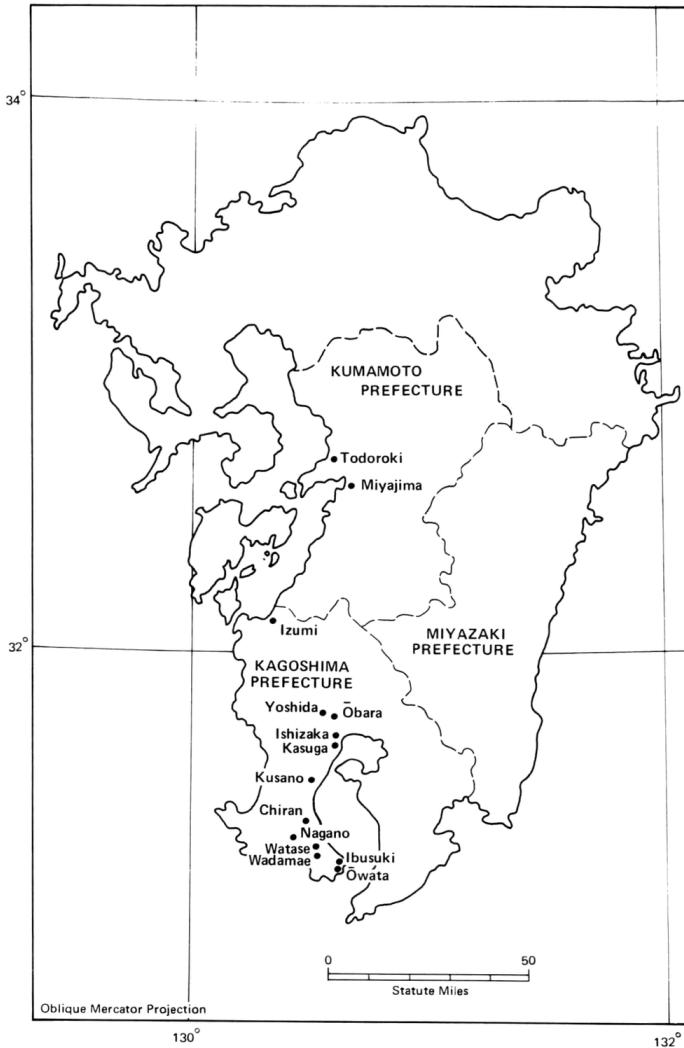
JŌMON

It is impossible to understand the events of the prehistory of the Ryukyus without a knowledge of the prehistory of Kyushu, particularly Kagoshima Prefecture, the old fief of Satsuma. This section includes the pottery sequence of Kagoshima and a few sites in Kumamoto essential for the understanding of the Kagoshima chronology (Map 4).

The years around 1920 witnessed the first activity in the archaeology of both Kyushu and the Ryukyus. While Matsumura and Ōyama were excavating the Ryukyu sites of Ogidō (Matsumura 1920) and Iha (Ōyama 1911, 1922), Hamada and Shimada were working on the Ibusuki (Hamada 1921) and Izumi (Shimada and Hamada 1921) Sites of southern Kyushu. Since then dozens of sites in southern Kyushu have been dug, although the published material remains scarce.

The emphasis of Kyushu archaeology has been exclusively on pottery, the most abundant and distinctive artifact in the region. Because the excavations are of short duration and the bulk of the information is in the form of brief summaries, data concerning the stone artifacts and the nature of the settlements themselves are extremely rare. The local method of excavation usually involves several large trenches with dimensions approximately 3 feet by 6 feet, but sometimes larger. In the Kagoshima area, natural stratigraphy ordinarily can be followed easily, since many of the site strata are composed of volcanic ash from eruptions which continue into the present. Also, shell layers and layers of organic debris stand out clearly. In the total absence of sedation—even of quantification—of ceramic assemblages, the

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natural layers are crucial. The classic example is the Ibusuki Site, which has a maximum depth of 11 feet and consists of alternating layers of volcanic ash and mud (Kidder 1957:87).

Two general survey articles by Kobayashi (1939) and Kidder (1957) enumerate the pottery types that have been formulated by the archaeologists and show their distinguishing features.

Chapter 2

TABLE 6

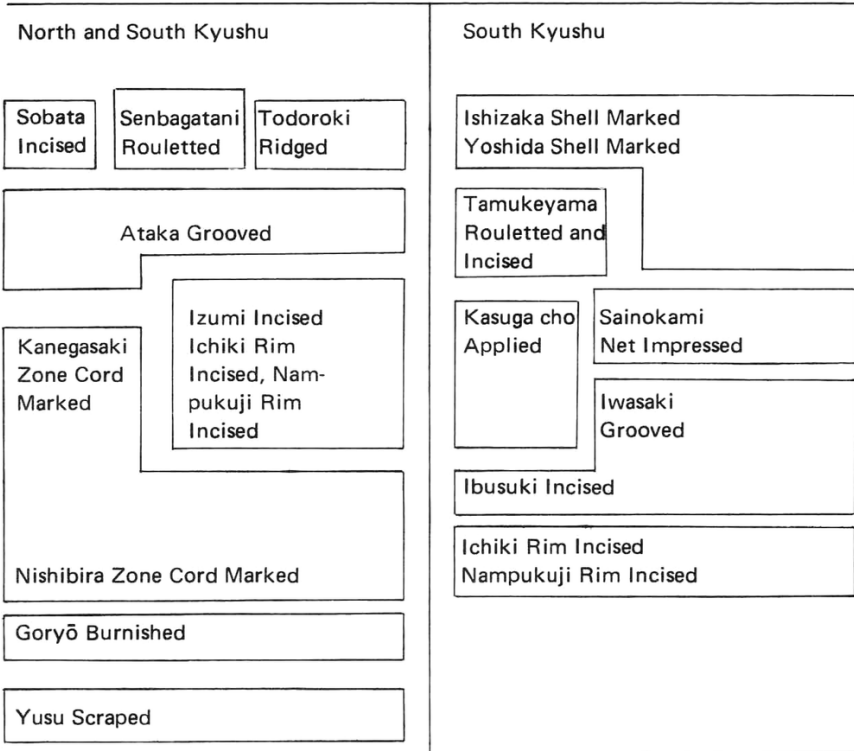
Approaches to the sequence in Kyushu (Kobayashi 1939)

Sobata Type	
Ataka Type	Early
Todoroki Type	
Ichiki Type	
Ayamura B Type	
Nampukuji Type	Middle
Sainokami Type	
Mitarai Type	
Goryō Type	
Nishibira Type	Late

The final product of these articles consists of two chronological charts showing the broad relationships of each type. Kobayashi's chart (1939:39) groups the types into clusters of Early, Middle, and Late (Table 6). Kidder shows the succession of types, one by one, in northern and southern Kyushu (Table 7). Since there are few carbon dates for Kyushu, the types can be placed only broadly in a chronological context, and without quantification, we cannot trace the precise pattern of growth of certain attributes. The types are either present or absent, and since they are very broad, one site contains three or four of them at the most. This scarcity of types recognized within a single site hampers quantitative seriation of the kind usually practiced in American archaeology. There is some question, given these circumstances, as to whether or not a suitable chronology could be built without an entire reclassification of the pottery. Some order can be achieved, however, even if it consists of two or three large blocks of sites containing common types. Kidder found that, with the exception of a few sites containing types believed to be early, most of the well-known south Kyushu sites fall into a single large group sharing the Ichiki Type (1957:78).

TABLE 7

Approaches to the sequence in Kyushu (Kidder 1957)



Some of the modes which have been chosen by the Kyushu archaeologists, such as the rounding or flattening of the base, do not seem to have chronological significance. *Motifs* of exterior surface decoration, such as the punctating of the lip, punctating in straight rows, or rouletting in chevrons, have a restricted distribution; but *techniques* persist or recombine, complicating the picture considerably. This conservative trend in the recurrence of techniques is aptly illustrated by the sequence which has been suggested by Kawaguchi for the Kagoshima area (Kidder 1957:79; Table 8).

Sequential listing in the form proposed by Kidder presents a disjointed picture. There must be some relation between two types sharing the same technique, but we cannot visualize what it might be from this kind of presentation.

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TABLE 8

*Postulated chronological sequence of types and techniques in Kagoshima**

Early	Sobata (Incised)
	Ishizaka (Shell Scraped)
	Yoshida (Punched, Incised, and Shell Scraped)
	Sainokami (Net Impressed)
	Kasuga cho (Punched or Applied in Ribbons)
	Namiki (Punched or Pseudo Nail-Impressed)
	Ataka (Grooved)
	Iwasaki Lower (Grooved)
	Iwasaki Upper (Grooved)
	Ibusuki (Incised)
	Ichiki (Rim Marked)
Late	Kurokawa (Roughened)

**after Kidder (1957:79)*

On the basis of the material in this chapter, much of which comes from recent excavations, another arrangement is suggested in Table 13.

In the outline of the major pottery types of southern Kyushu, I have followed Kidder's descriptions extensively, rearranging the diagnostic features to facilitate comparison. Following the descriptions of the pottery, excavation data are inserted for clarification. Parts of the non-ceramic assemblage have been included to fill out the descriptions.

Sobata Type

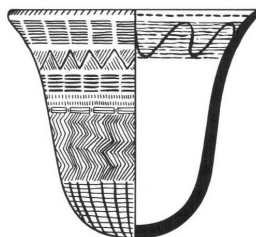


FIGURE 1 *Sobata*
Type

Base Pointed or rounded, but never flat; may have decoration resembling a spider web with radiating and zigzag lines.

Body Shape Occasionally shouldered profiles and slightly flaring necks, but usual shape is wide-mouthed jar with sloping sides.

Interior Shell scraping on interior surfaces; inner wall grooving may be near rim. Most common form of grooving horizontal with single, superimposed wavy line.

Exterior Decoration Body is usually scraped with a shell, with subsequent decoration of rows of punctates, parallel grooving, low applied bands, indentations, striated triangles, parallel chevron designs, shell imprints, or inverted U in two parallel rows between horizontal and diagonal grooving.

The type has several local varieties, including Hikachiyama of northern Kagoshima and Ishizaka of southern Kagoshima. Latter has surface grooves, base radiating lines, and pointed bases. Ishizaka rims sometimes thickened, bearing shell imprints in chevron shape and parallel grooves which are not confined to horizontal zones (Kidder 1957:84). Another variant with very elaborate designs is Yoshida, which, from stratigraphic evidence, occurs above Ishizaka at the Yoshida Site.

Time Period Early Jōmon. Layers bearing Sobata have been dated at 5190 ± 130 B.P. at the Sobata Site (Esaka 1967:7).

Occurrence Kobayashi (1939:23) would group Sobata with Todoroki and Tamukeyama, since the same techniques are involved.

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At the Ōbara Site (Kawaguchi 1963b), the Yoshida variant occurred above the Ishizaka, adding weight to the hypothesis that Yoshida is a further development of a trend established with Sobata and carried on into Ishizaka.

In the Chiran Site, Sobata, Todoroki, Namiki-Kasuga, and one kind of Iwasaki occurred together (Kawaguchi 1960).

The Ishizaka Site helps to clarify the relations of Early Jōmon pottery in southern Kyushu (Kawaguchi 1963a). The two upper layers consisted of surface soil and black ash; the third layer contained Sainokami pottery. From this level was found one pottery wheel-shaped earring, oval cross-sectioned adze fragments, and several chipped, triangular, concave-based arrowheads. Level 4 contained Ishizaka sherds of a deep jar shape, with flat or pointed bottoms, slanting shell impressions on the neck, and punctates and shell scraping below the neck.

Tamukeyama Type

Base Flat or rounded.

Body Shape Wide mouth, concave upper wall, shouldered upper portion, and rapidly narrowing lower portion most usual.

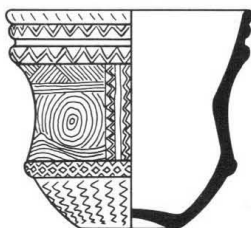


FIGURE 2
Tamukeyama Type

Interior Unsmoothed, with rouletting sometimes on inner rim.

Rim Outer edge may be folded over and finger pressed; otherwise lip even.

Exterior Decoration Outer surface first rouletted, then areas zoned and grooved; indented ridge separates upper part of vessel from lower part; parallel ribs may run from rim to mid-portion. Ribs usually bear lemon-shaped indentations or zigzag

rouletting. Motifs include striated triangles, ovals in defile, rectangular blocks, zigzags (these most common), rouletting, grooving on upper part of body, and indented rings made by end of a bamboo stick.

Time Period This type, belonging to the Early Jōmon, is probably one of the earliest in southern Kyushu.

Occurrence This type combines Senbagatani and Tamukeyama into one. The center of the type seems to be Isa County, Kagoshima (Kidder 1957:84). Kidder states that Tamukeyama and Sobata overlapped in time, as evidenced by similarities in the arrangement of the decoration.

Todoroki Type

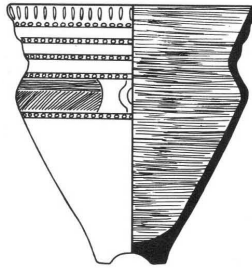


FIGURE 3 Todoroki Type

Base Flat.

Body Shape Cylindrical-shaped jars have shouldered profile. Occasionally shape resembles inverted truncated cone.

Interior Inner wall grooving near rim, sometimes accompanied by rouletting.

Rim Raised bands on body may extend up to rim, leaving sharp ridge. Two castellations often present, with indented and wavy rims.

Exterior Decoration Body may be shell scraped. Decoration consists of two applied bands, sometimes indented; pinched ridges, horizontal or diagonal, rarely curved or spiral; parallel

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grooving; rouletting on exterior raised bands; zones between parallel ridges often filled with fine, closely spaced indentations; shell scraping in net patterns.

Time Period This type belongs to the Early Jōmon and is coexistent with Tamukeyama.

Occurrence The type site at Todoroki in Kumamoto Prefecture was dug more than forty years ago (Hamada *et al.* 1920). Small quantities of Sobata and Ataka were found with the Todoroki pottery. In a re-excavation of the Todoroki Site (Matsumoto 1964), Todoroki and Sobata occurred at the bottom of five layers, with fingernail impressed pottery in the third layer and Ataka pottery in the second layer. Todoroki proved to be just as early as, if not earlier than, Sobata. This later excavation clarified relationships suggested in the original one.

The type occurs in north and south Kyushu and in the Anno district of Tane. From the Miyajima Site in Kumamoto (Kobayashi 1939:14-15) it appears that Todoroki was flourishing as Sobata was waning; however, it may be that Sobata was developing as Todoroki was flourishing. There are strong indications now that Todoroki or antecedent variants with applied strip decoration are the earliest pottery in Kyushu.

Sainokami Type

Base Flat.

Body Shape Body almost cylindrical, sometimes with flaring mouth and inturned lip; wall thickens noticeably toward base.

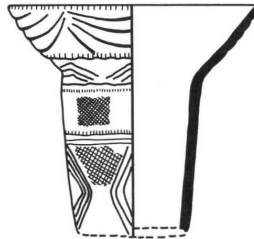


FIGURE 4 Sainokami Type

Interior Ridged where flaring mouth and body meet.

Rim Always flat; may be notched along outer edge.

Exterior Decoration Diagnostic feature is net pattern on body or upper section of vessel. Often two broad parallel incisions or grooves; may also be rows of dots, crescents, hooks. Around neck may be slanting decorations or bent lines.

Time Period Middle Jōmon (Kidder 1957:84).

Occurrence The center of the type seems to be in Kagoshima and the adjacent sections of Kumamoto and Miyazaki. It occurs stratigraphically above the Ishizaka variant of Sobata at the Chiran Site and at the same time seems to be imitating the zoned cord marking by using grooves to delineate the net impressions. Sainokami motifs may have been reaching a peak of popularity when Sobata pottery had almost been forgotten. Several sherds of Ishizaka were found, but Kawaguchi believes that they were intrusive.

Ataka Type

Base Flat, thickening near center.

Body Shape Curves slight, with bulge near middle.

Interior Gouged from scraping; walls thinned. May be interior decoration on lip.

Rim Sometimes rippled, sometimes has perpendicular indentations.



FIGURE 5 Ataka Type

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TABLE 9

Distribution of pottery in the Izumi Site, 1953-1954 excavations

Surface Soil
Shell Layer-Ataka, Ichiki, Kanegasaki, polished black pottery (perhaps Goryō), Namiki-Kasuga
Reddish Soil Layer-Ataka, Namiki-Kasuga
Black Soil Layer-Unnamed impressed pottery
Sandy Subsoil

Exterior Decoration Rim has horizontal groove; below is decoration consisting of shell edge imprints, dots, spirals, diagonals, curved triangular forms, meanders, parallel curves, and occasional dragged or scraped shell marks which resemble cord marking.

Time Period Middle Jōmon; may extend into Late Jōmon.

Occurrence Ataka is found mixed with Todoroki and Sobata and usually occurs below Ichiki sherds on stratified sites. In south Kyushu, the type includes two varieties known as Iwasaki and Ibusuki. In a 1953 excavation of the Izumi Site, Kawaguchi (1963d) found in the shell layer large quantities of Ataka, with a variety of the Ichiki Type known as Izumi, and below the shells, a small quantity of Namiki-Kasuga. In the same layer as the Namiki-Kasuga Type pottery there was a skeleton, semi-flexed, surrounded by four rocks, with a pottery vessel at the head. A further excavation of the Izumi Site in 1954, in which seven large trenches were opened, gave a much more elaborate picture (Table 9).

It should be noted that in each level of each trench, not every type listed above was found. For instance, in No. 7 Trench the reddish soil layer yielded only a small quantity of Nam-pukuji. The types appear to be localized within the site. They may have been the property of small subgroups.

From spot excavations on the Watase Site (Kokubu 1963a), Ataka was found in large quantities with small amounts of Ibusuki and Ichiki. While the total number of sherds excavated was quite small, the ratios seem suggestive. The frequency of Ataka may have been expanding while Ichiki was beginning to appear.

Namiki-Kasuga Type

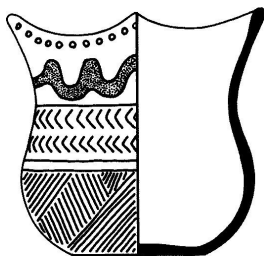


FIGURE 6 Namiki-Kasuga Type

Base Flat or (rarely) concave.

Body Shape Walls carefully rounded with occasional flaring mouths.

Interior Scraped.

Exterior Decoration Nail impressions (made with end of split section of bamboo) on applied strips of clay; shallow incisions defining zones of nail impressions, rows of diagonals, zigzags, abbreviated crescents, oval impressions, straight or undulating applied ridges, and scraping, sometimes in patterns.

Rim May bear slight castellations or rows of punctates on lip.

Time Period Late Jōmon.

Occurrence This type groups together Namiki and Kasuga, as proposed by Kidder (1957:88). Namiki is centered in the southwest portion of Kumamoto and Isa County in Kagoshima. In the Kasuga Site, the Namiki motif or fingernail impressing occurred stratigraphically below the sherds bearing applied strips. Kidder believes that this ribboned decoration is a local development but that the nail impressions are the result of influences from Honshu.

In a re-excavation of the Kasuga Site, Kawaguchi divided the excavated pottery into five groups, from top to bottom (1963c; see Table 10). This site provides one of the longest sequences and clearest explications of the relations of the later types.

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TABLE 10
Pottery from the Kasuga Site, 1953 excavations

1. Ichiki.
2. Kanegasaki (well fired, polished black bowl). Nishibira (believed to have been imported with the above).
Ibusuki (well fired deep jar form, decoration consisting of two parallel curving lines crossed by a straight line).
3. Iwasaki (small number of sherds; mouth and neck have grooving).
4. Ataka (deep jar form).
5. Namiki-Kasuga.

Ichiki Type

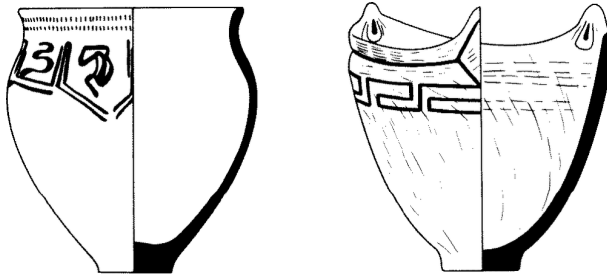


FIGURE 7 Ichiki Type

Base Flat, concave, or raised.

Body Shape Slightly flaring neck with square or round mouth; flaring belt that sets off body.

Rim Thickening is diagnostic feature.

Exterior Decoration Zones of punctates, shell edge imprints, punctates in rows, horizontal grooves, spatula impressed decorations, parallel incisions in groups, two or four castellations, and external scraping and smoothing all common attributes.

Time Period Late Jōmon.

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TABLE 11

Pottery types from the Ibusuki Site, 1957 excavations

Layers	1-5	(Surface and Sterile Layers)
	6	Yayoi Remains
	7	(Sterile)
	8	Yayoi, Ichiki Pottery
	9	(Sterile)
	10	Ichiki, also single strand corded pottery
	11, 12	Ichiki
	13	Single strand decorated, with polished surfaces, black pottery, probably Nishibira or Kanegasaki. Some sherds show signs of painting. Also some brown sherds with shell scraping.

Occurrence This type includes the Izumi, Ichiki, and Nampukuji Types, of Kidder. The position of Ichiki within the Late Jōmon is demonstrated by an analysis of finds from the Ōwata Site in Ibusuki City, South Kagoshima (Kokubu *et al.* 1963). Several trenches were dug in an excavation lasting two weeks. The stratigraphy, partially the result of a series of volcanic eruptions, is rather complex. The data here are from Trench 2, where thirteen layers occupied 11½ feet (Table 11). No comment concerning the association of Yayoi and Ichiki is provided in the report. This excavation demonstrates the long life of the Ichiki Type.

The Kusano Site (Mitomo 1955) could also be considered a typical Ichiki manifestation. With the Ichiki sherds was found a footed stand with open work, surmounted by a dish, on which the remains of red and white paint were still visible. This appears to be a trade object from north Kyushu, for such a type is not usual in this area.

Nishibira-Kanegasaki Type

Base Narrow, sometimes raised; may have impressions of leaves or matting on bottom.

Body Shape Most common form is jar with simple rim, flaring or straight mouth, small loop handles.

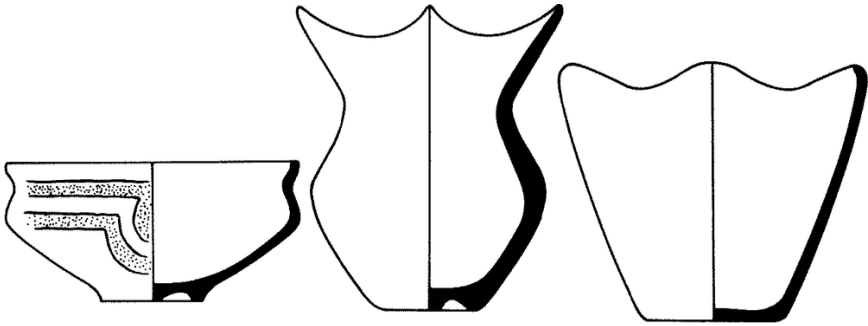


FIGURE 8 Nishibira-Kanegasaki Type

Rim Notching or castellations (usually four) may occur.

Exterior Decoration Entire outer surface shell scraped, then zoned with erased cord marking, circular patterns, lines between zones, polished surfaces, and cord impressions in horizontal patterns around rim and shoulder. Occasionally completely plain.

Time Period Late Jōmon or Latest Jōmon.

Occurrence The center of distribution is to the north, in Fukuoka and Kumamoto. Nishibira-Kanegasaki constitutes the only manifestation of cord marking in Kyushu; yet even in these examples it is almost always confined to zones and used with much less concentration than in Honshu (Kidder 1957:91). This type is always rare on southern Kyushu sites.

Goryō Type

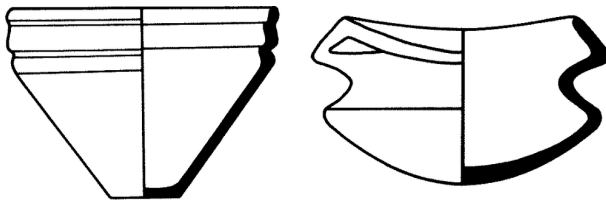


FIGURE 9 Goryō Type

Base Flat or (rarely) raised.

Body Shape Neatly grooved collars appear on high bowls; outer surfaces often straight. Also constricted necks.

Rim In the Kumamoto area, there may be four small castellations, but these do not usually occur in southern Kagoshima.

Exterior Decoration Black polished surfaces, simple forms diagnostic. Shoulders may have horizontal grooves with circular punctates in them.

Time Period Late Jōmon.

Occurrence Goryō occurs, often with the Ichiki Type, on many sites in southern Kyushu, Tane, and the Satsunan Islands. It is also common in northern Kyushu. In some respects it is reminiscent of the black burnished pottery of the Lungshanoid in China.

Yusu-Kurokawa Type

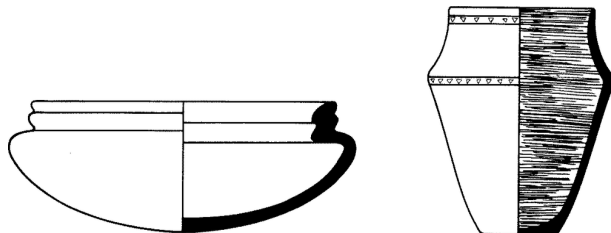


FIGURE 10 Yusu-Kurokawa Type

Base Flaring ring foot, or flat.

Body Shape Most common form is tall jar with neck and collar. Bodies swell, necks constricted, with wide mouths and narrow bases. Collar and body may be clearly demarcated by ridges of clay deeply indented with triangular notches.

Rim Smooth rims may be set off by ridge above neck.

Exterior Decoration Surface sometimes completely shell scraped. Sometimes the gritty surface covered with slip of fine clay.

TABLE 12
Position of pottery types on twelve Jōmon sites

Site										
Yoshida	Ōbara	Chiran	Ishizaka	Todoroki	Izumi	Watase	Kasuga	Ōwata	Kusano	Nagano
										(Layer 2) Yusu-Kurokawa
					Goryō	Ichiki	Ichiki	Ichiki	Ichiki	
					Kanegasaki		Nishibira-Kanegasaki	Nishibira-Kanegasaki		
						Ibusuki	Ibusuki (Iwasaki)			(Layer 3 detritus)
				Ataka	Ataka	Ataka	Ataka			
		Namiki-Kasuga			Namiki		Namiki-Kasuga			(Layer 4) Namiki-Kasuga
		Sainokami	(Layer 3) Sainokami		Nampukuji					
		Todoroki	(Layer 4) Ishizaka	Todoroki						(Layer 7,8) Todoroki?
Sobata (Ishizaka)	Sobata (Ishizaka)	Sobata (Ishizaka)		Sobata						

Time Period Latest Jōmon.

Occurrence The Nagano Site (Kawaguchi 1957a) demonstrates the stratigraphic position of Yusu-Kurokawa in southern Kyushu. Since the site is in the vicinity of several volcanoes, particularly the Ibusuki caldera, layers of volcanic detritus are immediately noticeable. There are ten layers in all, and Layer 3 appeared to be the product of the most recent eruption. It is overlain by a layer containing Kurokawa pottery and a surface layer with Yayoi pottery. In this site, the Yusu-Kurokawa Type has carefully and roughly made variants. The former are very black, hard, polished, and well fired. The rough pottery is mostly of the *kame* (wide-mouthed jar) shape with flaring mouth and straight sides. The sides show shell scraping.

Layer 4 has pottery, some of which has four convex bands on the neck (Namiki-Kasuga?), and the seventh and eighth layers have pottery with elaborate shell scraping in chevrons with punctates at the summits of the angles. Perhaps this is Todoroki, although Kawaguchi does not name it.

Table 12 summarizes and compares the relative positions of the pottery types from the twelve major sites mentioned in this text. The sites are presented from left to right in the order in

TABLE 13
Sequence of types and sites in southern Kyushu

Site	Type
Nagano (Layer 2)	
Ōwata	Yusu Kurokawa
Kasuga Kusano	Ichiki Goryō Nishibira- Kanegasaki
Izumi	Namiki Kasuga
Watase	Ataka
Nagano (Layer 4)	? Sainokami
Todoroki	
Chiran	
Ishizaka (Lower Level)	Sobata Tamukeyama Todoroki
Nagano (Layer 7, 8[?])	
Ōbara Yoshida	

which they appear in the above descriptions of pottery types. Table 13 presents a possible ordering of these sites and the temporal relations of the pottery types. Given the data, it is an extremely rough example of one kind of representation of the prehistoric chronology of southern Kyushu. While the relative chronology for Kyushu is quite secure, its relation to the chronology of Okinawa and the absolute dating may require further revision.

Chapter 2

YAYOI

Jōmon culture came to an end in Kyushu with the beginning of the Yayoi culture. The Yayoi, which began between 500 B.C. and 300 B.C. and persisted until 300 A.D., was centered in northern Kyushu and western Honshu. Since its effect upon the Ryukyus was indirect, it is discussed only briefly here.

Food production in the Yayoi was based on irrigated rice. The villages were larger than those of the Jōmon, and elaborate burials, either in huge jars or in stone cist coffins, were common. Chinese trade goods such as bronze mirrors and swords were, in many cases, reproduced locally after their introduction at the beginning of the Yayoi (Kidder 1957:91). These objects have rarely been found in southern Kyushu, which seems to have experienced a gradual change from the Jōmon (Kidder 1957:90), the change never having been completely accomplished in the islands to the south. None of the large jars, agricultural tools, or bronze objects have been found in Amami or Okinawa.

The pottery was predominantly plain and wheel-made, with some painting and slipping (cf. Mori 1966:32-81). Ridges near the rims or on the shoulders of the jars are reminiscent of the Late Jōmon types and probably influenced the pottery of the Ryukyus, such as the Ushuku A Type.

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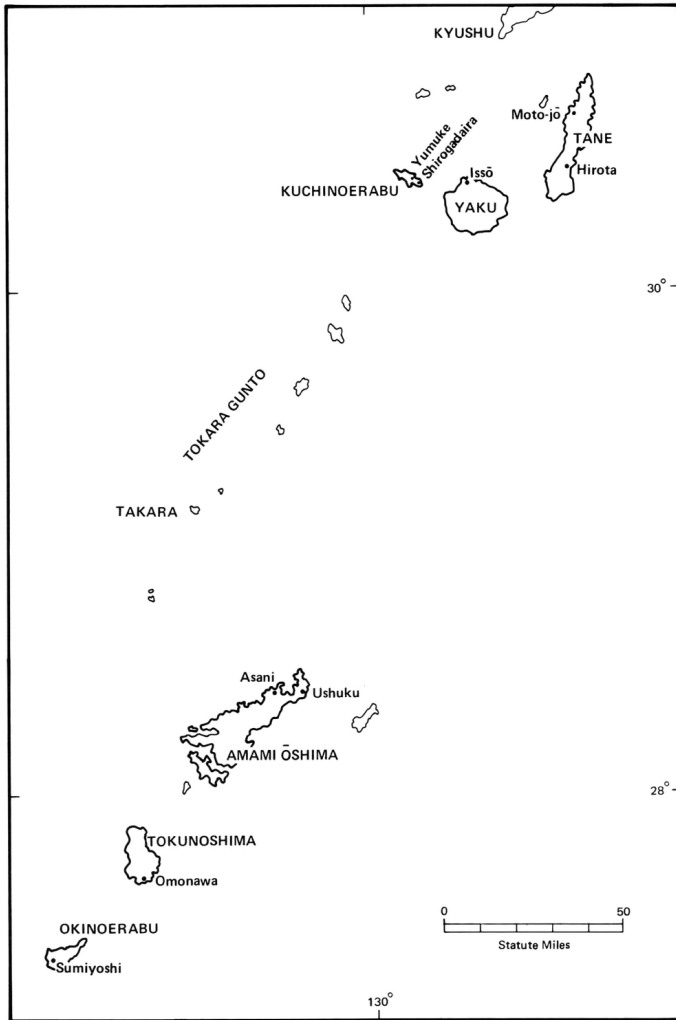
The Sequence in the Satsunan Islands

JŌMON

This chapter contains a discussion of the main islands of the Satsunan group—Tane, Yaku, and Kuchinoerabu. It is brief because the islands are small and few in number (Map 5) and excavations have only recently been undertaken. Since the Kyushu Jōmon pottery types are applicable, without further alterations, to the sites mentioned below the reader is referred to the preceding chapter for detailed descriptions.

Sobata pottery has been discovered on Tane, on a terrace site, Moto-jō, within the town of Nishinoomote. The site appears to have been occupied from Early Jōmon until the Historic Period (Morizono 1964). The same site is mentioned by Kidder (1957:83).

There is some question, however, about the occurrence of Sobata on Yaku at the Issō Site, which is situated in a long sand dune near the shore. Mori (1955) reported that most of the pottery from the dune was of the Ichiki Type, but that at the site's perimeter Sobata sherds were found. He reported the occurrence, at the very bottom of the sand dune, of Ibusuki sherds, which I have included in the Ataka Type. Morizono's excavation, however, did not yield identical results. In his analysis, he stated that the Ichiki sherds were found from the top to the bottom of the sand dune, in conjunction with Issō, black pottery with a single strand impression which may be like Nishibira (Morizono 1963a). The term *Issō* is supposed to be a temporary label (Kokubu *et al.* 1956), but it may well be used to identify a separate type or variety, since no one has challenged it. Stone plates (metates?) identical to those found in the Issō Site were



Map 5 Archaeological Sites in the Satsunan and Amami Islands

found in a Yayoi component near Miyanoura, indicating, according to Morizono, a long persistence of Jōmon food preparation skills.

Before the renewed excavations in the Amami group, various authors placed the limits of Ichiki pottery in the Satsunan Islands. Mitomo (1963b) considered the southern limit

to be the south shore of Yaku. However, two sites on Kuchinoerabu, Shirogadaira (Kokubu 1963b) and Yumuke (Mitomo 1963a), yielded Ichiki pottery. Kokubu postulated that the Ichiki sherds had been left by the early inhabitants of Kuchinoerabu, who seem to have come from Yaku, and that at some time slightly later some of the inhabitants were making Goryō pottery. After a relatively short period of occupation, the sites were abandoned because of a volcanic eruption, and covered with volcanic detritus. Another site on the same island, also excavated by Mitomo, yielded Ichiki and Goryō pottery.

YAYOI REMAINS—THE HIROTA SITE

Yayoi culture can be distinctly recognized in the Satsunan Islands, and a description of some of its major characteristics sheds light on subsequent events in the Ryukyus. One site in particular stands out as crucial in the prehistory of the Ryukyus. This is the cemetery at Hirota on Tane (Asano 1960:192; Kokubu 1959, 1960d; Kokubu and Kaneko 1964; Kokubu and Morizono 1958; Morizono 1963b:106; Nagai 1966). The spectacular finds have made this site the best known of all the Ryukyuan excavations. Although dwelling sites occur both on Tane and Yaku, and collections of artifacts may be seen in Nakatane High School in Tane, their detailed documentation is not available. The emphasis on the burial site at the expense of the dwelling areas is therefore unavoidable.

The Hirota Site, discovered after a typhoon in 1956, is on a sandy bank above the sea beach on the eastern side of Tane. Primary and secondary burials occur, and with them deer bones have been found. Up to the present, some 600 individual burials have been excavated. Ornamental rectangular shell discs or plaques bearing *T'ao T'ieh*-like designs have been found around the thighs and necks of some of the primary burials and mixed with the bones of the secondary burials, some of which show evidence of having been burned. In others, the long bones are lined up, with the skulls placed on top of them. The collected bones of children were buried on a paving made of large shells, with shell plaques. Shell beads are abundant. Kaneko states that some of the burials have been subjected to bone washing (1964:27). I personally have yet to be shown how one can distinguish archaeologically between bones which are merely secondarily buried and those which have been washed in the secondary burial procedure. One group of skeletons was buried

in stone cists surrounded by cairns of rough coral chunks. All of them, decorated with shell plaques, were females, with one exception, which Kaneko construes as "evidence for the occurrence of ritual transvestism" (Kaneko 1964:27). The use of secondary burial techniques and the formation of rock cairns over burials persist in Okinawa and Yaeyama to the present.

The removal of canine teeth was a common feature of the skeletons found at Hirota. Tooth extraction, which first occurred in Late Jōmon and persisted into Yayoi, is believed to have entered Japan from the south (Kidder 1959:94).

Bones from the lower level of the site have been dated by the Yale Radiocarbon Laboratory at $1,470 \pm 80$ years B.P. (Y-1682). This date is probably much too recent, as are other dates in which bone has been used (Tamers and Pearson 1965). The Hirota date could reasonably be set back about 500 years. If the date is corrected in this manner, the site would be contemporary with the Yayoi sites of Kyushu. The pottery, which has not yet been reported upon, is said to be the same as the Itatsuke II Type of the Early Yayoi in northern Kyushu (Nagai 1966), Taking into account a time lag between the center of Yayoi culture in northern Kyushu and a site such as Hirota on an isolated island, Hirota still comes within the boundaries of Yayoi, both temporally and stylistically. However, some of the burial artifacts, such as the shell plaques, reflect the site's position, in fact the position of the Satsunan Islands as a whole, as an intermediary zone between Kyushu and the central Ryukyus.

It has been said by Kuo Mo-jo, President of the Mainland Academia Sinica, that the shell plaques "may be due to Chinese cultural influence, probably introduced by fugitives during the Warring States Period (403-221 B.C.)" (Kokubu and Kaneko 1964:19). However, there is evidence from specimens found in earlier shell mounds to the south of Tane, for a long evolution in the Ryukyus. Similar pendants have been found in the Attabaru Site (Kokubu 1960d) which was occupied about 1400 B.C., and the Yaejima Site (Kokubu and Morizono 1958:30) dated at 710 B.C. (see Chapter 4). Other documented specimens are known from the sites of Kadena and Sachihijah (Kokubu 1960d; Plate 3d, e, f, h). They probably persisted in the Ryukyus for 1,000 years or more, and the original stimulus must have occurred long before the Warring States Period of China.

Table 14 summarizes the extent of our present knowledge for the Satsunan Islands. A major point for consideration is that the earliest pottery type, Sobata, has not been found on Kuchinoerabu, but Late Jōmon pottery is well represented, indicating

Archaeology of the Ryukyu Islands

that Kuchinoerabu was not inhabited at the time of Sobata. Yayoi remains, with some major deviations from the Kyushu types in the ceremonial inventory, reflecting connections to the south, have thus far been found on Tane.

TABLE 14

Sequence of sites in the Satsunan Islands

Sites	Types
Moto-jō (upper levels)	
	Historic Celadon Types
Hirota	
	Yayoi Remains
Shirogadaira	Goryō
Yumuke	Ichiki
Issō	Ichiki, Issō
	Ataka
Moto-jō (lower levels)	Sobata

4

The Sequence in Amami and Okinawa

Amami and Okinawa, with their dependent islets, contain most of the population of the Ryukyus and the bulk of the land area (Map 6). They constitute the heart of the Ryukyus, in which Ryukyuan culture achieved its most distinctive form. Their archaeological materials are much less well known than those of Kyushu, however, and their chronology is constructed on a less firm basis. This chapter deals with the sequence in Amami and Okinawa from the earliest remains until the time of the arrival of Chinese traders in the 13th, 14th, and 15th centuries.

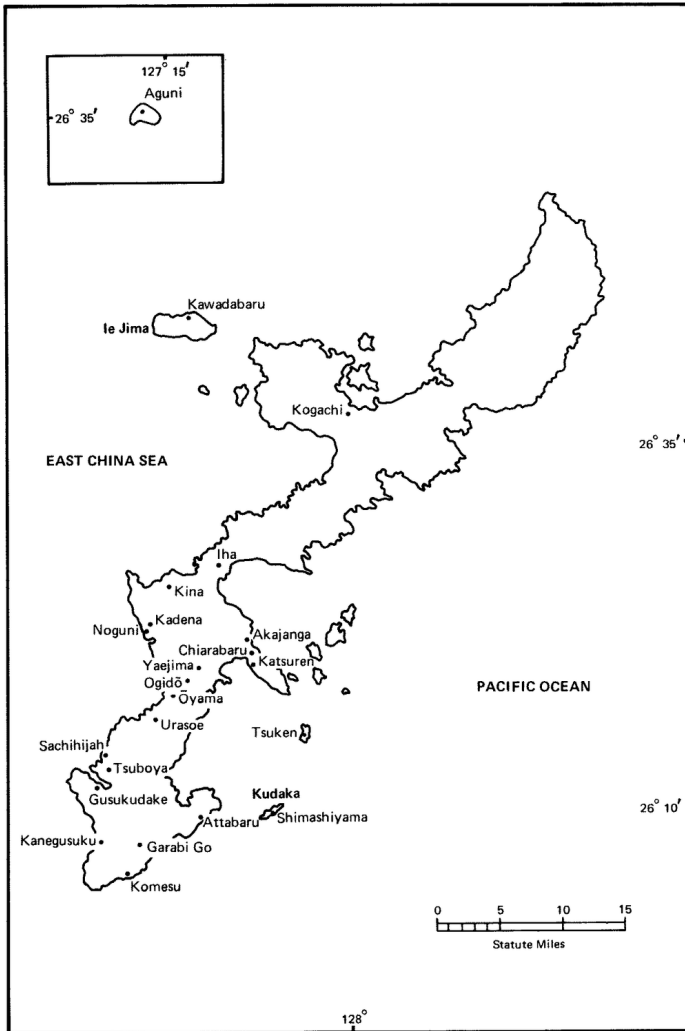
In this discussion of Amami and Okinawa I have included Takara Island (Map 5), to the north of Amami, which, except for a recent survey, has remained an archaeological *terra incognita*.

THE DEER BONES FROM IE JIMA, OKINAWA

All accounts of the prehistory of Okinawa begin with the enigmatic fossil deer bones from Ie Jima, which lies off the northern part of Okinawa. These were first reported by Tokunaga (1936a), and since that time no significant data have been added to the details of his two-page article. The original sample consisted of crudely cut pieces, mostly of deer long bones, with V-shaped notches cut into the ends. From the single photograph published in the account, they do not appear to have been rubbed or ground (Plate 3k, 1). One forked specimen was made from a lower jawbone of a deer.

Since mineralization occurs in sites as recent as Yaejima (see p. 52), the bones' age should not be estimated on the basis of this one feature alone. My survey of the area around the original find site in 1963 revealed a large number of unaltered fossil deer bones in Ryukyu limestone breccia, but there is no way of relating them to Tokunaga's deer bone artifacts short of

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Map 6 Archaeological Sites in Okinawa

fluorine testing. Other occurrences of what may be deer bone artifacts have been noted by Kaneko and Kokubu (1964:19-20), but it is difficult to establish their context, since they have been dug up by amateurs and vandals. The species to which the deer bones belong is similar to the extant small deer of Yaku (Kokubu and Kaneko 1964:19). Tokunaga (1936a) stated that the bones of five deer species, all dissimilar to those living now

in Japan, China, or the rest of East Asia, were used to make the artifacts. In the same year he reported finding unaltered deer bones in five locations in Okinawa and Miyako (1936b). The first step in solving the problem of their age is to date a series of the bones and artifacts by some absolute means (not fluorine dating). Until clearer and more abundant information can be obtained, there is no compelling reason for assuming their great antiquity. An extremely rich fossil site found in the limestone quarries of Minatogawa, on the south coast below the site of Garabi Go, may contribute abundant information to this problem. As of September 1968, human fossils have been found, but artifacts were lacking.

THE PREHISTORIC CHRONOLOGY

In the absence of deep stratigraphy and consistent ceramic classification, it is difficult to establish a chronology based on pottery types. Whereas some clear ideas concerning clustering of various features of Jōmon pottery in Kyushu were present decades ago, little effort was devoted to similar formulations in the Ryukyus. What was needed was a single deep site with adequate stratigraphy, reported with clear details concerning the context and the artifacts. These criteria are met best by the Ushuku Site in Amami Oshima, excavated by the Nine Learned Societies of Japan. Whereas in previous sections I have reviewed the known pottery types and illustrated their occurrence in recent excavations, in the subsequent sections, I introduce the sites first to show how the types may be isolated and subsequently how their position in other sites may be evaluated. Our discussion of the ceramic chronology begins, then, with the Ushuku Site. The site, situated at about 30 feet above sea level, is near a small river which enters the sea at the village of Ushuku on the Kasari Peninsula of Amami. Within the total deposit, which has a depth of 12 feet, twelve strata were recognized. Yayoi pottery, identical with that of southern Kyushu, was found on the surface near the site but did not occur in the excavation. Table 15 presents a summary of the stratigraphy.

Stone artifacts from the Ushuku site include hammerstones, polished adzes, chipped adzes, and small pebbles, from both the upper and lower levels. According to Kokubu and his colleagues (1956:146) when compared to the standard Jōmon assemblage, they present no disparity. One may ask, however, about the

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TABLE 15

Summary of the stratigraphy of the Ushuku Site

Levels 1-4	Occasional sherds of historic ceramics (Sueki, Celadon, and white stoneware).
4-8	Reddish undecorated sherds, with a small quantity of decorated sherds, in gravelly soil which appears to be a living area.
9	Stones for a hearth, burnt earth, and evidence of a house, but no post molds.
9-11	Exclusively Ushuku C and D pottery types (see pp. 51-53).
12	Sterile base soil.

lack of arrowheads which are common in Honshu Jōmon assemblages. One drilled wild boar canine, two bone awls, and a knife made from a splinter of bird bone were also reported.

In the lower levels of Ushuku, Ichiki pottery was found. The excavators felt that it is similar enough to the Kyushu Ichiki to be included in the same type. In Layers 10 and 11, two sherds of Issō pottery were recognized. On the interior and exterior of the rim there are slanting notches, and below that incision was applied. The sherds found at Ushuku are too small to permit a reconstruction of the original jar shape, but since the Issō sherds from Kuchinoerabu Island are from deep straight-sided vessels, the same shape may well apply to the Ushuku examples.

Kokubu and his colleagues established two local types of pottery-Ushuku Upper and Ushuku Lower (Kokubu *et al.* 1956:143-145). The former was considered typical of the upper layers of the site, and the latter was typical of the lower levels. Actually Ushuku Lower pottery occurs throughout the site, being most frequent in Layer 8, whereas Ushuku Upper is most concentrated in Layers 7 and 8, but is very rare below Layer 8 (Kyūgakkai Rengo 1959:207). Since there is considerable overlap, the terms Upper and Lower are not too useful. For the

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Lower type, the authors list seven variants, *a* to *g*. Two of them, *b* variant (slightly thickened rims incised with straight lines and punctates on the top of the lip) and *a* variant, comprise more than 50 percent; *a* variant itself (incisions between two convex bands, which may bear punctates, on an unthickened lip) comprises more than 20 percent in a representative area, Area E. Since they are present in relatively large quantities, with the greatest frequency in Layer 8, I have isolated them into two tentative types, Ushuku C and Ushuku D.

Ushuku C and D Types show a resemblance to Ichiki pottery more than to any other type so far encountered in Kyushu. Chronologically there is some evidence that they are contemporary with Ichiki if we consider the radiocarbon dates for these types in Okinawa. Ushuku A reflects the trend in Kyushu of a decreasing use of decoration, which can be seen from Nishibira-Kanegasaki, Goryō, and Yusu-Kurokawa. Sherds of these latter types do not occur in Amami or Okinawa.

Ushuku D Type

(Plates 1f, j; 2a, d, h; 4a-f; 5c, d, e, g, i, j)

Base Flat or pointed. Examples from Okinawa have flat bases.

Body Shape Deep, wide-mouthed jars.

Interior Scraped (Plate 2d); sometimes line of punctates (Plate 2g, i, j).

Rim May be slightly thickened.

Exterior Decoration Parallel oblique incisions on neck often confined by single horizontal lines.

Time Period Probably second millennium B.C.

Occurrence This type accounts for the majority of sherds in the lower levels of the Ushuku Site and is second in frequency to Ushuku A in the upper levels.

There is information from the Kanegusuku Site to suggest an evolution of motifs within the type. In the bottom levels of Kanegusuku, there are unthickened rims bearing simple incised designs. Takamiya (Meighan 1961:4) asserts that there is a pro-

gression from double parallel lines to single incised designs, with both forms being found in the upper levels. Also, sherds as recent as the 24-inch to 30-inch level of the Attabaru Site show double parallel incisions (Meighan 1964:Fig. 3). Since the "middle levels" (Meighan 1961:4) of the Attabaru Shell Mound have been dated by one carbon sample at 1408 B.C. and, according to Takamiya, Kanegusuku is older than Attabaru on stylistic grounds, the double line incision must be considerably earlier than 1400 B.C. Attabaru should be redated and checked for stratigraphic consistency, since not all of the pottery appears to be of the same antiquity (Takamiya, personal communication). No stratigraphic separation of double and single incision was noted in the Ushuku sample, but in the Kadena Site, single line incision is not found in the very bottom level, where double line incision does occur. This pottery must be among the very earliest in the Ryukyus and may be similar to the pottery which was brought with the first colonists from Kyushu. The type probably persisted up to at least 700 B.C., since it occurs on the Yaejima Site, which has been dated at 710 B.C. It occurs in abundance on the well-known sites of Iha and Ogidō.

Ushuku C Type

(Plates 1d, e, i, I; 2b, c; 5a)

Base Flat.

Body Shape Wide-mouthed jars of *kame* (relatively shallow) and *hachi* (relatively deep) forms.

Interior Scraping on some specimens.

Rim Castellations, small protuberances, and notching may occur; not thickened.

Exterior Decoration Majority of sherds decorated. Designs—nail impressions, parallel indentations, parallel straight and curvilinear lines—all applied with bamboo spatula. Lower portions may be scraped, but decoration itself limited to neck and upper shoulder.

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Time Period Popular at the same time as Ushuku D since they occur together on sites such as Ogidō, Attabaru, Iha, and Yaejima. Table 17 demonstrates their contemporaneity at the Kadena Site.

Occurrence It occurs in the upper and lower levels of the Ushuku Site but occurs without Ushuku A or B in Levels 9 and 10. The greatest number of sherds is in Level 8. It also occurs in the Omonawa No. 2 Shell Mound; the Omonawa No. 4 Shell Mound, East Cave; and the Omonawa No. 4 Shell Mound, West Cave, Lower Level. Sherds from the Ōbama Site, Takara Island, collected by Naomichi Ishige of the Institute for Humanistic Studies of the University of Kyoto, appear to conform to the type. They bear punctates, often in parallel rows, on the interior as well as the exterior, and the lower part of the body is plain or shell-scraped.

Ushuku B Type

(Plates 1c; 2e, f; 5f, h)

Base Probably rounded, but few specimens exist.

Body Shape Simple, straight-sided jar.

Interior No information about interior.

Rim Diagnostic thickened rim.

Exterior Decoration Simple geometric parallel incisions, or *yamagata*, between two convex bands, which may be gashed.

Time Period Popular after Ushuku C and D Types.

Occurrence It occurs in the upper levels of the Ushuku Site and in the Kaneku (Omonawa No. 3) Site. The raised band decoration may be a reflection of late Jōmon decorations from Kyushu. There is a trace of this type in the Kadena Site. It is much more widely represented in the Ōyama Site, which is considered, on the basis of pottery distribution, to be later than Kadena.

Ushuku A Type

(Plates 2k; 3c, g)

Base No complete bases found, but has been suggested that they were probably rounded (Kyūgakkai Rengo 1959:206).

Body Shape Probably a simple jar.

Interior Smoothed.

Rim Thickened, may be flat or occasionally wavy on top.

Exterior Decoration Rare, consists of single applied band or shell scraping; most sherds plain. Paste reddish or sometimes brown, with mica temper; very absorbent; surfaces easily eroded.

Time Period May be contemporary with the Yayoi of Kyushu, since it shares the applied band and lack of decoration with several Yayoi types (Mori 1966:Figs. 3, 4, 5). It persisted until after the 8th century A.D., from the evidence of the Noguni and Garabi Go Sites.

Occurrence It occurs in the upper levels of the Ushuku Site; in the Omonawa No. 4 Shell Mound, West Cave, Upper Level; and in the Noguni, Akajanga, and Garabi Go Sites. Plain pottery, with occasional ridges, occurs on the eroded Igirisuzaka Site on Takara Island. The site was one of those explored by Ishige for the University of Kyoto.

A Review of Prehistoric Sites in Amami and Okinawa and the Distribution of the Ushuku Types

The Kadena Site in Okinawa contained pottery of both the Ushuku C and D Types (Plate 5c, d). The site is located in Central Okinawa, near the coast of the East China Sea, about 63 feet above sea level. It is situated on high, slightly sloping ground, with a river in a small ravine nearby. Several other archaeological sites are in close proximity, including the Noguni Site, to be mentioned below. Excavation on the site was undertaken by Nitta and Takemoto for about ten days in December 1956 and January 1957 (Nitta and Takemoto 1960). There is a single, black cultural layer, which was excavated using artificial

divisions. Non-ceramic artifacts from the Kadena Site include adzes, bone awls, bone points which may have been used as arrowheads, shell beads and weights, and a carved, butterfly-shaped pendant.

Of a total of 2,345 sherds excavated, 243 were rims. All with flat bases, they were divided into the groups shown in Table 16. Since the report on the excavations contains more quantified data than any other report on Okinawan prehistoric archaeology, the relations between several kinds of pottery can be seen clearly (Table 17).

Three groups of pottery account for over 60 percent of the collection. They are Nos. 1, 2, and 10. No. 1 resembles the pottery from all but the bottom layers of Kanegusuku in all details but the polishing or scraping of the body. The comparison is hampered by lack of data concerning these attributes in the Kanegusuku or Attabaru Site descriptions. Plain pottery, No. 10, accounts for 17 percent of the total rims of the site.

From the Kadena inventory, Nos. 2, 4, 5, 6, and 9 fit the description for the Ushuku C Type. Nos. 1 and 3 belong to Ushuku D. Table 18 shows the contemporaneity of Ushuku C and D in the Kadena Site.

The Omonawa Shell Mounds of Tokunoshima extend over a considerable area and contain a variety of assemblages. Discovered about 1929, they have been excavated by several archaeologists; the artifacts are scattered in several institutions in Japan, with notes and reports appearing in a variety of journals. The Omonawa No. 1 Shell Mound, excavated in part by Soetsu Miyake in 1936, has since been destroyed (Kyūgakkai Rengo 1959:215). The Omonawa No. 2 Shell Mound has been excavated for a number of years. Two different excavations have produced different assemblages. For this discussion, the trenches reported by Kokubu in 1957 are designated Component 1, and those reported in the *Amami* volume and in 1956 by Kokubu are designated Component 2. The Omonawa No. 3 Shell Mound, also called the Kaneku Shell Mound, was excavated by Kawaguchi (1957b; Kokubu 1960b). The Omonawa No. 4 Shell Mound consists of the remains on the bottom of two coral caves, East and West, and a flat area in front of the caves. From Kokubu's map (1957:92), No. 5 Shell Mound is very close to No. 4. However, No. 5 is not included in this discussion.

Pottery from Component 1 of the Omonawa No. 2 Shell Mound, on the south shore of Tokunoshima, may also be included in the Ushuku C Type. The major attributes of this pottery are the straight mouth, the flat bottom, and the geo-

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TABLE 16

Pottery motifs from the Kadena Site*

1. Double parallel lines of incision (as distinct from grooving). These can be in combination with *yamagata* (zigzag lines running horizontally), castellations, or spatula impressions. There are no outer lugs or handles, and the body is polished or scraped.

2. Double parallel rows of punctates, 60 percent of which are composed of slanting rows. Some sherds have bent-line incisions on the body, and the sides have been scraped.

3. The decoration is composed of single lines, more like grooves, made with a simple wide stick. The firing is rough, and there are small stones in the paste.

4. Decoration consisting of curving grooves.

5. Large square punctates in rows.

6. Decorations consisting of deep circular punctates.

7. A *kame* or wide-mouthed jar which is shell-scraped and flat-rimmed. The surface is black and the pottery is harder than the other kinds. These are said to be identical to Jōmon sherds from Kyushu.

8. Convex band design applied near the mouth. On top of the band there are oblique incisions. The clay contains some small pieces of andesite, and the color of the pottery is light brown.

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9. Deep punctates made with a sharpened triangular stick. There are also parallel lines slanting from right to left.

10. Plain pottery of the *tsubo* (narrow-mouthed jar) and *hachi* (deep wide-mouthed jar) shapes.

**after Nitta and Takemoto (1960:51).*

TABLE 17
*Distribution of pottery motifs from the Kadena Site**

Motif (from Table 16)		1	2	3	4	5	6	7	8	9	10	Total
Surface Layer	Number	20	22	4	7	0	4	2	0	2	10	71
	Percent	25	30	6	10	0	6	3	0	3	14	100
Layer 1	Number	49	23	13	7	2	4	2	2	0	18	120
	Percent	40	19	11	6	2	3	2	2	0	15	100
Layer 2	Number	9	20	0	0	2	2	0	0	0	16	49
	Percent	19	41	0	0	4	4	0	0	0	32	100
TOTAL	Number	78	65	17	14	4	10	4	2	2	44	240
	Percent	32	27	7	7	2	4	2	1	1	17	100

**adapted from Nitta and Takemoto (1960:51)*

metric decoration executed with a spatula or half-section of bamboo. Nail impressions and short incised lines, *yamagata* patterns, and punctated dots are usually applied to the upper portion of the vessel. The decoration is said to be suggestive of Sobata, but in the final consideration Kokubu concludes that it is much later in time than the Sobata of Kyushu. The evidence from Kokubu's trenches of 1955 (Kokubu 1957:91-92) indicates that this component seems to have had one continuous occupation. The shell accumulation does not exceed 3 feet.

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TABLE 18

Distribution of Ushuku C and D Types in the Kadena Site

		Ushuku C	Ushuku D
Surface Layer	Number	35	24
	Percent	49	31
Layer 1	Number	36	62
	Percent	30	51
Layer 2	Number	24	9
	Percent	49	19
TOTAL (from all layers)	Number	95	95
	Percent	41	41*

**Percentages are approximate, because the fractions of percent are ignored. This total is actually 39 percent.*

From the Omonawa No. 4 Shell Mound, East Cave, there appears to be information that Ushuku C flourished in popularity earlier than Ushuku D. Within each layer of the East Cave, Ichiki pottery occurred. The non-Ichiki pottery changed from predominantly fingernail impressed in the lower layers to mostly incised in the upper layers. At present, this is only a suggested evolution which should be checked with further excavation.

The Aguni Shell Mound, on the island of Aguni, which is to the west of Okinawa, yielded a radiocarbon date of 760 B.C on a sample from a depth of 33 inches. The site yielded pottery which might be considered to be Ushuku C. Although the Aguni Site is on an outer island, it is in a high, forested location near the center of the island, protected from the east by a high limestone cliff. The pottery sample reported by Nitta (1961) is extremely small.

The Ōyama Site excavated by Kagawa in 1957, is located on a coral limestone ridge near two small rivers on the east side of Okinawa. One edge of the site, against a cliff of limestone, contains a shell deposit about 3 feet in depth. A few

yards lower than this area there is a deposit of shell and debris in which Kagawa and Tawada (1959:81) recognized five strata, numbering them from the bottom. I have reversed this order of numbering to make it consistent with the other sites reported here. They distinguished several kinds of pottery and within each kind several varieties (Table 19).

Nowhere in the report is the total number of sherds divulged, nor is the percentage of any one kind of sherd in each level reported. Table 20, showing the presence and absence of each kind by level, excluding the surface finds, is an adaptation of the chart included in the report.

The second kind corresponds to Ushuku C Type; it occurs in the lower levels of the Ōyama Site. The third and fourth kinds fall into the Ushuku B Type, and the fifth and sixth kinds may be subsumed under Ushuku A, which is a later type and has been termed by Tawada the Kayauchibanta Type (Kagawa and Tawada 1959:89). The Ōyama Site was considered by its excavators to represent the middle period of the prehistoric chronology of Okinawa (Kagawa and Tawada 1959:78, 79).

The Omonawa No. 4 Shell Mound, Front Area, also contained pottery which can be included in the Ushuku B Type. It bears convex bands with incising between them on an unthickened rim. However, nail impression does not occur. The non-ceramic assemblage from the Front Area included fragments of polished adzes, chipped adzes, hammerstones, and one sickle-shaped stone implement.

Two of the Omonawa Sites produced Ushuku A pottery in large quantities. The Omonawa Shell Mound No. 2, Component 2, may be divided roughly into two levels, Upper and Lower. Incised pottery with parallel oblique lines, identical to Ushuku D, occurs with the greatest frequency in the Lower Level. Two further variants, punctated and nail impressed, which can be included in Ushuku C, also occur in the Lower Level. As in the Ushuku Site, plain pottery is most common in the Upper Level. This may be termed Ushuku A. Thus, Omonawa Shell Mound No. 2 might be divided into two components, 2a (Upper) and 2b (Lower).

From the Omonawa No. 3 Shell Mound, sometimes called the Kaneku Site, which lies to the east of the Omonawa No. 4 Shell Mound by about 550 feet, brown, well-fired, shell-or sand-tempered pottery with flat bottoms and rims with a triangular cross-section were found in considerable quantity. On the neck there may be impressed designs, *yamagata*, or applied bands, but since all of these decorations are rare, the bulk of

TABLE 19

Description of pottery from the Ōyama Site

1. Brown in color, soft, and relatively rough in texture. Small punctates in single or double rows occur on a thickened collar, as well as oval appliques. The pottery looks like the Late Jōmon pottery of southern Kyushu, but because of the small number of examples, the authors decline to make any detailed comparison (Kagawa and Tawada 1959:83). The body usually swells in the mid-portion and may be polished as well as scraped. The foot is relatively small and narrow.

2. Pottery with a decoration consisting of rows of square punctates, usually double parallel rows of two or four, with grooves between them. There may be punctates in the grooves, leaving plain bands between them. Interior and exterior scraping occur.

3. Small horizontal dashes near the mouth are the main trait of this kind (Plate 5a). There are also grooves made by using the finger, and horizontal impressions. Slanting incisions may occur on a convex band, or zigzag incisions may occur in rows immediately below the mouth. This kind could be subsumed under Ushuku B.

4. Pottery with convex bands on the collar or two rows of punctates around the mouth (Plate 5f). Another variant included two rows of dashes between which there are slanting incisions. Part of the slanting incision occurs on a convex ridge. The shape of the vessel is different from those above. The sides slope inward directly from the mouth, with no middle bulge. The interior and exterior are scraped. This is closely related to Ushuku B or C.

5. The pots have a thickened collar well defined by a slight groove at the boundary of the neck. The decoration consists of curving lines composed of long dashes. Other varieties are absolutely plain, with interior scraping. The clay is fine

and the firing relatively even. Some of the varieties of this kind compare with Yayoi examples (Kagawa and Tawada 1959:85).

6. Thickened rims without decoration. The rim area has one convex band. For this kind of pottery there is no base reconstruction. The surface is polished. This type is also said to reflect Yayoi influence.

TABLE 20
*Distribution of pottery from the Ōyama Site**

Level	Kind					
	1	2	3	4	5	6
1					X	X
2		X	X	X	X	
3		X	X		X	
4	X	X				

*from Kagawa and Tawada (1960:88).

this pottery may be assigned to the Ushuku A Type. Kawaguchi, who excavated the site, says that the pottery is similar to that of the Omonawa No. 4 Shell Mound in front of the caves and to the pottery from the Omonawa No. 2 Shell Mound (1957c).

The Akajanga Site was excavated for five days in 1959 by Takamiya (1960). It is situated on sandy soil at about 6 feet above sea level near the village of Gushikawa, on the west coast of Okinawa, north of the Katsuren Peninsula. It is protected from the sea by a high limestone ridge. The site appears to have had only one occupation, as Takamiya distinguishes only a surface layer containing modern material, an artifact layer, and a white sand base layer. The jars have wider mouths than those of the previous sites; the small-mouthed *tsubo* was found in only three cases. Only one example of rim thickening was found. The kinds of pottery described in Table 21 were isolated.

The distribution of sherds shows considerable changes from Ōyama. The percentages in Table 22 are approximate. Although decorated sherds show a general decrease, incised and grooved sherds are still found. The other types, such as were found at Ōyama, have been reduced to a trace. Another visible trend is the presence of one pointed base and several rounded ones. These forms are distinctly absent in the earlier sites.

A further reduction in the variety and abundance of decorated pottery took place by the time of the occupation of the Noguni Site, which was excavated early in 1959 by Junius Bird and Gordon Eckholm of the American Museum of Natural History. It is situated on the west coast of Okinawa, very close to the Kadena Site, in an exposed cave a few feet above sea level.

From the bottom layers of the site were found six coins of the K'ai Yuan T'ung Pao type. These coins were made at several different times during the T'ang Dynasty of China (618 A.D. to 907 A.D.), but from stylistic evidence, they may be assigned to the reign of Te Tsung (780 A.D. to 785 A.D.) (Gibbs 1944:No. 8). Tawada is said to have "obtained" Sung coins from the Noguni Site, but as usual no provenience is given (Kagawa and Tawada 1959:89 note 3).

In the excavation, the site was divided into 17 layers, based partially on natural stratigraphy and partially on arbitrary levels. My analysis of the total sample of 3,977 sherds is given in Table 23.

Out of a total of 205 rims, 165 (or 80 percent) are plain, with or without lip notching. This demonstrates a continuing trend toward plainness in Okinawan pottery and the rise in popularity of the Ushuku A Type. Several of the classes established by Takamiya for the Akajanga Site (Nos. 5-9) are not present at all in the Noguni assemblage. Shell-tempered sherds bearing strong resemblances to the pottery of Yaeyama appear in the upper layers. It should be pointed out that the upper layers of the site, as far down as Layer 9, have suffered some disturbance. From the lower levels of the site, a variant of the plain pottery, with a thin strip of clay pasted over the lip, was found in small quantity. Entirely new shapes such as a pouring spout (Level 13), a bottle (Level 10), and a small crude bowl (level unknown) were also present. From the upper levels, there are a few sherds of stoneware and glazed Tsuboya ware and the hollow foot of a soft orange unglazed tripod vessel, which are probably related to later tomb-building activities within

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TABLE 21

*Pottery from the Akajanga Site**

1. Undecorated, light brown in color, with a reddish interior. Spatula scraping is quite common on the lower part of the vessel, and the clay is quite gritty. Incisions may occur on the lip. The type approaches Ushuku A.

2. Sherds decorated with curved grooves, including curved meanders between straight lines or curved grooves with punctates below.

3. The decoration consists of convex bands in curvilinear or rectilinear designs on the rim.

4. Straight-line incision or *yamagata*. The lips may be punctated or gashed. The type approaches Ushuku D.

5. Fingernail or semi-circular punctates, usually in a single row along the neck. The mouth is extremely outcurved. Below the incisions there may be a single line of punctates.

6. Small, rare sherds, with a thickened lip which may be incised on the top. From the size of the sherds, further design elements cannot be determined.

7. Sherds decorated with a curving line made from short incisions so that there are small bumps within the groove.

8. Sherds with a horizontal bar or dash design. The lip also has incisions and is slightly flaring. The inner surface has not been smoothed to the same degree as the outer surface.

**from Takamiya (1960:70-75)*

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TABLE 22
*Distribution of pottery from the Akajanga Site**

Kind		1	2	3	4	5	6	7	8	?	Total
Level 1	Number	54	27	20	1	0	0	0	0	0	102
	Percent	53	26	20	1	0	0	0	0	0	100
Level 2	Number	157	99	52	16	10	3	4	2	1	344
	Percent	44	27	17	6	3	1	1	1	0	100
Level 3	Number	12	5	4	1	0	0	2	0	0	24
	Percent	49	21	17	4	0	0	9	0	0	100
TOTAL NUMBER		223	131	76	18	10	3	6	2	1	470
TOTAL PERCENT		47	28	16	4	2	1	1	1	0	100

**from Takamiya (1960:Table 3)*

the cave. A Japanese coin of 1644 was found on the surface. Whereas 90 flat-bottomed sherds were found at Noguni, only three pointed or round-bottomed sherds occurred.

The Noguni Site, with the T'ang coins at the bottom of the deposit, constitutes the most clearly dated site within this time range.

A site representing yet a further step from Noguni is the Shimashiyama Site, on the eastern coast of Kudaka Island, which lies to the east of Okinawa (Kokubu 1960c). The site is situated behind a protecting dune but is still relatively exposed to the Pacific. Lenses of sand in the culture layer may have been deposited by strong winds or typhoons during one continuous occupation of the site. In the pottery, pointed bases become more common, and there are many narrow-mouthed as well as broad-mouthed jars. There are also examples of elevated stands and one example of a flat dish. Simple curvilinear decoration and sharply incised lines occur on the upper part of the mouth (Plate 3c, g), but the decorated specimens are very few in relation to those which are completely plain. There are no clear examples of shell scraping, but some of the sherds bear the imprints of

TABLE 23
Distribution of sherds from the Noguni Site*

Level		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	12+13	13+14	Total	
Body sherds	Number	364	434	10		151	63	30	39	28	127	177	420	481	210	230	425	241	49	187	3666	
	Percent	92	93	58		88	77	86	91	90	92	91	94	92	93	94	92	95	89	99		92
Shell-tempered body sherds	Number	4	2	2								3										11
	Percent	1		12								2										
Flat-bottomed sherds	Number	7	12	4		6	10		2	3	4	1	12	12	4	6	3	4				90
	Percent	2	3	24		4	12		5	10	3	5	3	2	2	2		2				2
Pointed-bottomed sherds	Number																		2			2
	Percent																		4			
Rims (see Table 23a)	Number	9	17			13	7	5	2		4	13	12	30	12	9	35	9	5	1	183	
	Percent	2	4			6	7	11	5		3	87	2	6	5	3	7	4	10			5
Trade or intrusive	Number	10																1				11
	Percent	2																				
Other forms	Number	1	1			1	1					3	2	2			1					12
	Percent											2										
TOTAL NUMBER		395	466	16		171	81	35	43	31	135	197	446	525	226	245	464	255	56	188	3875	
TOTAL PERCENT		10	12			4	2		1	1	3	5	11	13	6	6	12	7	2	5		100

a bunch of fibres used for wiping or rubbing the vessels while they were slowly being turned. According to the author, some of the spatula impressions on the mouth show similarities to the pottery from the upper levels of the Ushuku Site (Ushuku A?).

On Tsuken Island, which lies to the east of Okinawa and to the north of Kudaka, a site similar to Shimashiyama was excavated for six days in 1956 by Takemoto, with the assistance of a group of students from the University of the Ryukyus. The habitation area is in sand dunes near the beach. Four layers were recognized; the second and fourth bear the same kinds of artifacts but are separated by a layer of sand. From a total of 37 base sherds, 30 were round or pointed. Convex bands, *yamagata*, deep punctates, and spatula impressions occur, but these constitute a distinct minority. An early site similar to Ogidō or Iha existed on Tsuken but was destroyed by military operations after the close of World War II.

Artifacts similar to those of the Tsuken Site were excavated from the Komesu Site on the southern shore of Okinawa (Kokubu 1957).

*Where percentages are not given, they are less than 1%

The Garabi Go Site, which I tested in 1963, is in a huge cave in the hills behind the fishing village of Minatogawa in southern Okinawa (Plate 18b). Shell samples from this shallow site have been radiocarbon dated at 760 ± 60 A.D. The sherds from this site are small and scarce. They are heavily weathered but are not particularly friable. Their hardness on Moh's scale is approximately 2. The surface color is predominantly buff grey, a few sherds with blackened surfaces constituting the only ex-

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TABLE 23A

Detailed distribution of rims-total sample, 183

	Number	Levels of provenience
Plain everted rims	160	1,2,5-8,10-17, 12+13, 13+14
Notched rims	6	5, 12, 15, 16
Incised rims	2	12+13
Incised lip-notched rims	5	5, 12, 15, 16
Plain rim with strip applique	3	15, 16
Castellated rims	1	12
Rims with punctated lips	5	5,6,11
Rims with curving groove decoration	1	3

ception, and the interior of the sherds is primarily grey. The temper appears to be very finely ground shell, and the surface has been wiped prior to firing. The thickness varies from 5 to 8 mm.

As far as can be determined from the small sherds, there are no vessels as large as those represented in Noguni. A single form, a small pot with a flat base, constitutes the entire sample. The base has a slight constriction above the flat bottom. The bottom of the base may be slightly concave, and the diameters of the two examples are roughly 6 cm. each.

A single rim shape, undecorated, with a lightly flaring lip and constricted neck, was found. There appears to be some variation between the relative thickness of the lip and of the neck, but this is very slight.

The ceramic assemblage from Garabi Go may give some clue as to the nature of the settlement in the cave. The range of pottery does not show the variety which is evident from the roughly contemporary sites such as Noguni and Komesu, although from the shell debris there is evidence of a prolonged occupation rather than some strictly ceremonial or burial use.

There is no notching or stick impression such as that found at Noguni or Komesu, nor are there any representatives of many of the shapes.

Garabi Go could represent a second settlement type within the sites of its period. It is my conclusion that it was used as a refuge cave during typhoons or perhaps during the coldest days of winter. Since the main path of the typhoons is from the south, it would provide protection for those living in nearby villages on the exposed southern shore of Okinawa. The presence of abundant shell refuse would rule out the possibility of the cave's being strictly ceremonial, although at present there is a shrine in the depths of the cave.

Table 24 summarizes the site data of this chapter and presents a preliminary ordering of the types and sites. The quantitative data for Kadena, Ōyama, Akajanga, and Noguni demonstrate the reasons for assuming that Ushuku A and B had periods of popularity distinct from Ushuku C and D. The development of Ushuku A was probably brought about by the same trend to plain pottery which marked the introduction of plain pottery in Kyushu—the beginning of the Yayoi. However, the pottery types which resemble the Jōmon pottery of Kyushu, Ushuku B, C, and D, persisted for a long time as minority wares, appearing on such later sites as Akajanga and Noguni. Following the occupation of Noguni and Garabi Go, increased contacts with China and Japan brought about a dramatic change in the artifact assemblage of Okinawa and Amami and led to the introduction of writing to the Ryukyus. Several sites, Iha, Ogidō, Gusukudake, Sachihijah, and Sumiyoshi, are not included in these tables because they are not discussed in detail in the text.

THE HISTORIC CERAMIC CHRONOLOGY IN AMAMI AND OKINAWA

From the remains of Amami and Okinawa, many historic types of ceramics, overlapping on specific sites in the same manner as the prehistoric types, may be identified. I have attempted to construct a series of types, each of which includes the products of one kiln or a group of kilns. Although the majority of the ceramics are from China or Japan, some were made in Okinawa also. Since the technical processes of creating the ceramics are so different from those used in making the prehistoric pottery of the Ryukyus, slightly different distinguishing criteria are used in describing them.

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TABLE 24

Summary of prehistoric sites from Amami and Okinawa

1.	Sites containing only Ushuku A (latest in the sequence)	Shimashiyama, Tsuken, Komesu, Garabi Go, Omonawa No. 3 (Kaneku).
2.	Sites containing primarily Ushuku A	Noguni (trace of C, D).
3.	Sites containing Ushuku A, B	Akajanga
4.	Sites containing only Ushuku B	Omonawa No. 4 Front
5.	Sites containing only Ushuku C	Omonawa No. 2 Comp. 1, Omonawa No. 4 West Cave, Ōbama Takara Island, Aguni, Ōyama.
6.	Sites containing Ushuku C and D (early in sequence)	Attabaru, Yaejima, Kadena
7.	Sites containing only Ushuku D (early in sequence)	Kanegusuku
8.	Sites containing Ushuku A or B, C and D (long occupation)	Ushuku, Omonawa No. 2 Comp. 2, Omonawa No. 4 West Cave.

Chapter 4

The first examination of the trade ceramics of Okinawa that placed them in a context of Chinese trade with the rest of East Asia and Southeast Asia was made in 1937, when Itō and Kamakura compared the ceramics found in the Celebes with those from the castle sites of Urasoe, Katsuren, Nakagusuku, Shuri, Teruya, and Nanzan (Ōzato) (Itō and Kamakura 1937). In 1960, G. Kerr of the Honolulu Academy of Arts undertook a detailed examination of the historic period sites yielding trade ceramics. On Okinawa, 114 sites were located. A further investigation of Yaeyama and Miyako in 1962 and 1963 yielded 200 sites.

Tawada (1961) presented a general outline of sherds from over 40 Ryukyuan sites which were examined by Fujio Koyama and were divided according to the general area of manufacture and dynasty during which they were made.

The first intensive excavation of a site of the historic period, the Katsuren Castle Site on the east coast of Okinawa, was undertaken by Takamiya for the Commission for the Protection of Cultural Assets of the Ryukyu Islands (Ryukyu Seifu Bunkazai Hogo Iin Kai 1965). The site is located on an outcrop of limestone about 300 feet above Nakagusuku Bay, the shore of which is close to the flat land below its southern edge. The northwest corner of the site was first tested by Ōkawa and Tawada (Tawada 1961). The artifact inventory is a long and complex one. The chief items are shell pendants, bone artifacts for weaving, stone amulets, axes and wedges, three kinds of locally made pottery, iron arrowheads, knife blades and scrap, coins, roof-tiles, porcelain, and stoneware. Of the latter, celadon occurred in the form of dishes (large and small), bowls (large and small), mixing bowls and tea bowls, flower vases or wine bottles, and large pots; grey celadon was in the form of bowls and plates, and white porcelain was in the form of bowls for tea, regular bowls, plates, and small cups. Blue and White Ware and enamel ware and a few sherds of what Takamiya believes to be Sawankhalok Ware were found. Temmoku stoneware and jade beads were also recovered.

During my fieldwork in Okinawa, I was fortunate to be able to study a sherd collection which had been made several years before from the upper area surface of the Katsuren Site. The data on the collection are incorporated into the following descriptions.

Celadon: Katsuren Type

(Plate 8a-k)

This is a particular form of green glazed stoneware which was collected from the Katsuren Site, known from historical sources to have been a rich and important center.

Base Consists of low foot ring glazed carefully on surface on which bowl rests. Inside foot ring is circular disc of glaze between 1.5 and 2 cm. in diameter on bottom of bowl. Unglazed portions of bottom in many cases ferrous colored.

Paste Crystalline whitish grey.

Glaze Thick, often reaching 2 mm., with dull and somewhat granular finish. Few sherds with rough crackle which appears to be secondary (Hetherington 1948:93). According to the Ridgway classification (Ridgway 1912), glaze may be celandine green (33""b), pea green (29""b), or tea green (25""b).

Shape Small plates, large jars, small and large bowls. Most of small plates have slightly everted rims. Large jars with elaborate covers and extremely solid feet must have been imposing luxury items; not found on less important sites such as those in Yaeyama. Bowls have straight or everted rims, with mouth diameter about 15 cm. Large bowls massive and shallow, with thickness 1 to 1.8 cm.

Rim Two forms occur on large bowls. First is horizontal, soup-plate lip; second is straight rim with slight overhang.

Decoration Underglaze incision very common on sherds of Katsuren Type. Small bowls may have lozenge or petaloid underglaze incisions in interior; exterior may be decorated with single or double line or lotus petals. Large plates may have lozenge or petaloid underglaze incisions; exterior may have single or double line.

Time Period From thickness and color of glaze, careful manufacture, and occurrence on fully developed historic sites, this type should probably be placed no later than the Early Ming (14th and 15th centuries).

Occurrence This type has been recognized only in the Katsuren collection. The glaze occurs with such regularity on a uniformly constructed form that it must have been the product of a single kiln and a rigid selection procedure. The kiln was probably one of a group near Lung Ch'uan, Chekiang, China.

Unglazed Pottery: Katsuren Type

This pottery has been divided by Takamiya into three classes. The first is said to be related to the pottery of the earlier Okinawan shell mounds and is very low fired. The rim sherds may be decorated with horizontal zigzag lines. The second kind is a wheel-made ware, with a dry and powdery surface and fine shell tempering. The third kind, also very weathered, has shell tempering.

Time Period May have persisted throughout the historic period.

Occurrence Such pottery has been found in small quantities in the surface collections from Katsuren and Urasoe.

Celadon: Type B

(Plates 61, r, s, x; 14a-d, g)

Base Most common base form is relatively low, thick, and bevelled on outer edge of ring foot. A rarer base form, which appears on large plates from the Urasoe Site (Plate 6x), is not clearly demarcated from the body of the vessel, so that a "hole bottom" effect is produced, although not as pronounced as that of some trade ceramics found in the Philippines. Not found on Yaeyama sites, which are mentioned in the next chapter. Glaze covers bottom of foot ring in most specimens and foot ring interior may be covered with pinkish oxide. Bottom of foot ring often filed smooth.

Paste White and crystalline, although occasional yellowish or reddish specimens occur.

Glaze May approach 2 mm. in thickness and be bubbly or cracked. Color tends to be bluish green.

Shape Sherds immediately notable for variety of forms, in contrast to Hateruma material, in which a small bowl only form found. From Urasoe collection, large storage jars, large plates, and small bowls represented. Rims of bowls all at least slightly everted. Large plates may have foot ring interior diameters 10.5 cm. or 13.2 cm.

Decoration All rims of small bowls undecorated. A very few have floral underglaze imprints in the bottoms.

Time Period Probably manufactured and traded to Okinawa in the Late Sung, Yuan, or Early Ming. Koyama has identified many sherds of this type from Urasoe as Chekiang celadon made during the Late Sung and Yuan Dynasties (Tawada 1961:1, 2).

Occurrence This type of celadon is common on the Urasoe Site and other historic sites such as Ōzato Castle in southern Okinawa. From the Maegome Site on Takara Island, Ishige collected sherds of the same type.

Celadon: Type A

(Plates 6m, u; 7j, I, m, n; 13h)

Base Usually lacks filing or bevelling; foot ring comparatively high.

Shape Only small bowls.

Paste Pinkish orange, with coarser texture than that of early type. Tiny air pockets visible in clay.

Glaze May be pitted or show uneven drip marks near rim. Occasionally does not cover rim completely. Colors present: court grey (29""f), light greyish olive (21""b), light olive grey (23""b), and Niagara green (41""b).

Decoration Completely lacking underglaze incision or any other decoration.

Time Period This type appears to be Mid-Ming or Late Ming, but this conclusion is tentative.

Occurrence Sherds of this type are common on the Asani Site, a large midden several hundred yards inland from the beach community of Asani, which lies to the north of Nase in Amami Ōshima. It appears to have been disturbed in the upper layers (Plate 18a). A test pit approximately one yard square and four feet deep was excavated, and all the remains were saved. Many of the celadon sherds from Asani match those illustrated by Palmgren from the site of Ta Tzu Ch'i K'o and other sites around Ch'u Chou (Palmgren 1963:137). They do not have the watery color and the very pronounced crackle that is associated with the wares of the Ch'ing Dynasty which are so abundant in Taiwan. One base sherd from Urasoe may also be of this type. The interior paste is orange-pink, and the bottom of the foot has been coated with oxide. From the excavation of Asani, a wide range of Late Ming ceramics was observed.

The distribution of the excavated sherds is shown in Table 25. The aberrant sherds consisted of a single sherd of overglaze painted stoneware and a sherd of multicolored Tsuboya Ware. The former has a porous buff paste with dark brown painting on a white glaze. Because of its position on the surface, it could be as old as the celadon or as recent as the present century. From the nature of the paste and the thickness of the rim, it does not seem to be related to the Kyushu wares, such as Imari, shown in Plate 14j.

Glazed Stoneware: White Type

Base Foot completely unglazed, neatly finished. One specimen has completely flat base, rather than foot ring.

Shape Small bowl and bottle or jar.

Paste Whitish grey, grey inclusions, minute air pockets.

Glaze Uncracked, with minute bubbles. One specimen has very gritty glaze.

Decoration Underglaze circle on bottom of interior, also light combed underglaze.

Time Period This type was probably produced during the Ming. One base, illustrated by Palmgren (1963:293), resembles sherds from Ch'ing Ho Hsien, Hopei Province, but I hesitate to identify it conclusively from lack of experience with these wares (Plate 7c).

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TABLE 25
Distribution of sherds from the Asani Site

	6 inch levels									Total
	S	1	2	3	4	5	6*	7	8	
Celadon (Type A)	7	2		1	3	1		1	1	16
Blue and White (Imari)	14	9		1	2	3		3	2	34
White Glazed Stoneware	1				4	2		1		8
Brown Glazed Pottery	2	3					5	1		11
Brown Glazed Stoneware	9	2	2		5					18
Unglazed Grey Stoneware	15		2	1	1	1		1		21
Aberrant Sherds	1	1								2
TOTAL	49	17	4	3	15	12		7	3	110

**The sherds from Level 6 of the test excavation were lost in shipment in Amami.*

Temmoku Type

(Plate 81-q)

Base All about 4.2 cm. in exterior diameter. Have slight coating of oxide which gives them buff color. At edge of foot ring where it joins bowl joint very clearly demarcated, as if it were cut.

Shape Small tea bowl. All examples extremely uniform in size and general construction.

Paste Light grey, relatively fine in texture.

Glaze Brownish, with iron streaks typical of all temmoku; not as metallic-looking as Fukien Chien (temmoku). Thickness of glaze may reach 1.5 cm. in bottom of bowls. No extra decoration similar to that seen in Fukien Chien examples.

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Time Period It is extremely difficult to date these specimens, since their provenience is not absolutely clear.

Occurrence Temmoku sherds are known from Urasoe and Katsuren. Takamiya (Ryukyu Seifu Bunkazai Hogo Iin Kai 1965:51) attributes them without question to the kilns of Fukien which produced the famous Chien ware of the Southern Sung. However, the Chien wares were highly prized in China and were not usually made for export. Temmoku sherds from Urasoe, when compared to the Yale Peabody Museum collection of 75 Chien pieces, showed very striking differences. The body of the Okinawan examples is not dark enough, nor the foot small enough, nor the glaze thick enough to be Fukien temmoku. Those found in Okinawa compare favorably in glaze with sherds from Santubong, Borneo, which are ascribed by Harrisson (1954:9) to Annamese kilns. The suggestion of J. Pope of the Freer Gallery that the carefully cut foot may indicate they were manufactured in the Seto kilns of Japan appears to be the most acceptable, taking into consideration the close similarities in paste, form—even the size of the foot—to Seto examples.

Underglaze Blue and White: Ming Type

(Plates 4g; 6a-j, v, w; 14e)

Base Thin, well finished One example from Urasoe resembles Swatow or South Chinese wares rather than classical products of Ch'ing Te Chen, on basis of its sandiness.

Paste White, crystalline.

Shape Since sherds from Urasoe are so few and small in size, shapes cannot be reconstructed. From Katsuren, medium-sized bowls, tea bowls, jars and lids recognized (Ryukyu Seifu Bunkazai Hogo Iin Kai 1965:44).

Glaze Opaque white, no particular features noted.

Time Period Probably reached Okinawa during Early Ming.

Occurrence Blue and White is rare in the Ryukyus, comprising only 6 percent of the trade porcelain from the Katsuren Site (Ryukyu Seifu Bunkazai Hogo Iin Kai 1965:44) and a trace on other sites such as Urasoe.

Unglazed Stoneware: Early Type

This type is represented at the Urasoe Site by sherds of a dark red paste with a dark grey outer surface. On some other sites, the pottery is designated as Sueki although it shares few characteristics with the classical Sueki of the Tomb Period of Japan. While the shape remains difficult to reconstruct, a rim from the Urasoe Site, decorated with horizontal incised lines and meanders, appears to be from a large bowl or basin. Small body sherds also occurred in the Asani Site.

Glazed Stoneware: Black Type

(Plate 141)

Base Flat and unglazed.

Paste Generally grey, although buff also occurs.

Shape Large water jars or storage jars, sometimes bearing horizontal strip applique handles.

Glaze Dull black, glassy, very finely crackled. Brown tones occur on the most severely weathered sherds. Surface of glaze very smooth; interior surface of sherds may be covered with same glaze, reddish brown glaze, or left plain.

Decoration Absent except for occasional raised ridge around necks of large jars.

Time Period Since there are no data concerning the place or date of manufacture of this type in China, it is difficult to assign a precise time period to its appearance in Okinawa. It may have been produced from the Late Sung to the Early Ming.

Occurrence Abundant on most of the historic sites of the Ryukyus, this type must have been traded in great quantities to every island to serve as containers for oil or water. It is common on the Katsuren and Urasoe Sites.

Glazed Stoneware: Grey Type

Base, Shape, Decoration These attributes not known because of small sample of sherds.

Paste Grey with black flecks.

Glaze Reduced iron glaze in which ferric oxide crystals cause blue streaks through refraction.

Time Period Probably Yuan to Early Ming.

Occurrence The sherds occur on the Urasoe Site.

Glazed Stoneware: Brown Type

(Plates 7a, d, i, k; 14k)

Base Flat and unglazed.

Paste May be orange-red, buff, or dark red-brown. Sherds are of medium hardness, perhaps between pottery and stoneware.

Shape Only form appears to be water jar with small horizontal or vertical strip applique handles.

Glaze Dull opaque brown, relatively thin, free from crackling. Interior of sherds finished roughly with incompletely fused glaze or no glaze at all.

Decoration Absent.

Time Period From its association with the early type of celadon, this type was probably manufactured in the Early Ming.

Occurrence Occurs in abundance in early historic sites, such as Urasoe and Katsuren. Quite likely it is of South Chinese manufacture, although because of utilitarian and inexpensive nature, it has escaped mention in the literature on Ming porcelain or stoneware.

Underglaze Blue and White: Imari Type

(Plates 4h; 7b)

Base Ring feet, about 6 mm. in height, completely glazed.

Paste White, very hard, crystalline.

Shape Most common forms are bottles or small tea bowls with straight rims.

Glaze Relatively opaque white; underglaze painting sometimes tends to be greenish.

Decoration Freely painted flowers common from Asani Site; bottles with geometric designs also occur in Amami, Okinawa.

Time Period Probably belong to the 17th century.

Occurrence Sherds of this type are not found in the Urasoe or Katsuren Sites. They usually occur with Late Ming celadon.

Tsuboya Type

(Plate 14h)

Base Inside of high (1.8 cm.) foot ring of small bowls is 5 cm. in diameter. Glazed completely except for bottom of foot ring.

Paste Relatively coarse, porous, reddish brown.

Shape Small bowls.

Glaze Opaque brown. Bottom of bowl has unglazed ring surrounding circular glazed disc in center.

Decoration Absent.

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Time Period May have been produced in late 17th century.

Occurrence Sherds of this type are known from the Asani Site, and complete specimens are sometimes found in front of old tombs.

I am including two types from Okinawan kiln sites. They are derived from surface collections and excavations at the kiln sites themselves.

Kina Type

Base Flat, unglazed.

Paste Very dense; sparse fragments of quartz for tempering. Varies from reddish brown (13"K) to chocolate (7"m) to a brownish black.

Shape Large jars, and mixing bowls.

Glaze Not always used, but when occurs is ferrous opaque brown.

Decoration No exterior decoration on large jars. Horizontal strip applique handles sometimes found.

Time Period May have been produced in the 17th century or later. At present there is no means of defining the time period more precisely.

Occurrence The type has been established from sherds of the Kina Kiln Site, near Yonabaru in Central Okinawa. It was a small production center, occupying not more than a few hundred square yards. Similar sherds may be found scattered over many Okinawan castle sites. Detailed excavation of this kiln site, somewhat difficult because it lies under several houses, would be very rewarding.

Kogachi Type

(Plate 7e-h)

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Base Bases of small bowls particularly high and wide for size of bowl. Other forms have high foot rings also.

Paste Grey and relatively hard, although a few soft orange sherds also found in kiln.

Shape Small bowls, large jars, wine bottles, and burial urns. Burial urns are massive clay boxes with roof-like lids, for containing human bones during the second stage of burial; bottom may have perforations.

Glaze Small bowls have a thin grey-green (25"b), glassy, irregular glaze, extensively but not conspicuously crackled. Glaze stops about 2 cm. above foot and same distance from center of interior of bowl. Bowls stacked within each other when fired; this method can be determined from fused wasters. Unglazed jars also produced. Some sherds extremely hard and well finished. Both green and brown glazes used for burial urns; only brown glaze, varying from near black to brownish olive (19"m) used for jars and bottles. One yellow glazed sherd found in kiln.

Decoration Skillful modeling distinguishes burial urns of Kogachi. On other forms decoration absent.

Time Period Yanagi, who wrote an early definitive work on Okinawan ceramics (1942:9-15), considered Kogachi to be one of the oldest kilns in Okinawa. Whether or not the techniques were introduced from Japan in the early 17th century is not clear. It would seem possible from such similarities as the gritty foot ring that some of the early glazed ceramic technology may have come from South China in the region of Swatow. Local traditions state that the span of production of Kogachi was short because the local materials were soon exhausted. The extent of the present remains near the village of Gabusoka on the north side of the Motobu Peninsula would tend to support this conclusion.

Occurrence Kogachi sherds often occur on abandoned village sites and old castles in both Okinawa and Yaeyama.

In contrast to the pottery types which are present in the prehistory of the Ryukyus, there are more historic types and they each span a much shorter period (Tables 26, 27). The types are not of the same character, since in the case of wares such as celadon and temmoku they were produced by specialists for localized markets. Their relative temporal relationships are

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TABLE 26
Summary of historic sites in Amami and Okinawa

Sites					
Katsuren	Urasoe	Maegome	Asani	Kina	Kogachi
			Tsuboya	Kina	Kogachi
			Blue and White Imari		
			Celadon A		
			Glazed Stoneware, Brown		
			Grey and White Glazed Stoneware		
			Unglazed Stoneware, Early		
Blue and White Ming	Celadon B	Celadon B			
Temmoku	Temmoku				
Katsuren Celadon					
Unglazed Pottery, Katsuren Celadon	Unglazed Pottery, Katsuren Celadon				

TABLE 27

Sequence of historic types and sites in Amami and Okinawa

Sites	Types
Kogachi, Kina	Kogachi, Kina
Asani	Glazed Stoneware
Maegome	
Urasoe	Unglazed Pottery Katsuren
Katsuren	
	Blue and White Imari
	Blue and White Ming
	Temmoku
	Tsuboya
	Celadon A
	Celadon B
	Katsuren Celadon

difficult to ascertain partly because they are all compressed into 400 years. Nevertheless, two groups may be separated on the basis of their association with Type B and Type A Ming celadon. With Type B, the Katsuren Type, Katsuren unglazed pottery, temmoku, and Ming Blue and White occur. With Type A celadon, Imari Blue and White, and the Tsuboya Type occur. The unglazed and glazed stoneware may occur with either of these groups. The Kogachi and Kina Types probably belong to the latter group, but their presence has not been adequately noted in the historic assemblages.

5

The Sequence in the Sakishima Islands

Sakishima, as noted above, consists of the island groups of Miyako and Yaeyama. On the main island of Miyako and its dependent islets, no sites have been found which can conclusively be dated before the 14th century A.D.; the island remains a blank in the prehistory of the Ryukyus. These islands are low and flat, facilitating agricultural activities, which have probably destroyed many sites. During 1965, Erika Kaneko of Tokyo Metropolitan University excavated a site at Boramotojima at the southeast tip of Miyako (*Okinawa Times*, Nov. 30, 1965); but on the basis of incomplete reports there is no reason to assume that the site was occupied in the prehistoric period. The limestone ridges which cross the island may have afforded cliff shelters for the prehistoric inhabitants, and further checking of these may still yield some sites. The situation for Yaeyama is much brighter. The first excavations took place in 1904 when Ryūzō Torii (Takamiya 1961:2; Sakamaki 1963:186) excavated the Kabira Shell Mound on Ishigaki Island. He immediately recognized that the artifacts from Ishigaki were different from those from the Japanese main islands, and he termed the pottery from the Kabira Site "external lug" or *sotomimi* pottery. The site yielded porcelain sherds which were attributed to the Ming Dynasty.

Further excavations did not take place in Yaeyama for about fifty years. In 1954 Kanaseki and Kokubu excavated the Shimotabaru Site on Hateruma Island (Kanaseki 1963; Kanaseki *et al.* 1964), and in 1960 the Waseda Team excavated the Nakama group of sites on Iriomote (Takiguchi 1960:110-123), at the same time re-excavating Shimotabaru (Takiguchi 1960:102-109). These sites, together with the Funaura Site from Iriomote, which I tested in 1963, are the total complement of excavated prehistoric sites in Yaeyama (Map 7). Sites of the historic period include the Nakamori Site of Hatoma Island,

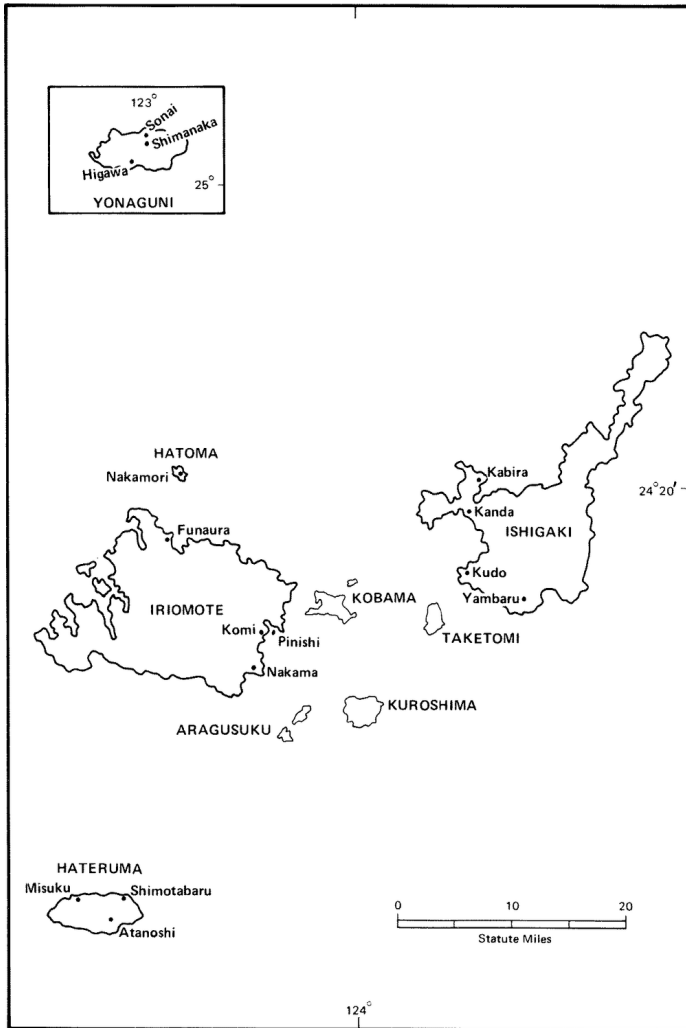
excavated by Takamiya (Meighan and Takamiya 1959); the Yambaru Site of Ishigaki Island (Takiguchi 1960:129-151); and the Atanoshi and Misuku Sites of Hateruma, which I tested in 1963. These are mentioned in a subsequent section.

NON-CERAMIC FINDS IN YAEYAMA

During the earlier periods of human occupation in Yaeyama, pottery was apparently not made. The Nakama No. 1 Site and the Funaura Site both lack any trace of it. These two sites and a recent discovery of early pig bones are discussed in this section.

Early pig bones were found on Ishigaki Island by H. Foster of the United States Geological Survey (Whitmore 1960). In the course of geological mapping, her group encountered unmineralized pig bones said to be probably related to *Sus leucomystax riukiuanus* (Kuroda), the pig which is found on other sites in the Ryukyus such as Shimotabaru (Kanaseki *et al.* 1964:Plates XXXV-XXXVI) and which is still abundant in Yaeyama. The remains, most of which belong to young individuals, have been carbon dated at $8,500 \pm 500$ years B.P., and since the dated material is bone, the actual age may be considerably greater (Tamers and Pearson 1965). The pig appears to be intermediate in size between the pig found in continental Asia and the one found on Ishigaki today. It could have migrated to the southern Ryukyus during the Tertiary, or have accompanied man to these islands, or have come by both means. The early date for pig domestication, which might possibly be assumed because of the predominance of young individuals, is hard to reconcile with the other scant information available for the prehistory of Yaeyama. If the pigs were indeed domesticated, they would be among the oldest examples of domesticated pigs known thus far. The account of Korean castaways stating that in 1479 the inhabitants of Yonaguni did not possess horses, pigs, or goats (Kokubu and Kaneko 1962:103) may be questioned in the light of this evidence, since it is difficult to believe that if pigs were present on Ishigaki they would not also have occurred on Yonaguni. This evidence is still somewhat equivocal; the earliest evidence of human occupation in Sakishima is afforded by the Nakama No. 1 Site on Iriomote.

Situated on the bank of the Nakama River where it enters the sea, the Nakama No. 1 Site was excavated by the Waseda Team in August 1959. It produced an abundance of chipped and semi-polished adzes, as well as pecked hammerstones; no other



Map 7 Archaeological Sites in Yaeyama

artifacts were found. Mollusk shells were very numerous, and the bones of turtles, dugong, and wild boars were also present, the latter occurring in the greatest quantity. One fragment of iron was found, but it was determined to be an intrusive ship's nail. The adzes, roughly rectangular with polished bit and oval cross-section, resemble in their general form the adzes of eastern Taiwan, and in both places they are very commonly

found, in contrast to the adzes from Okinawa, which are rare at all time levels. Some differences in function may account for these differences in occurrence.

A similar site on the northern shore of Iriomote, the Funaura Shell Mound, yielded no pottery, a few rough stone chips, deer, pig, and fish bones, and abundant shells. From a shell sample taken in the middle layers of the deposit (24" from surface), a radiocarbon date of 1010 ± 60 A.D. was obtained. The site occurs on the shore of a warm bay with a muddy bottom, protected from the open sea by Hatoma Island and several rocky reefs.

Shell weights, presumably used for nets, were absent in the Nakama No. 1 Site. Tamaguchi (Takiguchi 1960:149) believes that the shell weights occur only in association with pottery, however, one example was found in the Funaura Site (12" to 18" level).

During December, 1962, under the guidance of Eisen Ohama, whose assistance to several archaeologists in the area has been invaluable though unacknowledged, I visited several prehistoric sites on Ishigaki Island. One site at Kanda, on the shore of Nagura Bay, has been severely disturbed by construction and sugar cane planting. On the surface several shell adzes, made of the ridge portion of large *Tridacna* shells, were found by Ohama. One of these is illustrated in an outline drawing by Kokubu and Kaneko (1962:Fig. 9b). In the same general location, but not in demonstrable association, several completely polished quadrangular adzes were also found. No pottery was found near the adzes. The nearest location of similar (indeed identical) *Tridacna* shell adzes is Palawan Island in the Philippines; these may be seen in the Philippine National Museum. An isolated group, drifting on the Black Current or blown by a typhoon, may have landed on Ishigaki. There is no evidence that they formed a community which was viable over any great length of time.

THE PREHISTORIC CERAMIC SEQUENCE IN YAEYAMA

The Shimotabaru Site and the Nakama No. 2 Site may be considered representative of a later time level within the prehistoric period. These sites yielded pottery but no Chinese porcelain or stoneware.

Shimotabaru was excavated for about ten days in 1954 by Kanaseki, Kokubu, Tawada, and Nagai (Kanaseki 1963; Kanaseki *et al.* 1964) and by the Waseda Team in August 1959 (Takiguchi 1960:102-109). The site lies on flat land near the north shore of Hateruma, with the major springs on the island in close proximity. The location is protected by a ridge, less than 100 feet above sea level, on the southern side. Later communities abandoned the low area in favor of the ridge, living in scattered communities near its flat summit. Kanaseki *et al.* (1964:Plate V) distinguished two cultivated layers (an old one and a recent one) and a mixed-shell layer overlying the subsoil. Takiguchi did not separate the two cultivated layers but recognized a topsoil layer and a mixed-shell layer (1960:Fig. 26). Both excavations produced chipped and semi-polished adzes similar to those from Nakama No. 1 and a small sample of thick, reddish, low-fired pottery, some vessels of which had external lugs. Rare grey, impressed sherds from the site are identical to impressed sherds from northern Taiwan (Kanaseki *et al.* 1964:Plate XXIX). One type of adze has an elliptical cross section in the middle portion, while another has a roughly trapezoidal section. Less than half of the entire sample are said to have a rough, transverse step on one side. Kanaseki and his colleagues (1964:1, 2) state that "though the step in Shimotabaru [adzes] is not so well developed as those in Luzon, South China, and Formosa, an attempt to produce a stepped butt can be found in association with the irregular, elliptical cross-section."

From the Kyushu University Museum, the authors cite a "waisted stone" from Hateruma as evidence of close relations with southern Taiwan (Kanaseki *et al.* 1964:11). The earlier excavations yielded stone awls, which were also found in abundance in the T'ai Yuan Site of eastern Taiwan. A coral object of unknown use may have been used as a file, as coral was sometimes used in Hawaii. Fishing weights, perforated round pieces of coral, were also found. In the Waseda excavations there occurred one hoe-like artifact of Triton shell (*Charonia tritonis*) (Takiguchi 1960:107).

Takamiya (1959:55) stated that fish bones are rarer from Shimotabaru and Nakama No. 2 than from later sites, such as Nakamori, although no quantification or further substantiation was given. At the same time he postulated that in Yaeyama ocean fishing was a relatively late development, perhaps into the historic period. The Nakama No. 2 Site also yielded pottery, chipped and polished adzes, and abundant shells (Takiguchi

1960:110-115). On the basis of the pottery from the Shimotabaru Site and the Nakama No. 2 Site, a Shimotabaru Type is proposed.

Shimotabaru Type

Base Flat or slightly rounded.

Body Shape Sides rounded; mouth usually straight. A few rims either flaring or incurved.

Exterior Decoration No trace of coil method of manufacture. Surfaces bear streak marks or traces of wiping; tempered with fine sand. Exterior lugs occur near mouth. Sherds from Nakama No. 2 Site appear to have been polished.

Time Period This type may have been popular about 1000 A.D. There may well have been groups with pottery and groups without pottery coexisting in Yaeyama during this time. Impressed pottery similar to the sherd found in the Shimotabaru Site was introduced into northern Taiwan after 500 B.C. (Chang and Stuiver 1966:540) and persisted until about 1400 A.D. (Chang 1963:249).

PREHISTORIC REMAINS FROM YONAGUNI

The investigations of Kaneko and Kokubu (1962:77-95) have yielded the first indications of remains from the prehistoric period of Yonaguni Island (Map 7). The two archaeologists collected reports of extended burials in the beach in front of Sonai village; these are radically different from the cave or cairn burials of the historic period. Nevertheless, because of the lack of associated artifacts, they are still difficult to date.

THE HISTORIC SEQUENCE IN YAEYAMA

Sites of the historic period of Yaeyama include the Nakamori Site of Hatoma, excavated by Takamiya (Takamiya and Meighan 1959), the Yambaru Site of Ishigaki (Takiguchi 1960:129-151), and the Atanoshi and Misuku Sites, which I tested in 1963. Other important sites from which surface collections have been made include Pinishi on Iriomote and Kudo on Ishigaki. I have

included in the latter part of the chronology the burial jars of Yaeyama, a discussion of the tombs in which the urns occur, and other related stone remains.

The Nakamori Site is in the center of Hatoma Island, a small islet a few miles to the north of Iriomote Island. The site is adjacent to one of the very few sources of water on the island. Chinese celadon sherds occur throughout the deposit, and five fragments of iron-rusted knife blades—also were found. The major forms of the abundant pottery are shallow jars with broad mouths, and flat-bottomed bowls. All the sherds have crushed-shell temper. Constricted mouths are virtually absent. Takamiya has classified the external lugs, all of which are horizontal, into several classes (Takamiya and Meighan 1959), but the significance of these distinctions has yet to be demonstrated. One conical bone point with a tapered stem was also found. The site resembles in general other sites, such as Yambaru in Ishigaki.

The Yambaru Site is in the northeastern outskirts of Ishigaki City. Thin topsoil overlies raised coral reef bedrock at the site and its environs. Chinese celadon sherds, fragments of small bowls and plates, were found throughout the site; and one Chinese coin, dating between 1034 and 1037 A.D., was recovered. Ten impressed sherds of grey color were thought by Takiguchi to be Sueki, a kind of grey pottery related to the Kofun Period of Japan. However, the closest source of this impressed pottery, like the single sherd found in Shimotabaru, is probably northern Taiwan. The local pottery is composed mostly of wide-mouthed bowls with horizontal lugs; however, *tsubo*, with constricted necks, also occur, as in the Hateruma sites of Atanoshi and Misuku. Conical bone points with tapered stems, identical to a specimen from the Nakamori Site, are abundant in the Yambaru Site.

The most important features of the Yambaru excavations were configurations which have been construed as house ruins. These are two adjacent, roughly rectangular outlines composed of rough fragments of coral. The maximum length is 14 feet, and the orientation is southeast to northwest along the longest axis. A series of small pits was inside the largest outline, and pottery and shells were abundant. The outline is somewhat irregular, but the general pattern resembles the house ruins from the Sumiyoshi Site of Okinoerabu and the Ushuku Site of Amami Ōshima. A similar dwelling site may have been found on Kobama Island, but the find circumstances are not clear (Takiguchi 1960:148). The inference that these features of the Yambaru Site are truly house ruins is not accepted by Kokubu

and Kaneko (1962:121), who feel that the house shape is merely the irregular rim of a coral outcrop. Iron fragments, as well as a perforated disc ornament from the large flat end of a cone shell, were found in the Yambaru Site. One small, completely polished stone adze and several hammerstones were also found. The pottery from these sites is similar enough to be included in a single type.

Panari Functional Type

(Plates 6y-bb; 9b-f)

Base Rounded or flat.

Rim Completely plain. May be flat on top or pinched to form bevelled edge.

Body Shape Variable. Shallow bowls, wide-mouthed jars with external lugs, jars with constricted necks, outflaring rims. External horizontal lugs common on all forms except jars with constricted necks.

Exterior Decoration Interior and exterior show signs of rubbing or wiping, with no further attempt to decorate the surface. Pottery from Misuku Site predominantly orange, while much of pottery from Atanoshi Site is black.

Time Period Made from the beginning of the historic period, perhaps even as early as the 11th century, until the 19th century. Distinguished from earlier pottery of Yaeyama by presence of shell tempering.

Occurrence It occurs throughout the islands of Yaeyama, including Yonaguni, on sites bearing Chinese porcelain or stoneware. The sherds from Misuku and Atanoshi, described below, may be considered typical.

During the Late Sung, Yuan, and Ming periods (from about 1200 to 1600 A.D.) Hateruma Island, the southernmost of the Ryukyus, had many small, scattered communities on the limestone plateau in the center part of the island, instead of the two or three larger settlements which it has now. Two of these earlier sites, which I tested in 1963, contain Panari Functional

Type pottery. The first, Misuku, is on the northwest corner of the island on a small, sandy hill behind the tangled strand vegetation of the shore (see Kanaseki *et al.* 1964:Plate II No. 14). The entire site occupies not more than a few hundred square yards and must have consisted of a small group of houses. Atanoshi, the second site, which is in the center of the island, is larger, being spread over an area approximately 100 yards square. Much of the site has been intensively cultivated. A test pit was opened in a relatively undisturbed mound of midden debris.

In Unit 2 of the Misuku Site between a depth of 6 and 15 inches, an artifact of the same shape as a stone reaping knife was found, made from the bottom of a *Trochus* shell. Shell reaping knives have been noted in Yaeyama by Kokubu and Kaneko (Kokubu 1964:231; Kokubu and Kaneko 1962:119).

The pottery excavated from the Misuku Site is buff-orange in color, with the exception of a few sherds which have a blackened surface. The surface of the sherds and the interior are of a uniform color, and the hardness varies from 2 to 2.5 on Moh's scale. Since the color and hardness show considerable variation over the surface of the vessels, they must have been fired in a simple aboveground fire. The sherds are friable and powdery and are usually rubbed or smoothed on the outer surface. The temper is extremely coarse, varying from 3 mm. to over 1 cm. in diameter. There are unsmoothed marks which might indicate the use of some kind of beater. The bottoms are flat or very slightly rounded, but never pointed. One disc-shaped sherd, the edges of which were shaped after firing, appears to have been used as a lid. Distribution of the pottery from the Misuku Site is shown in Table 28.

Perforated lugs, which were not found at Misuku, occurred at Atanoshi. The chief feature of the Atanoshi sample (Table 29) is the high frequency of sherds with black surfaces and dark grey interiors. These pots were made in what appears to be a very deliberate and carefully controlled reducing fire. From the Misuku Site there are a few examples of black sherds, which are more crudely finished.

In addition to the locally made ceramics, both the Misuku and Atanoshi sites produced a considerable amount of trade ceramics.

All of the pottery types in Table 30 were presented with the data on Amami and Okinawa in Chapter 4, with the exception of the Brownish Yellow Type of Glazed Stoneware.

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TABLE 28

Distribution of pottery from the Misuku Site, Hateruma

	Rims				Total
	Lugs	No lugs	Base	Body	
Broad-mouthed straight-sided jars	82	176	31		289
Broad-mouthed jars, slight collar	1	7			8
Jars with constricted necks, slightly flaring rim		15	22		37
Jars with constricted necks, exterior ridge	1	3			4
Bowl with slightly flaring rim			1		1
Small beaker		4			4
Burnished sherds				3	3
Body sherds, shape unidentified				1,428	1,428
TOTAL	84	206	53	1,431	1,774

Glazed Stoneware: Brownish Yellow Type

Base Flat and unglazed.

Paste Reddish orange with quartz temper up to 1.5 mm. in diameter.

Shape Large storage jar for oil or water.

Glaze Thin, brownish yellow in color, slight blisters and inconspicuous crackling. Misuku examples may be plain or oxide-coated on interior.

Decoration One sherd bears small portion of raised dragon design.

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TABLE 29
Distribution of pottery from the Atanoshi Site, Hateruma

	Rims		Bases	Body	Total
	Lugs	No lugs			
ORANGE POTTERY					
Broad-mouthed straight-sided jar	24	5			29
Beaker		4			4
Body sherds, shape unidentified					—
BLACK POTTERY					
Broad-mouthed straight-sided jar	11	1	2		14
Constricted neck, straight-sided jar				1	1*
TOTAL	35	10	2	1	48

**The total height and maximum diameter of the jar with the constricted neck and straight sides are 23 and 24 cm.*

Time Period “Dragon jars” of this type may be assigned to the Ming Period.

Occurrence While sherds of the same glaze have been found on many Okinawan sites, the only example of the raised dragon design which I have encountered is from the Misuku Site.

Five of the seven celadon base sherds from Misuku bear underglaze imprints. The interior diameter of the base varies from 4 to 4.5 cm. Two basic rim forms occur—straight and flaring. The total thickness of the glaze is approximately .8 mm., while the total thickness of the rim varies from 4 to 6 mm. The glaze is finely bubbled. Three of the straight rims have underglaze incision, two of which are the cloud pattern (Plate 6k, n) and the other, a lotus pattern (Plate 6t). The only shape of the celadon

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TABLE 30

Distribution of trade ceramics from the Misuku Site, Hateruma

	Rims	Bases	Body Sherds	Total
Celadon, Type B	31	7	22	60
Glazed Stoneware, White Type		1		1
Glazed Stoneware, Brownish Yellow Type			14	14
Glazed Stoneware, Black Type			14	14
Glazed Stoneware, Brown Type	5	1	38	44
TOTAL	36	9	88	133

TABLE 31

Reconstructed mouth diameters of celadon bowls from Misuku, Hateruma

Sherd	Diameter
1	17.5 cm.
2	12.9 cm.
3	9.6 cm.
4	10.2 cm.
5	11.4 cm.

sherds from Misuku is that of a small bowl. From the curvature of the rims a reconstruction of the mouth diameters may be made (Table 31).

The rims of the Misuku specimens vary in color over a wide range of greens and greyish greens according to the Ridgway nomenclature; greyish olive (21"), glaucous (29"), tea green

(25""b), pea green (29""b), gnaphalium green (29""d). The feet range from light greyish olive (21"" to vetivier green (25"" to pea green (29"").

The single specimen of the Glazed Stoneware, White Type, is the foot of a small bowl. The interior diameter of the foot ring is 2.6 cm. The opaque white glaze extends to the bottom of the foot ring but has been filed from the very bottom of the ring and is absent from its interior.

The products of several kilns are probably present in the Glazed Stoneware, Brown Type. The paste is predominantly pinkish, with sparse grit of varying sizes. The thickness is approximately 6 mm., and the color of the glaze is variable. From the surface of the site, a sherd bearing the stamp of a Chinese character for treasure (*pao*) was found. The rest of the inscription was not recovered. The character, which had been stamped into the clay while it was wet, may be some mark of commendation (see Honey 1944:199). The interior of these brown glazed jars may be thinly slipped, glazed, or left plain. Two body sherds with an extremely weathered surface have a linear design fashioned by the application of something which resisted the glaze. These sherds are also glazed in the interior. The flat bases are unglazed and have a reconstructed diameter of about 15.8 cm. The color of the glaze is buffy brown (17""i), fuscous (13""k), and fuscous black (13""m).

The Atanoshi Site yielded the types of trade ceramics shown in Table 32.

The bases of the Type B celadon may be sub-grouped according to a few distinctive attributes. In the first group, the glaze extends almost to the bottom of the foot ring on the outside, being totally absent in the strongly convex interior of the foot ring. Three of these bases have underglaze floral imprints on the bottom of the bowl. Another group of three is characterized by a central disc of celadon glaze in the oxidized interior of the foot ring, which is completely glazed and somewhat sandy.

The rims may flare slightly (Plate 60, p; cf. Palmgren 1963:Fig. 52), or bend to almost 90 degrees. They lack any decoration, except for a single example which has a series of lightly incised underglaze lines on the exterior below the lip (Plate 6q). Most of the rims are profusely bubbled, although there are a few with transparent glassy glazes. One of the straight rims bears an interlocking rectilinear design identical to that illustrated by Palmgren from Ch'ü Chou (1963: Fig. 51). One light grey celadon rim with pock marks and irregular bubbles and

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TABLE 32

Trade ceramics from the Atanoshi Site, Hateruma

	Rims	Bases	Body Sherds	Total
Celadon, Type B	23	9	17	49
Celadon, Type A	1	1		2
Glazed Stoneware, Brownish Yellow Type	1	2	29	32
Glazed Stoneware, Black Type	5	8	73	86
Unglazed Stoneware, Early Type	2		8	10
Glazed Stoneware, White Type	1		2	3
TOTAL	33	20	129	182

another outflaring rim of glaucous blue (43" f) differ from the general range of sherds. A single fragment of a plate, with an undulating rim, underglaze incision, and a coarse crackle, is the only celadon sherd in the entire Hateruma collection which is not from a small bowl.

One base of Type A stands out from those of Type B by virtue of its thickness, olive green glaze, and unfinished foot. A small irregular impression 1.5 cm. long lies under the glaze in the bottom of the bowl. It may be an underglaze fish imprint which the thick glaze has rendered illegible. The glaze extends irregularly over the bottom of the foot ring, except where it has been filed from the edge.

The bases of the Brownish Yellow Type of stoneware are 8.5 cm. and 16.5 cm. in diameter. The mouth diameters of the two almost complete specimens of the Brown Type are 8.4 cm. Horizontal strip applique handles occur singly, four of them placed equidistantly around the mouth. A single vertical strip applique handle was also found. The interior of the mouth is roughly glazed, and glaze has dripped into the bottom of the pot.

One of the sherds of the Glazed Stoneware, White Type, may be an example of the South Chinese greyish white "Swatow" glazing. The bottom of the bowl has been left unglazed for

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stacking while the bowls were fired, and the paste is greyish white. The base of the vessel, above the foot, shows a wide band of unglazed grey surface.

The Kudo Site, on the beach of Ishigaki Island between Kannon Cape and Nagura Bay, was shown to me on December 25, 1962 by Eisen Ōhama. This site yielded abundant celadon sherds. For several days in December and in the spring of 1963, surface collections were made. The largest collections, made by G. H. Kerr, are now in the Honolulu Academy of Arts and the Ryukyu Museum. Most sherds from Kudo appear to be identical to those found on the Hateruma sites. Underglaze stamped floral motifs or characters occur in the interior bottom of the bowl in most cases (Plate 14a-d, g). The paste is greyish white, and the feet in some cases show bevelling along the outer edge. Rim sherds of large plates have also been found. Since most of the sherds were found below the high-water mark and many of them occurred in several feet of water, they are heavily encrusted with carbonate. The predominant form is a small bowl with an interior foot ring diameter of approximately 4 cm. The glaze is in all cases sufficiently eroded to make color identification impossible.

Thus far, no Blue and White sherds have been found on the beach. A small number of eroded Brown Glazed Stoneware sherds were found, but these constitute a distinct minority. Two bases of grey, finely crackled ware, from which the base has four rounded cuts which have subsequently been glazed over, and two white porcelain bowls, with similar cut portions, were also found (Plate 14f, i). The interior diameters of the foot rings are 3.5 cm. for the bowls with the crackled glaze and 4 cm. for the white examples.

The find conditions of the Kudo Site deserve special comment. The rocky beach on which the sherds occurred is backed by grassy headlands from the base of which flows a single spring. Since repeated efforts to locate some settlement or ruined storehouse above the beach have been unsuccessful, on circumstantial evidence one might conclude that the site was the result of a shipwreck. If this should be proven to be the case, the sherds found in the area would all be contemporaneous. Thus, greater time control would be provided than at the kiln itself, where the wasters of many years may accumulate and be mixed by subsequent digging by local people in search of salable pieces. Several bases with a high foot and dark olive green glaze may be considered to belong to the Celadon Type A. If the Kudo Site is actually the site of a wreck, then the Celadon

Types A and B may be contemporary products from different kilns. However, from the association of Type A with Blue and White Imari, Type A may have still been produced after Type B was discontinued.

The Pinishi Site has been described by Takiguchi (1960:124-128). It is on a small island in the estuary of the Shira River on the eastern side of Iriomote. A small growth of mangrove, no higher than a few feet, extends from the muddy shore. Flats extend seaward more than one-half mile, and during low tide the local boats are completely out of the water and are unloaded by ox carts. The shore near the island and in front of the adjacent village of Komi has yielded a tremendous quantity of celadon sherds, the glaze of which resembles that of the Asani specimens. On most of the sherds it is thin, bubbly, and inconspicuously crackled. The color tends toward grey or olive green (31"") and the paste is greyish-as dark as the darkest examples from Asani. One sherd has an underglaze incised lotus pattern which has been obscured by the unevenness of the glaze, and dripping of the glaze, which can never be seen on Type B, occurs on the interior of the lip. A sherd of South Chinese Blue and White found with the celadon sherds would tend to support the conclusion that these celadons were produced some time after the beginning of the Ming and are later than those found at Kudo or on Hateruma.

Panari Burial Type

(Plates 9a; 13b)

Base Flat; may have several round, small perforations.

Body Shape Maximum width usually below the mid-line; sides taper up to the rim.

Rim Flat, may be completely unaltered or slightly everted.

Exterior Decoration Urns used for secondary burials sometimes have year inscriptions or simple geometric incisions no larger than a few centimeters, on lower part of the pot. Pots generally do not have lugs. Crushed-shell temper a cardinal distinguishing feature.

Time Period Although it is suspected that burial urns of this type have been used for many centuries in the Sakishima Islands, there is no way of dating most of them at present, except by the association with grave ceramics that might have been added at a later date. Undisturbed tombs, such as those which have been found recently in the forest of the Ku'ura region of Iriomote during the clearing of land for agricultural purposes, often have porcelain bowls, plates, or vases along with soft fired panari yaki vessels placed in front of them (Plates 9a, b; 18c). The porcelain or stoneware is of South Chinese (Swatow or so-called Annamese kilns) (Plate 13e, g), Kyushu (Ko-Imari) (Plate 4h), Naeshirogawa (or other kilns in the environs) (Plate 4j), Korean (Plate 13 a, c), or local Okinawan manufacture (Kogachi or Tsuboya) (Plate 4i). There are no records of celadon having been found in direct association with the tombs. The ceramic association demonstrated above would point to the use of this particular form of tomb after the 17th century.

Occurrence These jars were used in caves and tombs throughout Yaeyama and in similar locations in Miyako (Kaneko 1963:117-118; 1964; Takiguchi 1960:171-173). The earliest form of burial may have been in caves, although it is difficult to separate chronologically cave burials from free-standing tombs. The turtleback style of Okinawan tomb appeared quite late, at least after the 17th century, and is still not widely used.

Field Monuments in Sakishima

The typical Yaeyama tomb is composed of a stone cist above ground, often with one upright more substantial than the others. Over this cist is erected a rectangular cairn of shaped coral blocks. Inside it are jars of local Panari Burial Type, containing the bones of the dead. Small bone fragments may be found scattered inside the tomb, but the long bones are usually more carefully placed in the jar, which may contain the remains of more than one individual. There may be many jars within the tomb, since it is the property of a lineage. The ethnographic details of the burial have been presented in Kaneko's recent study (1964). Sometimes bowls of 19th century Yaeyama manufacture are found in the tombs (Plate 13d, f).

The Waseda University team of 1959 mapped a cist tomb belonging to the Ōhama family of Ishigaki, in which a local priestess was buried some thirteen generations ago (Takiguchi

1960:170-173). This is a large stone cist about 5 feet long and 2 feet wide, covered with a cairn of cut coral. A large, thick, overhanging lid protected the contents.

The imposing cut-stone tombs of Miyako have been described in detail by Kaneko (1963:121-133) and Inamura (1962:469ff.). The largest ones are located at Matsubara hamlet, Hisamatsu district, and to the north of the main pier at Hirara City. The former are platforms, single-tiered or double-tiered, enclosing stone cists, which are above the ground. The dead may have been placed in these stone cists in a contracted position or more probably as secondary interments. The Nakasone tomb at Hirara is an elaborate stepped edifice on the side of an embankment, with a row of uprights on the top of the burial vault, which extends into the hillside. A high, cut-stone wall surrounds the tomb and there is an adjacent well or bathing place (Kaneko 1963:125). Through Kaneko's efforts, the Hisamatsu examples have been carefully restored and recorded.

Inamura has suggested that these tombs were made some time about the 15th century (Inamura 1962:469 ff.). They were made by a very small upper segment of the population. Small examples of the Hisamatsu Type were in use up to the end of the 19th century. The bodies of the common folk were probably exposed on coral platforms near the sea and later placed in jars, in caves, or under small cairns. Inamura stated that the general tomb style of Miyako bears similarities to the protohistoric tombs of Korea and Kyushu. Takiguchi (1960:172-173) agrees completely with Inamura's statements regarding the formal similarities. Kaneko, however, correctly pointed out that the time gap, as well as the great distance separating the two areas, is too great for there to be any direct derivation from Kyushu and Korea (1963:129).

The small islands to the south of the Ryukyus provide the nearest source for the peculiar forms of the Sakishima tombs. Kokubu and Kaneko state that the burial urns of Yaeyama are "reminiscent of the urn excavated by Dr. Tadao Kano within the village boundaries of Imourud, Botel Tobago (Kano 1952:84). The similarity does not only apply to the form, but also the type of firing" (1962:91). We know also that the exposure burials practiced near the large rock of Yayu, Botel Tobago, are identical to the contemporary form of burial on Kudaka in the Okinawa group.

To the south of the Ryukyus, and to the south of Botel Tobago, another string of islands stretches to Luzon. They too are washed by the Black Current as it flows northward. From these islands, the Babuyans and the Batanes, Solheim (1960) reported jar burials.

From Dalupiri in the Babuyans, secondary jar burials, enclosed within a circular wall 4 feet high, were found by Bartlett (Solheim 1960:117). No trade porcelain occurred, although there were rumors that Blue and White Chinese porcelain had been previously found on the sites. From Camiguin Island, also in the Babuyans, burial jars were also found, but there were no cairns or walls. On Fuga Island, Solheim found plain, brown, sand-tempered jars, some of which were large enough for a primary burial, set in shallow holes in raised coral reef areas. In association was an olive-brown Glazed Stoneware jar about 13 inches high, with four or more loop handles. Unlike the Ryukyu examples, but like the Botel Tobago example, some of the burial jars had lids made of inverted jars, which were sometimes broken.

From the Batanes, Beauclair reported the existence of burial cairns, burial jars for children, and stone cists containing the bones of more than one individual (Solheim 1960:127-131). Jar burial in this area lasted until historic times, at least until 1770.

Burial jars have been found on Lü Tao and in the main park of Hualien City, on the east coast of Taiwan. The latter site yielded artifacts such as chipped stone hoes, which can be found on many sites along the east coast. The jars found in the Hualien Park had perforated bottoms and ring feet.

Perhaps at the same time as the Sakishima tombs became popular, other distinctive forms of stone construction appeared in the islands.

Stone Remains of Yonaguni and Aguni

Stone tanks are found in the older villages of Sonai and Higawa (Hinai in local dialect) and in the abandoned village of Shimanaka on Yonaguni (Plates 12a-f; 15a, c). They are all made of a relatively hard local sandstone. At present these tanks lie, often in groups, in the gardens of the houses of the older families. Some new tanks, about 2 feet in diameter, were made shortly after World War II when all imports to Yonaguni were disrupted. Iron chisels were used in the construction of the modern examples, and may have been used for the old ones as well, since there is no direct indication that they predate the

Archaeology of the Ryukyu Islands

TABLE 33
*Dimensions of tanks from Yonaguni Island**

		Length	Width	Interior Depth
Sonai	Largest measured	94	48	36
	Smallest measured	43	30	16
Shimanaka	Largest measured	80	58	17
	Smallest measured	31	31	11
Hinai	Largest measured	66	48	—
	Smallest measured	34	24	6

**Measurements in inches, from Pearson's field notes from Yonaguni, 1965.*

historic period. They are now used for feeding pigs. At present the edges of the old tanks are often used as whetstones, and damaged portions of some of them have been repaired with concrete.

Of the old tanks there are two major types. The first is long and rectangular, while the second is rounded. The round tanks are much more uniform in size, varying from about 24 to 30 inches in diameter. Comparative dimensions are shown in Table 33.

The function of the tank is still not known definitely, but it has been suggested by the local people that they were used in the dyeing of textiles. This explanation was offered to Kaneko concerning the group of tanks at the well in the abandoned village of Shimanaka (Kaneko 1963:135), and the same possibility was suggested to me concerning the large keeled tank at Anda Mizu, to the west of Higawa village. It has also been suggested that some of them were used as coffins (Kokubu and Kaneko 1962:93). However, the fact that all of them are now near houses and many of them near sources of water makes this argument somewhat untenable. If they have all been re-

TABLE 34
Summary of sites in Sakishima

Sites										
Funaura (c.1000 A.D.)	Nakama No. 1	Nakama No. 2	Shimotabaru	Nakamori	Yambaru	Atanoshi	Misuku	Kudo	Pinishi	Burial Sites
										Panari Burial Type
						Celadon Type A		Celadon Type A	Celadon Type A	
				Celadon	Celadon	Celadon Type B	Celadon Type B	Celadon Type B		
						Stoneware Types	Stoneware Types			
				Panari Function- al Type	Panari Function- al Type	Panari Function- al Type	Panari Function- al Type			
		Shimota- baru Type	Shimotabaru Type							
No pottery	No pot- tery									

moved from the fields recently or even some time ago, it would seem that there should be a clearer knowledge of this among the older inhabitants.

The stone remains of Aguni, to the north of the main group of Kerama Islands, which lie to the west of Okinawa, show some striking similarities to those of Yonaguni. Here, as well as the familiar *ishiganto* protective stones, there are large cut stones at the entrances to the houses, house-corner beams of cut coral, and huge coral *himpun*, or spirit walls, set at the corners of the curved entrance pathways to the houses. The standing stones usually vary from 33 to 50 inches in height; the example across from the main store in Higashi hamlet is 68 inches high.

The large stone tanks, stated by the elders to have been made in the period of Aguni's subservience to Shuri (15th century or later), are round, with a few exceptions. A characteristic feature of the Aguni tanks is the flat rim with an interior overhang. Aguni has a limited supply of water and a deep cap of fine, easily worked Ryukyuan limestone. The construction of the tanks appears to be a local adaptation to restricted water resources and a ready supply of stone. Originally the tanks were filled with rainwater which ran by way of twisted ropes from the

trees surrounding the houses into the tanks. Nowadays, since the local roofs are covered with clay tiles, water from the roof can be conserved in these tanks.

The same soft rock face on the southern end of the island that was used for quarrying the tanks was also used for the construction of monumental cave tombs. The back chamber of the largest of these tombs, now abandoned, exceeds 35 feet in length and 48 feet in width, with a ceiling supported by pillars of more than 6 feet in height cut from the living rock.

In Aguni and Yonaguni there is a definite correlation between wealth as demonstrated by domestic architecture (the house, its garden, and the size of the surrounding land) and the number and quality of stone tanks. The Nakazato family of Aguni has five tanks at one house site, and the present head of the family said that in his childhood he saw a tank taken from the quarry to the village by a large group of people. Therefore, the tanks appear to have been the property of families who could rely upon the services of many inhabitants to hew and transport these prestige objects. Aguni and Yonaguni lie several hundred miles apart, yet they are both washed by the Black Current. The circular tanks of eastern Taiwan and the tanks of these two islands share many features in form, but their functional similarities are not yet clear.

Table 34 summarizes the major sites mentioned in this section, and Table 35 shows the distribution of the pottery types. The non-ceramic sites of Iriomote might, as I have placed them, precede those on which pottery appears; on the other hand, they may have been occupied by groups, contemporary with the inhabitants of Nakama No. 2 and Shimotabaru, who used pottery. A similar point should be made concerning the chronological distinction made between the sites on which celadon appears and the burial sites which lack it. I have tentatively placed the former in an earlier position, partly because some burial sites contain Imari Blue and White and other types known to belong to the 17th century or later; however, some tombs contain no ceramics or may have been given ceramic offerings long after the interment. In these cases, celadon may have been omitted as grave goods simply by preference. This would corroborate Inamura's conclusion that the tombs of Hisamatsu in Miyako were built in the 15th century (1962:469ff.). They lack celadon but were built during the

TABLE 35
Sequence of pottery types and sites in Sakishima

Site	Type
Burial Sites	
Pinishi	Panari Burial Type
Kudo	Celadon A
Misuku	
Atanoshi	
Yambaru	Stoneware Types
Nakamori	Panari Functional Type
Shimotabaru	
Nakama No. 2	Shimotabaru Type
Funaura	(No pottery)
Nakama No. 1	

height of the China trade. Eventually it may be possible to construct a chronology of tomb and burial jar forms which would clarify some of these problems.

6

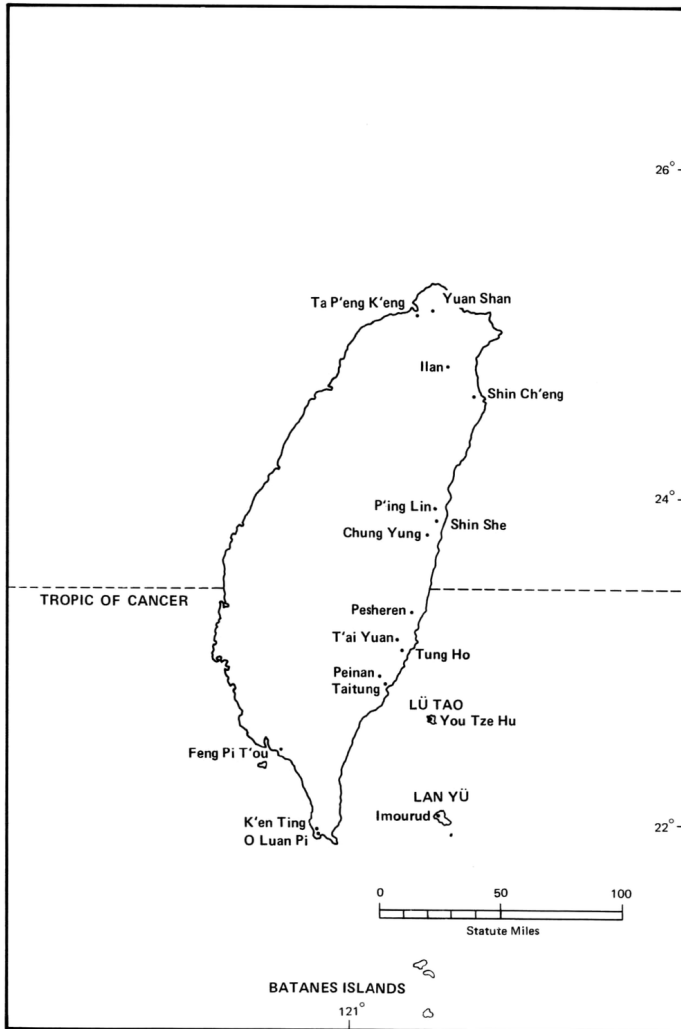
The Prehistoric Sequence in Eastern Taiwan

The eastern coastal area of Taiwan, for the purposes of this section, extends from the Ilan valley to the southern tip of Taiwan at K'en Ting and O Luan Pi. From Hualien to Taitung it embraces both the Pacific coast and the interior valley. Two islands removed from the coast, Lü Tao and Lan Yü, are also included (Map 8).

Archaeological and ethnographic work began in Taiwan soon after the Japanese received the island by the Treaty of Shimonoseki in 1895. Ryūzō Torii (1898) traveled to Lan Yü at the end of the 19th century, and Tadao Kano carried out extensive fieldwork along the east coast during the 1920's and 1930's. Among the items of Kano's extensive bibliography are survey articles on the prehistory of the east coast, Lü Tao and Lan Yü (1930; 1946; 1952). In the last volume he includes the sites and artifacts of the two islands, a jar burial from Lan Yü, cist tombs from the east coast sites such as Ma Wu, and comparative data from the Babuyan Islands of Camiguin and Dalubiri, which have jar burials similar to the Lan Yü example and to the burials in Yaeyama. In 1945, Kanaseki and Kokubu excavated a site near Peinan, close to the city of Taitung (Kanaseki and Kokubu 1957). Later surveys have been carried out in 1963 and 1967 by W. H. Sung of National Taiwan University, and by the author in 1963 and 1965 (Pearson ms.).

For the discussion of this area, I rely on two sites. The first, Peinan, is in the broad valley of the Peinan Ta Ch'i, a shallow but broad river originating in the rift valley. Following a typhoon or heavy mountain rain the river becomes a raging torrent, and it appears to have washed over the Peinan Site even though the site is some distance from its bed. The chief feature of the site is the remains of a house, approximately 46 feet long and 13 feet wide, with upright beams and floor composed of slate slabs. The pottery from the site is described as being rough reddish brown

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Map 8 Archaeological Sites in Taiwan

(Kanaseki and Kokubu 1957:53). One fragment of black pottery, part of a bracelet, was recovered from the west wall of the house. Jars with outward-flaring mouths, ringed feet (some with perforations), and vertical and horizontal handles and wide flat-bottomed vessels were abundant. Broken legs, possibly from *ting* tripods, were also found (Kanaseki and Kokubu 1957:56). Spindle whorls occurred in considerable quantities. Chipped

hoes and pestles, as well as finely polished rectangular adzes and polished knives, were the chief items of the lithic inventory. A large, circular stone tank, similar to the one found on the upper terrace of the T'ai Yuan Site, was also found

The second site, known as T'ai Yuan, was excavated under my direction for two weeks in 1965. It occurs in a mountain valley north of the Peinan Site and a few miles inland from the Pacific. The site is spread over several terraces of the Pei Ch'i River, which empties into the Pacific through a mountain valley at the town of Tung Ho. A small number of cord-marked sherds was found on the surface. The bulk of the pottery, including sherds found within cist tombs, is coarse in texture and bright orange in color, occasionally with a reduced inner grey layer. It is the same as the pottery from the Peinan Site. Jars with handles, ring feet, bowls, and spindle whorls were found. The handles may be plain, decorated, or perforated and decorated. From the cist tombs at the site there were slate needles, serpentine knife fragments (Plate 10j, k) and adzes (Plate 10l-o), and a roughly shaped fragment of quartz, as well as potsherds. At the T'ai Yuan Site, the Peinan Site, and many other sites along the east coast, chipped basalt hoes (Plates 10d, i; 11a, b, d, f, g), similar to those from Shimotabaru, Hateruma, are found in abundance. Perforated stone knives (Plate 10f, g, k), perhaps used for reaping cereals, were found at both Peinan and T'ai Yuan. Slate knife-like artifacts were found (Plate 10h).

In the cist tombs believed to be contemporary with some of these sites, such as those at You Tze Hu on Lu Tao, there were fragments of bronze (Kano 1952:407). Another tomb, at K'en Ting, in southern Taiwan (Kano 1952:187), contained a K'ang Hsi (1662-1723 A.D.) coin which might have been intrusive. Worked pebbles were collected from the surface of the same site (Plate 10a, b, c), and from T'ai Yuan (Plate 11c).

There are groups of stone uprights on the T'ai Yuan Site and on other sites between Taitung and Hualien yielding similar pottery (Pearson ms.; Plates 15b; 16a-d; 17i).

From the T'ai Yuan Site, three major pottery wares may be isolated (Table 36). They are the Corded, T'ai Yuan, and Ami Wares. There is substantial evidence from the west coast sites of Ta P'eng K'eng, Feng P'i T'ou, and Yuan Shan that the Corded pottery was used by groups of people distinct from those who used the Yuan Shan or Lungshanoid pottery (Chang and Stuver 1966:539). Also, the pottery which was used by the Ami, as seen in museum collections in Taiwan, does not contain any of the pottery which is called T'ai Yuan Ware in this chapter.

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I am substituting the word *ware* for *type*, which has been used in the previous chapters, since these kinds of pottery were apparently not used together by the same group of people as pottery of different types could be used.

CORDED WARE

(Plates 11k; 17b)

Base Round, probably set in ring foot which may be perforated.

Body Shape Generally globular.

Rim Characteristic flaring, overhanging lip.

Interior Plain, relatively well smoothed.

Exterior Decoration Cording in overlapping zones over which there may be simple rectilinear incising. Reddish brown sherds are somewhat sandy, often extremely weathered.

Time period This pottery is found in many locations on the west coast, but on the east coast it is quite rare. It is well known from the west coast sites of Feng Pi T'ou and Ta P'eng K'eng. By extrapolating from these sites, from which there are radiocarbon dates, it may be dated some time before 2500 B.C. (Chang and Stuiver 1966:541). It was later supplanted by Yuan Shan or Lungshanoid pottery on the west coast; however, it may have survived to a much later date on the east coast because of the isolation of the area.

Occurrence This pottery was found in very small quantities at the T'ai Yuan Site and at the Chung Yung Site near Ch'ang Pin, which is north of T'ai Yuan near the Pacific coast. In both places the sherds are surface finds.

T'AI YUAN WARE

(Plates 11i, j, l-n; 17a, e-h)

Archaeology of the Ryukyu Islands

Base Ring feet very common; height of few complete specimens about 3.5 to 4 cm. Flat bottoms present but very rare.

Body Shape Horizontal and vertical strap handles common, some perforated. Jars may have flaring or straight mouths. Shallow bowls rare. Spindle whorls, beakers, flat dishes, and possibly foot of *ting* tripod also found.

Interior Carefully smoothed.

Exterior Decoration Sparse, limited to rows of punctates. One sherd from T'ai Yuan decorated with small human faces. Pottery may have been slipped with fine clay but was fired at such low temperature that soft slip exfoliated upon weathering.

Time Period So many features of the pottery are held in common with the Yuan Shan pottery of the Taipei Basin of northern Taiwan that some close genetic connections must exist between the two. Not only the shapes and handles but also the orange gritty paste with the reduced grey core are the same in both assemblages. The Yuan Shan pottery was made from 2500 B.C. to the beginning of our era. The T'ai Yuan pottery could fall within this period or have persisted in isolation until an appreciably later date.

Occurrence Throughout the east coast and the rift valley, this pottery has been recorded from about sixteen sites. At the T'ai Yuan Site, it occurred in conclusive association with cist tombs (Pearson ms.).

AMI WARE

(Plate 17d)

Ami Ware is a provisional name which has been chosen because of the direct similarities between the few sherds found in the T'ai Yuan Site and later ethnographic samples noted in museums.

Base Rounded.

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TABLE 36
Summary of wares in eastern Taiwan

	Peinan Site	T'ai Yuan Site
		Ami
Wares	T'ai Yuan	T'ai Yuan
		Corded

Body Shape Rounded, with large rounded lugs, usually two per pot. From T'ai Yuan Site four fragments of a perforated bottom found.

Rim Short and outward flaring.

Interior Roughly smoothed.

Exterior Decoration Completely lacking.

Time Period At present there is no way to judge accurately the time depth of this ware. This pottery continued to be made until very recently.

Occurrence The occurrence of this pottery is at present limited to the T'ai Yuan Site, but it will no doubt be found in other locations when a serious study of Ami ethnohistory is undertaken.

The temporal ordering of these wares is based on data external to the east coast of Taiwan. At Ta P'eng K'eng, the Corded Ware Stratum was separated by a considerable time interval from the Yuan Shan culture (Chang and Stuiver 1966:541). T'ai Yuan Ware, which is closely related to the Yuan Shan pottery, must have succeeded the Corded Ware and was later replaced by the Ami Ware, which was made up until the ethnographic present. Whether the perforated sherds of Ami Ware came from a burial urn similar to those found at Hualien Park (Solheim 1960:139) cannot be definitely decided at this point. They could also be sherds of steamers with a perforated upper vessel and a water container below, although such steamers are not known in Yuan Shan or Feng Pi T'ou pottery.

7

Fitting together the Sequences

The problems to be discussed in this chapter are the relative ordering of the local sequences described above and the assigning of absolute dates to some of the types and sites in the overall chronology.

CORRELATION OF THE LOCAL SEQUENCES

A broad correlation of the sequences can be achieved on the basis of stylistic similarities and trade goods, both in pottery and other artifacts. Radiocarbon dates of the same relative age, regardless of their calendrical date, may also be used to tie the local sequences together into an areal chronology.

Kyushu and the Ryukyus

In Chapter 4, the similarity of the Ichiki Type to Ushuku C and D was pointed out. The Ushuku C and D Types appear to have first originated as local adaptations of the Ichiki Type. At some time after the introduction of Ichiki pottery into the islands yet before it had died out in Kyushu, vessels of the typical Ichiki Type were imported to the Ushuku Site (Plate 1a, b, g, h). All the remains of the Ryukyus, with the exception of the pig bones from Ishigaki and perhaps the deer bones from Okinawa, apparently postdate the beginning of the Ichiki Type in south Kyushu. Since Ushuku C and D are found in the same levels as the Ichiki sherds (Kokubu *et al.* 1956:145), they are doubtless contemporary.

The stone inventories of the earlier sites of Amami and Okinawa, particularly the lower levels of the Ushuku Site, are said to resemble closely those of the Middle and Late Jōmon of southern Kyushu (Kokubu *et al.* 1956:146). At a later time

level, correlations between the Late Jōmon or Yayoi and Ryukyu sites such as Ōyama can be made. The ridged pottery of the Ushuku B Type may be considered to reflect influence from the late Yusu-Kurokawa Type or the early Yayoi Types, as mentioned in Chapter 4. Plain pottery, the Ushuku A Type, also appears to have been derived from Yayoi, although in Okinawa it persisted as late as the occupation of the Noguni Site, about the end of the first millennium A.D.

Amami-Okinawa and Sakishima

In the upper levels of the Noguni Site, lugged pottery similar to the Panari Functional Type of Yaeyama occurs. A cave site on Yabuchi Island near the Katsuren Peninsula of Okinawa contained pottery with shell and sand temper, said to resemble the Panari pottery. Kaneko and Kokubu state that the finds from the upper level of Yabuchi Cave "represent the northern expansion of a cultural type found in the southern Ryukyus, where, however, it persisted much longer than on the main island" (1962:134). Perhaps this site is similar in age to the upper levels of the Noguni Site. Very similar radiocarbon dates from Funaura and Garabi Go (c. 1000 A.D.) make it possible to correlate the non-ceramic sites in Yaeyama with late-ceramic sites in Okinawa. The significance of the coin dated 1034-1037 A.D. from the Yambaru Site is not entirely clear, since Chinese trade ceramics from several centuries later occur in apparent association. However, groups without pottery and groups making Panari Functional pottery may have coexisted in prehistoric Yaeyama.

The Ryukyus and Taiwan

From the Attabaru Site in Okinawa, perforated "skeuomorphs" of shell have been illustrated by Meighan (1964:Fig. 8). Although different in material, they are so close in shape and size to the Yuan Shan perforated slate arrowpoints from northern Taiwan (Miyamoto 1938:38; Sung 1935b:Fig. II) that it seems likely that they are related, since they are close in time and space as well. The carbon date for Attabaru (c. 1400 B.C.) falls within the range of dates for the Yuan Shan culture from Yuan Shan and Ta P'eng K'eng in northern Taiwan (cf. Chang and Stuiver 1966:539, 540). The substitution of shell for slate can be accounted for, since slate is rare in Okinawa and fresh, unweathered shell is equally strong.

Certain connections can be seen between the sites on the east coast of Taiwan and sites in Yaeyama. Stone hoes are abundant on sites bearing T'ai Yuan pottery and are of the same general form (roughly chipped, with an oval cross section and slightly polished bit) as those from Yaeyama. The crude step which Kanaseki and his colleagues have detected on the adzes from Shimotabaru (1964:1, 2) could be related to the stepped adzes of the Yuan Shan culture from northern Taiwan, although in Taiwan they are limited to the Taipei Basin (Miyamoto 1938:31; Sung 1955:Figs. VI, VII). The impressed grey sherds from Yambaru and Shimotabaru suggest contact between Yaeyama and northern Taiwan. Stone needles, found on the Shimotabaru Site, also occur at the T'ai Yuan Site. Since the coarse orange pottery appears to be related to or derived from Yuan Shan, T'ai Yuan may be contemporary with or later than Yuan Shan and Attabaru.

The Ryukyus and China

Shell pendants from the Hirota Site and the Attabaru Site and bone pendants from Sachihijah, Yaejima, Kadena, and other Okinawan sites are said by Kokubu to reflect influence from China before the Han Period (206 B.C. to 220 A.D.) (Kokubu 1960d:4). In fact, the influences may be much earlier.

Chinese trade ceramics, found throughout the Ryukyus, constitute the single horizon which is Ryukyu-wide. The chief item is celadon, but Black and Brown Stoneware and Blue and White porcelain also have wide distributions. Japanese trade ceramics too reached the Ryukyus, but are fewer and in more scattered locations.

DATING THE AREAL CHRONOLOGY

Radiocarbon dates, coins, historical documents, and inscribed roof tiles are the means of assigning absolute dates to the sites and pottery types of the Ryukyus. The available radiocarbon dates for the Ryukyus are presented in Table 37. They are far too few for the task at hand and should be supplemented with several dozen more determinations from future excavations.

The date for the Hirota Burial Site is believed to be much too recent because of the problems involved in dating bone specimens (Tamers and Pearson 1965).

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TABLE 37
Radiocarbon dates from Ryukyuan sites

Sample No.	Site	Material	Years B.P.*	Calendrical Date
UCLA 146	Attabaru	charcoal	3370 ± 80	1408 ± 80 B.C.
Y-1698	Aguni	shell	2710 ± 80	760 ± 80
Y-1681	Yaejima	shell	2660 ± 80	710 ± 80
Y-1682	Hirota	bone	1470 ± 80	480 ± 80
Y-1716	Garabi Go	shell	1190 ± 60	760 ± 60
Y-1697	Funaura	shell	940 ± 60	1010 ± 60

**Before 1950*

Another means of absolute dating, the presence of coins, is useful for several sites, although as might be expected, the coins are most abundant on historic sites which can be dated by other means. Table 38 presents the major published finds of coins but does not include many small but interesting finds made in Okinawa and Miyako that have been reported in the local newspapers. For example, in the autumn of 1965 high school students found a cache of coins near the old Shuri Castle.

Throughout Chinese and Japanese historical texts, scattered and brief references to the Ryukyus occur. They do not aid materially in the construction of the chronology until the China trade began to be active about 1200 A.D. The earlier accounts, however, provide the necessary background for the later events, helping to explain why contacts occurred at certain times and not at others.

From the *Wei Chih (Records of the Wei Dynasty 221-265 A.D.)* and the *Sui Shu (The Records of the Sui Dynasty)* the references to the Ryukyus are often vague and confused. Very few of those who reached the Ryukyus during these times could have returned to China to give systematic accounts. The *Wei Chih* mentions that to the south of Japan, which is referred to as the Queen's Land, there is the Island of Dwarfs, where the people are 3 or 4 feet tall. The distance from Japan to this southern island is said to be over 4,000 *li*. Beyond that is the

Land of the Naked Men and the Land of the Black-Teethed [*sic*] People (Tsunoda 1951:13). The *Sui Shu* contains a combined account of Taiwan and the Ryukyus, precipitating a series of disagreements about which area is referred to (Liang 1962). Higaonna (1957:2) insists that the characters for Ryukyu were used with their present meaning, that is exclusive of Taiwan, only during and after the Ming. Many of the first contacts between the Ryukyus and China may have been through shipwrecks from which only the vaguest stories filtered back to China. It was through similar shipwrecks and chance contacts that the Europeans came to learn about the Ryukyus (Kerr 1959:145, 231, 271). The T'ao T'ieh motifs from Hirota and the single Ming' Tao Ch'ien coin are indicative of one-way contacts, more than likely unintentional, even though the mouth of the Yangtze River is less than 500 miles away from Okinawa.

The *Ch'u Fan Chih* of the Sung Period (c. 1225 A.D.) mentions Botel Tobago, according to Wei and Liu (1962:1).

Taiwan and Okinawa were clearly separated in Chinese records by 1364, in an account written by Chou Chi-chung (Liang 1962:15). In this document, it was pointed out that the Lesser Liu Ch'iu (Taiwan) was similar to the Greater Liu Ch'iu (Okinawa) but that the people in Lesser Liu Ch'iu were more barbarous and vulgar. They seldom went to China; their customs were said to be similar to those of Japan, which at that time was in disfavor because of its refusal to pay tribute to China.

Records of the northern Ryukyus, Yakushima, and Tane appear in Japanese sources early in the 7th century. Kumejima and Ishigaki appear in the *Nihon Shoki* in 714 A.D. (Kishaba 1954:74). In 754 A.D. a boat of Japanese envoys stopped at Okinawa on the return voyage from China. They stayed for over a month, and a disciple of the chief priest Ganjin edited an account known as the *Daiwajō Tōseiden*. During this time the Ryukyus were divided into three groups—the nearest, the off-lying, and the furthest, as well as *Hate No Shima* (Hateruma Island), the most distant island (Higaonna 1957:6).

Navigation lanes between Japan and China remained removed from the Ryukyus until the Sung Dynasty. Earlier navigation had relied primarily on chance once the ships left Japan, because the sailors aimed in the direction of China until they reached the coast and then adjusted their course after they found out their approximate location. Many ships followed the coast of Korea, remaining near land until they struck out for the Shantung Peninsula. As late as the 9th century, the ships trav-

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TABLE 38
*Coins excavated from Ryukyuan sites**

Site	No. of Coins	Descriptive Name	Approximate Date
Gusukudake (Plate 5b)	1	Ming Tao Ch'ien	c. 265 B.C.
Katsuren	11	K'ai Yuan T'ung Pao	throughout T'ang
	3	Ching Te	1004 - 1008 A.D.
	3	Hsiang Fu	1008 - 1017
	5	T'ien Sheng	1023 - 1032
	1	Ching Yu	1034 - 1038
	5	Huang Sung	1038 - 1040
	1	Hsi Ning	1068 - 1077
	4	Yuan Feng	1078 - 1086
	3	Yuan Yu	1086 - 1094
	1	Shao Sheng	1094 - 1098
	2	Sheng Sung	1101 - 1119
	1	Ta Kuan	1107 - 1111
	1	Cheng Ho	1111 - 1118
	1	Chun Yu	1241 - 1253
1	Ta Chung	1008 - 1017	
19	Hung Wu	1368 - 1398	

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	1	Yung Lo	1403 - 1426
	1	Hsuan Te	1426 - 1436
Noguni	6	K'ai Yuan T'ung Pao	possibly 780 -785
Yambaru, Ishigaki	1	Ching Yu	1034 - 1037

**Katsuren data from Ryukyu Seifu Bunkazai Hogo Iin Kai 1965:31 (coin inscriptions but not reign dates); Noguni data from personal study of the Noguni collection; Yambaru data from Takiguchi (1960:135).*

eling between Fukien, Chekiang, and Japan still maintained the route from Shantung to Korea. During the 8th and early 9th centuries there was a shift in the intercourse of China with Japan from the lower Yangtze River to the lower Huai River, as well as to the Chekiang and Fukien coasts (Reischauer 1940:159). With the abolition of tribute missions to China late in the 9th century, Japanese interests, casual as they had been, subsided, and Ryukyu was undisturbed from the north until the end of the 12th century.

In 1186, Shimazu Tadahisa became the lord of the Satsuma fief of southern Kyushu and was given title to the Twelve Southern Islands, which included Okinawa. This was about the same time as the civil war in which the Taira clan was defeated by the Minamoto clan, and exiles are said to have fled to Ryukyu. Several years earlier, in 1156, the son of Minamoto had been sent into exile for an unsuccessful attempt upon the Taira clan, and he too was said to have reached Okinawa. Several local shrines as far south as Yaeyama are said to be associated with these exiles. It was even said that Okinawa was populated by Minamoto and the other islands by Taira. Much of this story appears to be an attempt to create traditions which bound Okinawa to the Japanese home islands in order to promote national solidarity. It may also have been used by Ashikaga and Shimazu as a rationale for the demanding of tribute.

The first dynasty of kings of Okinawa, the Shunten Dynasty (1187-1259 A.D.), lies in the twilight zone between protohistory and history. Following this period, the frequency of outside contacts increases and the pace of history within the Ryukyus quickens. Three dynasties follow, from 1260 to 1349, from 1350

to 1405, and 1405 to 1879. Writing, in the form of the Japanese *kana* syllabary, was introduced into Ryukyu during the reign of Shumba Junki (1237 to 1248) (Kerr 1959:54). However, there are at present no documents from this earliest period. The earliest extant written document is a letter from Ashikaga Yoshimochi to Shō Shishō (1406 to 1421) (Kobata 1939:9).

From the earliest castle period, which began about the 11th century, we have the *Omoro Sōshi*, a collection of songs comparable to the Japanese *Man'yōshū* (Sakamaki 1963:9-21). These give a detailed picture, through poetry, of Okinawa in the earliest historic period and have been translated and analyzed in an important study by Sakihara (n.d.).

In 1317, the fourth year of the Yen Yu reign, a ship from Miyako is known to have reached Wen Chou on the Chekiang coast (Yonaguni 1953). By 1372 a bustling trade was formally begun with the Ming emperors. Ryukyu was now included in the Ming tributary system. The tributary relationship was both ceremonial and commercial. The king of Chūzan, who later assumed control of all Okinawa, went through the investiture ceremonies and in turn agreed to deliver certain goods to the Chinese ports at specified times, by specified ships, and in prescribed quantities (Higaonna 1957:12). Throughout the duration of the tribute relationship, certain items remained standard: 50 to 60 horses of the small Tokara or Yonaguni variety and 40,000 to 60,000 *kin* of sulphur. During the 15th and early 16th centuries, most of the other goods, such as spices and sappan wood, were trans-shipments from Southeast Asia handled by Ryukyuan ships. From the Kansai area of Japan, Ryukyuan ships were consigned screens, folding fans, and elegant swords. The tribute was delivered to the National Treasury of China as offerings from the vassal state, but other goods could be traded at the same time. With investiture, there was also a license to trade for an unlimited number of days at the *Hui Kuan* of Foochow, whereas, Japan and other tributary nations were allowed to engage in trade for only a period of from three to five days. The system was designed to enhance the prestige of China, but it involved a considerable outflow of her currency. Detailed descriptions of the trade, based on the *Rekidai Hōan* documents, have been prepared by Kobata (1939), Lai (1962), Liang (1965), Hagenauer (1931), and Sakamaki (1963, 1964).

From the Ming, Ryukyu obtained porcelain and iron (Kobata 1939:119). The envoy of 1372, Yang Tai, paid for the horses and sulphur in fine silken goods and materials, but the Okinawans

TABLE 39

Tentative absolute chronology of the Ryukyus

South Kyushū	Satsunan Islands	Amami-Okinawa	Sakishima	Eastern Taiwan	
		Kogachi, Tsuboya, Kina, Imari Types	Panari Burial Type	Ami Ware	1900 A.D.
					1600
	Celadon, Glazed Stoneware Types	Celadon, Glazed Stoneware Types	Celadon, Glazed Stoneware Types		1400
(Historical Japan)		KATSUREN 1004-1436 A.D.*	Panari Functional Type		1200
		URASOE 1253 A.D.†	YAMBARU 1034 A.D.*	T'ai Yuan Ware	1000
			Shimotabaru Type		500
		Ushuku A Type	No pottery		
		NOGUNI 780 A.D.*	FUNAURA 1010 A.D.		0
		GARABI GO 760 A.D.			
Yayoi	Yayoi HIROTA 480 A.D.*	Ushuku B Type			
Yusu-Kurokawa Type		GUSUKUDAKE 265 B.C.*			500 B.C.
Nishibira-Kanegasaki Type		YAEJIMA 710 B.C.			
Goryō Type	Goryō Type	AGUNI 760 B.C.			
Ichiki Type	Ichiki Type	Ushuku C,D Types			1500
		ATTABARU 1408 B.C.			
pre-Ichiki Types	pre-Ichiki Types			Corded Ware	2500
		le Jima Bones (?)			

* *Dates from coins.*

† *Dates from tiles; other dates are from radiocarbon. Site names are in CAPITALS.*

demanded pottery and ceramic goods as well as iron. The next envoy, of 1374, is said to have brought 70,000 pieces of ceramics and 1,000 pieces of iron goods (Sakihara n.d.:89-100). After the mid-15th century, ships for trading, which had previously been given by the Ming, were made in Okinawa by Okinawans.

Trade missions extended as far as Malacca and Thailand early in the 15th century. However, they were not all financially successful. The Okinawans experienced considerable loss because the Thais insisted on buying their goods, including the trans-shipped ceramics, at a low official price. Later the Okinawans initiated free trade with Thailand (Kobata 1939:431). In the list which Kobata presents (1939:450), it is of interest that there is no mention of Sawankhalok ceramics, although wine, rosewater, textiles, and rare woods are mentioned.

The main point to be derived from the historical documents is that the Ryukyus were known comparatively early, but close connections were not maintained until the end of the first mil-

lennium A.D. Judging from the frequency of contacts during the 12th and 13th centuries, trade in the Ryukyus may have been firmly established long before it was formalized in 1372. Many of the celadon sherds found by Tawada on Okinawan castle sites were identified by Fujio Koyama as Sung rather than Ming. Similar sherds were found in abundance by G. Kerr in 1963 in Yaeyama.

The roof tiles of Urasoe Castle in Okinawa, inscribed with a year name within the sixty-year cycle, are believed to have been made by Korean artisans working in Okinawa in 1273 (Ōkawa 1962). Ōkawa argues against a date of 1153 which has been reached by earlier scholars using Japanese reign dates rather than those of the Okinawan dynasties. According to Ōkawa (1962:116), *Kao li* or *Korai* was stamped on the tiles as a mark of Korean workmanship in Okinawa; no trade channels at that time would have brought such tiles from Korea to Okinawa, and tiles made in Korea would not have borne such a mark. It is strange, however, that in an island as intensively settled as Okinawa the kiln site for these tiles, which must have been produced in considerable quantity, has never been found.

Table 39 shows the absolute chronology including the dates which have been discussed in this section. Now that the sites and types are placed in a tentative general space-time framework, certain conclusions concerning the establishment and development of culture in the Ryukyus can be drawn. These are presented in Chapters 8 and 9.

8

Formulation of Phases

The building blocks of local sequences and chronologies may be types or phases, depending upon the purposes of the writer. For the reconstruction of the manner in which prehistoric communities and populations lived, however, phases are used instead of types. In the formulation of phases, not only the characteristics of the pottery are considered; all available evidence is grouped together.

The phase is an abstraction from the reality of components. "It comprises 'arbitrary implements, weapons, ornaments, houses, burial rites, and ritual objects (that) are assumed to be the concrete expression of the common social traditions that bound together the people' (Childe 1950:2) of its components" (Rouse 1955:713). About its boundaries and definition, Willey and Phillips state that it is "an archaeological unit possessing traits sufficiently characteristic to distinguish it from all other units similarly conceived, whether of the same or other cultures of civilizations, spatially limited to a brief period of time" (Willey and Phillips 1958:22). In constructing the phase, Rouse uses "determinants," (the types and modes distinctive of the components), "the remainder of its types and modes, and its reconstructed customs and social structure" (1966).

Within the Ryukyus south of the Satsunan Islands, five phases may be isolated. The components from which these phases are abstracted are presented in Table 40, and the determinants are presented in the paragraphs below.

How many populations or peoples produced these phases can only be suggested at this point. For the northern and central Ryukyus, the situation is rather complex, since the linguistic situation is not clearly defined for the prehistoric period. The Japanese language (in dialect form) has been present as far south as Okinawa for about 2000 years (Smith 1960a). At present, in both southern Kyushu and Okinawa, there are place

names related to neither Okinawan nor modern Japanese (Uemura 1964:38). A considerable population change may have occurred between the Yaejima and Noguni Phases. In Yaeyama, there is no evidence in the archaeological record of major population replacements after the islands were colonized. Although concrete evidence is lacking, when Yaeyama came under the control of the Shuri court in the 15th and 16th centuries, the local officials sent from Shuri may have introduced a Japanese dialect to the area for the first time.

The Yaejima Phase, which existed in Amami and Okinawa from 2000 B.C. to 200 A.D., is characterized by a predominance of inland settlements; pottery with flat bottoms and incised, punctated, and ridged designs; and carved bone pendants. The Noguni Phase, which follows it, is immediately recognizable by the pottery, which is predominantly plain, brownish buff in color, and with occasional pointed bottoms. Even from a few sherds, one can distinguish the two major divisions of pottery on the basis of the orange-red color of the Yaejima Phase pottery (Ushuku B, C, and D) and the brownish buff color and comparative lack of grit of Ushuku A, the characteristic pottery of the Noguni Phase. During the Noguni Phase, the settlements were on the beaches and sand dunes, with occasional refuge sites such as Garabi Go in caves in the interior. The third phase in the central Ryukyus, the Katsuren Phase, is immediately recognizable through the presence of Chinese trade ceramics and iron tools, and a diversified settlement pattern in which walled castles and chiefs' residences occur on the top of limestone ridges or outcrops, while the agricultural settlements are located on the flat lands or along the seashore, depending upon the available water resources. In Sakishima, two phases, Nakama and Kudo, can be distinguished by the presence or absence of Chinese trade ceramics. Both can be distinguished from the phases of Okinawa by the presence of the typical Panari Types of pottery, special burial forms, and stone artifacts. Because of the apparent contemporaneity of pottery-and non-pottery-using groups as represented by the Funaura and Yambaru Sites (both dated at approximately 1000 A.D.) and the similarity of their stone artifacts, I have decided to group the ceramic and non-ceramic sites into a single phase, for the time being. I suspect that those with pottery and those without pottery may have been occupied by different peoples, but until further excavation is carried on, this distinction cannot be elaborated.

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TABLE 40

Components and phases in southern Kyushu, the Ryukyus, and eastern Taiwan

Phase	Component* or Site
Yaejima	Aguni, Attabaru, Kadena, Kanegusuku, Gusukudake, Igrisuzaka, Iha, Omonawa No. 2 Component 1, Omonawa No. 4 East Cave, Omonawa No. 4 Front Area, Ōbama, Ōyama, Sachihijah, Sumiyoshi, Ushuku (lower levels), Yaejima
Noguni	Akajanga, Chiarabaru, Garabi Go, Komesu, Noguni, Omonawa No. 2 Component 2a, Omonawa No. 3 (Kaneku), Shimashiyama, Tsuken, Ushuku (upper levels), Yabuchi
Katsuren	Asani, Katsuren, Maegome, Urasoe
Nakama	Funaura, Kabira, Nakama No. 1, Nakama No. 2, Shimotabaru
Kudo	Atanoshi, Kudo, Misuku, Nakamori, Pinishi, Yambaru
Ichiki	Issō, Izumi, Kasuga, Kusano, Ōwata, Shirogadaira, Watase, Yumuke
T'ai Yuan	Chung Yung, Peinan, T'ai Yuan, Tung Ho, You Tze Hu

**Where no specific component designation is given, it is presumed that the site has a single component.*

THE YAEJIMA PHASE

The sites are often located in the interior of large islands, and often high above sea level. They may be in locations sheltered by protecting ridges, near streams. The Ōyama and Iha Sites are on flat areas at the bases of such escarpments. The bedrock on which these sites are situated is limestone covered with thin, brown, sticky soil. An exception to the general rule may have been the Tsuken Island shoreline site, now destroyed, mentioned by Takemoto (1961). The Aguni Shell Mound, dated at the same time as Yaejima (700 B.C.), is situated in the center of the island of Aguni near the most abundant supply of water and above and below a limestone cliff. Houses, roughly rectangular in form, with the foundation outlined by limestone cobbles, have been found in the Ushuku and Sumiyoshi Sites of Amami Ōshima and Tokunoshima. Amami, which has terrain rougher than that of Okinawa, offered fewer hospitable inland sites, and some of the major sites of the phase were situated in sandy areas back from the sea.

The bones of dogs, pigs, deer, large rats, and fish indicate the range of animals used for food. The sites are without exception shell middens. Thirty shell species have been found in the Yaejima midden and 8 percent of these, by actual count, are land shells. Cycad seeds and the pith from the trunks may also have been important. There is no evidence for horticulture, except perhaps at the end of the phase. Stone arrowpoints are absent except at the Gusukudake Site (Takamiya 1961:3). There may have been an attempt, stimulated by contact with the Yuan Shan populations of northern Formosa, to produce the shell arrowheads such as those found at the Attabaru Site, but this innovation did not have a lasting effect. Wild pigs may have been caught in traps and dispatched with bone spears or clubs. Similar traps are used in Yaeyama at present. From the Yaejima Site, a fractured deer skull shows that the brains were probably eaten. Fishing net weights were made from *Arca* shells by roughly perforating them. The humerus of a large marine turtle (*Chelonia mydas*) was found in the midden sample from Aguni, and from several other sites tiny bone fragments of turtles also occurred.

The pottery is notable for its reddish color, sandiness, flat bottom, and grooved and incised decoration. The sherds are not abundant; basketry was probably highly developed. Woodwork was probably rudimentary, since there is but a single form of adze, round in cross section and semi-polished, and it occurs infrequently. From the Gusukudake Site, a roughly shaped *hache pediforme* was found (Komaki 1927:306). This form is believed to have been used for weeding and may have been used with other hoes in the cultivation of root crops, at the very end of the phase. A variety of crude bone artifacts, such as bone awls, has been found. Fragments of cut shell are known from the Yaejima Site and other sites, but complete artifacts of shell are rare from the early sites.

The remains which can be discussed in the categories of art and religion are particularly sparse in comparison with the classic Jōmon arts of Japan. Perforated boar's teeth and bone plaques of butterfly shape are the only items. The latter may be adaptations of the T'ao T'ieh style or a less developed animal style brought by stray contacts from the Yangtze area of China. From the elaborate burials of the Hirota Site, it is known that they were ornaments on clothing. Further evidence of contact with China is provided by the coin from the Gusukudake Site (Plate 5b).

THE NOGUNI PHASE

During the time span of the Noguni Phase, contact from the Chinese mainland increased, particularly after the establishment of the T'ang.

Sites of this phase are often in sand dunes close to the sea, at elevations a few yards above the high tide line; Akajanga, Komesu, Noguni, and Shimashiyama all fit into this pattern. Other sites such as Garabi Go occur in sheltered caves and may have been used during the cold, cloudy winter or perhaps only during typhoons. The settlements show the dual adaptation to exposed and sheltered situations.

From the Garabi Go Site there are the bones of pigs, dogs, and goats, although there is a possibility that the goats are intrusive. Fifty-five marine shell species are represented. As for fishing, an increase in perforated shell weights may reflect expanded activity. Some kind of horticulture was probably practiced.

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The pottery becomes more varied in shape, although surface decoration diminishes. Lugged pottery, similar to that of Yaeyama, appears in very small quantities, suggesting some contacts with people living to the south. There are arrowheads from only one site, and adzes and knives decrease in frequency. Rough hammerstones are found and shell is used increasingly. There are shell bracelets from Tsuken (Takemoto 1961:159), a shell adze from Chiarabaru (Tawada *et al.* 1962:73), and shell dishes and utensils from Shimashiyama (Plate 3a, b) and other sites. Leaf-shaped shell arrowheads were found at the Yabuchi site (Kokubu and Kaneko 1962:134-135).

The artifacts from the Noguni Site, hitherto undescribed, demonstrate aptly the degree of adaptation to shell. Many fragments of *Charonia tritonis*, a large Triton shell, with cut and ground edges, were discovered. Some of these are rectangular with a width of about 6 cm., and a length of 9 cm. They were probably used as small adzes or chisels. One of them has a constriction in the mid-portion, as if it had been hafted in the same manner as some of the small basalt hoes from T'ai Yuan. Abundant shell weights made of perforated bivalve shells were found at Noguni. *Spondylus* shells, almost nonexistent on other sites, were the most abundant material for shell weights, followed by *Tridacna maxima*, *Arca*, and *Meretrix*. At present no suitable answer can be given for the dramatic fluctuations of the numbers of weights per level, since the stratigraphy is imperfectly understood.

The lithic assemblage from Noguni includes pecked hammerstones, pecked stones with concavities, and heavy pebble hammerstones, all of which may have been used for cracking seeds and nuts and pounding food, particularly the tough cycad nut. Two fragments of chipped schistose hoes were recovered from the tenth layer. Three completely polished adzes of green quartzite may have been used for woodworking.

Iron fragments, recognizable as pieces of hoes or knives, are scattered throughout the site and occur on the bottom layer. A crescent-shaped shell ornament from the Noguni Site, reminiscent of the examples from K'en Ting (Utsurikawa 1936) and Hirota (Kokubu and Morizono 1958:18 No. 9), must have been worn on the chest as a pendant.

THE KATSUREN PHASE

During this phase, protohistory gives way to history, and Ryukyuan culture reaches a peak. Chinese contacts increase until formal trade relations are established at the end of the 14th century, bringing about a sharp increase in the complexity of the society, which can only be touched upon in an archaeological study.

Most of the excavated sites, as well as those represented by ruins above the ground, are hilltop "castles" or walled complexes. At least one hundred of these sites, including Urasoe, Katsuren, and Ōzato, exist on Okinawa Island itself, and other similar sites are scattered throughout the Ryukyus. The sites occur on high limestone outcrops which had no significance as settlement areas to the preceding societies. These were the houses and administrative centers of the local aristocracy. In spite of their exposed positions, dense groves of pines and elaborately finished stone walls protected the inhabitants from typhoons. Some of the houses within these enclosures had tiled roofs. Within the compound there was usually a well or spring. Shell midden refuse is sparse.

The farmers lived in villages close to or in the midst of their agricultural land.

The basic subsistence pattern changed little, except for the inevitable intensification of agriculture as the population grew. It is possible that strict conservation measures and rules for the distribution of produce became necessary during this phase.

Through trade, the material culture gained in complexity. At first foreign workmen built the temples and made the boats used for commerce. Later, Okinawans took up the imported skills and gave them a Ryukyuan flavor. For the local people, trade porcelain provided simple table ware, and trade stoneware furnished water and oil containers; but pottery continued to be used for everyday purposes. The upper classes had access to different kinds of trade goods, such as jade beads, abundant iron artifacts, and finer porcelain and stoneware. Some stone artifacts, such as wedges and grindstones, continued to be made. Adzes, however, were replaced with trade goods.

Local sculpture, painting, and architecture based on Chinese models were flourishing by the 15th century. A local literature, typified by the *Omoro Sōshi*, was established. With the exception of a small group of the nobility who espoused Buddhism, the indigenous religion remained strong.

THE NAKAMA PHASE

The major difficulty in proposing this phase is the small number of sites from which to generalize. Its beginning date cannot be ascertained.

The settlements occur on the coastal strips of Hateruma and Iriomote. The Nakama Sites of Iriomote are situated in a position to make full use of the Nakama River and the mud flats around the brackish estuary. During this time, other groups may have reached Yaeyama, particularly the area around Nagura Bay, but they left few remains.

Hoe agriculture, perhaps similar in principle to that of eastern Taiwan, was practiced. Wild pig and dugong bones have been found, as well as fish bones and abundant shells. A few deer bones occurred in the small bone sample from the Funaura Site.

The pottery is scarce and, as noted above, is not related to the mainstream of pottery as it developed in Okinawa. Worked bone and crude shell net sinkers have also been found. Large fragments of *Charonia* and *Tridacna* shells were used for hoes.

THE KUDO PHASE

From the ubiquitous evidence of scattered trade ceramics and a lack of prehistoric material, it seems that the small flat islands of Kuroshima and Taketomi were not occupied during the preceding phase but were inhabited only with the increased population of the later periods. Although the settlement pattern of this phase shows the same trend to diversification as in Okinawa, the heavily forested interiors of Iriomote and Ishigaki were never populated because of the presence of malaria. Rather than move into wetter areas of Iriomote and Ishigaki, the populations of this phase settled on the small islands and traveled back and forth to their fields on Iriomote. The same pattern persists to the present on Kohama and Hatoma.

Deep sea fishing was important, and from the evidence of shell reaping knives, millet and other crops were grown. The Korean castaways who described Yaeyama in 1477 found perennial rice which yielded a second crop after having been cut down once (Kokubu and Kaneko 1962:99). From the Yambaru Site, a potsherd with *Indica*-type rice grain impressions was found (Kokubu 1963:233).

Crudely made Panari Type pottery became abundant, and most of the stone artifacts were replaced by iron ones. Above-ground cist graves and special burial jars were common features. Bone artifacts, including long tapered points for spear fishing, were made in increasing quantities. Stone walls, enclosures, watch towers, and gardens, as well as monumental water tanks and single standing stones, were begun in this phase. Trade ceramics were used for serving food and storing oil or water.

The local religion found expression in enclosed shrines, with gates and repositories showing Chinese influence. The elaborate secondary burials reflected new ideas about the ancestors. Stone phalli, such as the one in Ishigaki City, may be derived from this phase.

Two other phases may be established for comparative purposes—the Ichiki Phase in south Kyushu and the Satsunan Islands, and the T'ai Yuan Phase in eastern Taiwan. Both of these phases have distinctive pottery and stone remains. They represent the cultures from which the colonists of the Ryukyus most likely come.

THE ICHIKI PHASE

Many of the villages were set back from the shore of Kagoshima Bay, often along small streams. The extent and nature of the excavations provide few clues as to the size and nature of the settlements.

From the evidence of the Izumi Site, wild boars, deer, wolves, dogs, badgers, and whales, as well as fish and shellfish, were eaten. Bird bones have been found in many other sites. Shimada and Hamada believe that the dog was domesticated primarily as a source of meat (1921:5). Horse teeth were found in the upper layers of the site, but whether or not horses were eaten is not known. There is no direct evidence for horticulture, although very highly specialized collecting from specific plants may have been practiced.

The pottery has been described in the chronological section above. The Ichiki, Namiki-Kasuga, and rare vessels, perhaps trade objects, of Nishibira-Kanegasaki were probably all in use in large communities of the time. Round stone balls, boilers, and slingstones were made, and bone was used for objects such as needles and hair pins. Fragments of a stone metate made of tuff were found at the Izumi Site, and from many sites stone grind-

stones have been recorded. Arrowheads are relatively common. Adzes with an oval cross section are most frequently encountered. Shell was used for bracelets but apparently found no favor for utilitarian objects such as adzes or chisels.

Painting on pottery appears very rarely. Ornaments included bone pendants, pins, and shell bracelets. The burials are usually primary, single, and contracted.

THE T'AI YUAN PHASE

The sites extend along the east coast of Taiwan from Shin Ch'eng, at the southern end of the Ilan Valley, to the southern end of Taiwan. While the cemeteries are occasionally near the sea, the settlements are always on elevated slopes either in the coastal mountain range or along the higher foothills in the rift valley. Judging from the size of the settlements and the nature of the dwelling found at Peinan, the settlements may have consisted of clusters of large multi-family dwellings.

No shells, animal bones, or plant remains have been found from the east coast sites. The presence of small perforated knives from the T'ai Yuan and Peinan Sites indicates the cultivation of rice and/or millet, and the abundance of chipped basalt hoes suggests that root crops such as taro may have been important. Fishing was not important, according to the archaeological record, although much of the gear may have been made of perishable materials.

Stone slabs, many of them over 10 feet high, were used for house and grave construction, in the same manner as they are used by the present-day Taiwan. From the diversity of polished adzes and chisels, wood-working must have been an important and fine art. Local basalt, used for the manufacture of hoes and stone uprights, is abundant. Stone-working techniques, as evidenced from sites at P'ing Lin and You Tze Hu, included sawing with sand. A variety of ornaments was made from green serpentine. Ceramics were widely used, and a wide range of shapes and sizes have been found. Textiles were woven, possibly of banana and hemp; spindle whorls have been found in abundance. Trade objects of iron and bronze occasionally occur in the cist coffins of this phase.

The megaliths of the T'ai Yuan phase may be divided into the following types:

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1. Stone coffins made from single huge boulders, such as the ones at Pesheren and Shin She.
2. Circular tanks, from Peinan and T'ai Yuan (Plate 17i).
3. Shouldered stones (from Chung Yung, T'ai Yuan, and Tung Ho). These may have ridges on the shoulder portion and single slight depressions low down on the body (Plates 15b; 16b-d).
4. Large, round, doughnut-shaped stones (found at the Chung Yung Site).
5. Phallic-shaped upright stones (two examples from T'ai Yuan).
6. Standing plain slabs, from T'ai Yuan (Plate 16a).

These large stones often occur in apparent association with the cist coffins, in which serpentine knives, adzes, and pottery vessels were interred with the dead. The coffins are made of slabs of schist or slate. With the exception of those in the O Luan Pi Site, the bones are never preserved.

The T'ai Yuan phase is strongly linked to the Yuan Shan culture through ceramics and some of the stone artifacts. Stepped adzes, which are common in the Taipei Basin, are not found on the east coast, and stone uprights, which are common on the east coast, are not found in the Taipei Basin. The uprights were probably introduced from the south—the Batanes and the Babuyan. They still function in the society of the Yami of Lan Yü (Plate 15d).

While on Lü Tao there are sites of the T'ai Yuan phase, no megaliths are reported. Cist tombs were found in two locations; and one site, known as You Tze Hu (Kano 1952:407), yielded chipped basalt hoes, slate knives, polished rectangular greenstone adzes, and serpentine bracelets and beads. From Lan Yü, which is out of sight from the east coast, these features, with the exception of the adzes and hoes, are missing.

THE COMPLEXES

Since the historic and Hirota-type remains from the Satsunan Islands are rather incompletely known at present, they have not been included in the formulation of the phases. For the time being, it seems more profitable to refer to them as the Hirota Complex and the Satsunan Historic Complex, since there is not enough information for the reconstruction of a pattern of living. Cruxent and Rouse have followed this plan in their distinction between styles and complexes in the chronology of

Chapter 8

Venezuela (Cruxent and Rouse 1958:3). The Corded and Ami Wares of eastern Taiwan and the deer bones of Okinawa may also be handled as complexes; I have omitted the pig bones from Ishigaki, since evidence that they belonged to domesticated individuals is not conclusive. For these five complexes, summarized in Table 41, the descriptions in the earlier chapters will suffice.

Archaeology of the Ryukyu Islands

TABLE 41

Phases and complexes in south Kyushu, the Ryukyus, and east Taiwan

South Kyushu	Satsunan	Amami-Okinawa	Sakishima	East Taiwan
	Satsunan	Katsuren	Kudo Phase	Ami Complex
	Historic	Phase	1250-1600	
	Complex	1250-1600 A.D.	A.D.	
	Hirota	Noguni	Nakama	T'ai Yuan
	Complex	Phase	Phase	Phase
		200-1250 A.D.	- -1250 A.D.	0-1250 A.D.*
Ichiki Phase	Ichiki	Yaejima		Corded Complex
2600 B.C.	Phase	Phase		
-1000 A.D.		2000 B.C.		
		-200 A.D.		

**Excavations during 1968 suggested that this phase might be considerably earlier.*

9

Phases and Adaptation in Ryukyuan Culture History

In the preceding chapter, the phases were described and distributionally correlated (cf. Rouse 1955:713). In this chapter, the genetic correlation of phases is suggested, and several points concerning the colonization and culture history of the Ryukyus are proposed.

GENETIC CORRELATION OF PHASES

There appears to be conclusive evidence for relating the Ichiki, Yaejima, and Noguni Phases by consecutive genetic links. For this discussion, a genetic link means that the material culture of one phase can be seen to have its basis or roots in that of a preceding phase. A continuity in total population should not simply be assumed on these grounds, however. The Ichiki and Yaejima Phases share pottery types—Ichiki, Ushuku D and Ushuku C—which could be placed in a series, that is, a set of similar and contiguous types (cf. Cruxent and Rouse 1958:22). On the basis of the common techniques (incision and punctation), decorative motifs (rectilinear designs and simple patterns on the neck, often with interior incision on the lip), and general shape (flat-bottomed, wide-mouthed jars, sometimes with a thickened lip) an Ichiki Series may be postulated. Although plain pottery and round bottoms appear to separate the sites of the Yaejima Phase from those of the Noguni Phase, a continuation of incised and punctated pottery up to the Noguni Site would attest to some genetic relationship and possibly some continuity in population. Whether or not a major break in the population of Amami and Okinawa took place before the Katsuren Phase, which is genetically related to the Noguni Phase, is difficult to postulate on the basis of the artifacts;

however, the historical material concerning the early contacts with the Chinese and the establishment of trade suggests that major migrations or population shifts did not occur.

The relations between the phases of Sakishima and Taiwan are not as clear. The contemporaneity of ceramic and non-ceramic sites in Yaeyama (a problem worthy of much more fieldwork) would suggest that the Nakama Phase may be related to several phases or cultures to the south and west of the islands which are not well known at present. The Yonaguni burial forms appear to be related both to the culture of the Batan Islands and to the T'ai Yuan Phase of eastern Taiwan. Stone tools, tanks, and uprights in Yaeyama show relations with eastern Taiwan. There is some evidence that boat building in Yaeyama after the colonization was influenced by the imitation of wrecked examples from Botel Tobago and that the original boats had been quite different (Kokubu and Kaneko 1962:91). Originally, the people might have used rafts similar to those in eastern Taiwan. For the time being, I suggest a genetic relationship between the T'ai Yuan and Nakama Phases, leaving open the question of relationships to other cultures.

In the genetic correlation of phases, one looks for differences as well as similarities. Ecological similarities do not always indicate that the two cultures or phases are genetically related. Conversely, in Ryukyu, the fact that phases have different ecologies does not mean that they may not be historically related. One of the chief problems in dealing with the Ryukyus is to account for differences between contiguous phases which appear to be genetically related. Previous authors have relied primarily on historical hypotheses. In this approach, the islands are viewed as part of the Southeast Asia, Japan, or China Sea culture areas, and the presence of various culture elements is accounted for on the basis of borrowing from different areas (cf. Kokubu and Kaneko 1962:111-112). The absence of certain traits is considered proof that there was no contact or that the survey or excavation work has not been intensive enough. For instance, Takamiya has said, "The culture which follows Jōmon is known as Yayoi. Its occurrence was recently attested in Okinoerabu by Mr. S. Kawaguchi. He also reported a [*sic*] Yayoi pottery fragment found in Yoron ... The present data suggest that, if Yayoi culture be found, it will be sought for in the realm after the shell midden age" (1961:8).

The succession of phases in the Ryukyus may better be understood as a series of adjustments to the physical and cultural environment. By viewing the culture history of the Ryukyus

in terms of historical contacts or radiations, one obscures the unique ecological features of the Ryukyu Islands themselves. Our problem to explain why genetically related phases with some homologous traits appear generally so different, requires ecological as well as historical investigation.

ECOLOGICAL ADAPTATION

Adjustment to the Environment of the Ryukyus

Southern Kyushu is wet and cool, and settlement would have been practical in almost any locality except on exposed mountainous terrain, or in the areas overlain with the deepest volcanic ash, where the water table might be too low. In the Ryukyus, the inhabitants of the Yaejima Phase generally chose settlements away from the coast, except in Amami where the interior areas are too rough. Hunting gradually became less profitable, and about 2,000 years after their arrival the people began to use the coastline for settlement, living almost directly on the beach. Cave sites may have been used for those times of the year when the beach was too dangerous or uncomfortable.

The shell samples from the Ryukyus show that despite varying specific environments the number of shell species utilized increased between phases. Land shells were taken in the same proportion in the Yaejima and Garabi Go Sites, although they were located in different parts of Okinawa and separated by 1800 years (see Appendix 1).

The Yayoi agricultural adaptation which proved so successful in Kyushu could not be expected to produce the same results in the islands, where with modern technology only 3 percent of the land is suitable for wet rice. At the same time as the Yayoi culture flourished in Kyushu, in the Ryukyus there were no characteristics of Yayoi culture, such as chiefs, classes, potential consumers for elaborate burials, and expensive bronze goods. Only at the northern margin of the Ryukyus, on a relatively flat island with ample water, such as Tane, did religious ideas persistent in Okinawa for centuries blossom in elaborate burial rituals.

In the Yaeyama group of Sakishima, which has proportionately fewer habitable areas of Ryukyuan limestone, an important factor determining settlement may have been malaria.

As the population grew, people moved to the offshore islands, establishing temporary farm shelters near their lands on Iriomote.

As well as geographical ecology, one may speak of cultural ecology—the way in which cultures interact with each other. In terms of cultural ecology, one may suggest an explanation for the fact that the Chinese and Okinawans did not enter into an active trading or tribute relationship until relatively late. Although the Chinese may have known of the Ryukyus as early as the Han Dynasty, the islands did not become important to them until the Sung, in spite of the fact that Chinese commerce was active in Borneo during the T'ang and active in the Philippines by the beginning of the Sung. Judging from the first objects to be traded in quantity—sulphur and small horses—the Ryukyus did not become important to the Chinese until the invention of gunpowder at the beginning of the Sung (cf. Needham 1958:39). The need for sulphur in China may have been directly related to the military build-up to resist the threat of the Mongols.

Effects of Island Colonization—The Founder Theory

Table 42 shows the distribution of types appearing on sites of the Ichiki Phase in southern Kyushu and the Satsunan Islands and the contemporary types of the Yaejima Phase. If these phases are genetically related, why should the pottery be so different?

This change seems to be a clear example of the founder theory principle. One of the characteristics of biological evolution on islands is that the frequency of genes in the parent pool will not be duplicated in the gene pool of the colony because of the restricted size of the colonizing group.

“Now, if the population of an island is started from a single or few accidentally introduced individuals, those founders will bring not the whole gene pool. But even if the environment of the island is much the same as the continent from which the founders came, a re-adaptive process is likely to be necessary because the gene pool of the new population will be unbalanced” (Dobzhansky 1963:71).

Vayda and Rappaport have stated: “Something like the founder theory principle discussed by the geneticists may well be operating not only in biological but also in cultural evolution ... We state this as a possibility rather than as a firmly estab-

TABLE 42

Contemporary pottery types of the Ichiki and Yaejima Phases, circa 2000 B.C.

Types			Location
Ichiki	Goryō	Yusu-Kurokawa	Kyushu
		Issō	Tane
			Kuchinoerabu
			Takara
		(Trade sherds)	Amami-Okinawa
Ushuku C			
Ushuku D			

lished principle, for there have been few studies concerned with the cultural contributions made by the founders of insular cultures" (1963:133).

"For most of the insular cultures of the Pacific it is difficult, if not impossible to specify just what were the cultures of the populations from which the founders came, and to what degree the founders shared in these cultures (1963:134).

"If the migration to an isolated place, whether a small island or an isolated continent is by a relatively small group of people who are unable to reproduce in full the culture of the population from which they are derived, then the culture in the new place will be immediately different from the culture in the homeland" (1963:134, 135).

The founder principle accounts for the lack of some Jōmon types such as Goryō and Nishibira-Kanegasaki, which were probably rare types anyway, but occurred with the Ichiki Type

in sites such as Kasuga and Izumi in Kagoshima. The Ichiki repertory itself undergoes great reduction between southern Kagoshima and the lower levels of Ushuku, so that according to the excavators only a few sherds approximate the type specimens from the former area. It seems reasonable to assume that not every type present in the sites at any one time level was made by every person. Goryō and Nishibira-Kanegasaki, from their superior finish and rarity, may have been types used by people of high status who had little chance of becoming colonists.

One of the anthropological aspects of primary interest in the culture history of the Ryukyus is the study of adaptation and the effects of isolation. The founder theory principle, or more simply, sampling error, which has not yet been demonstrated in the Pacific areas of Polynesia, Micronesia, or Melanesia, can be shown through archaeology to have operated in the central and northern Ryukyus. In addition, adaptation over two millennia to the limestone coral islands can be demonstrated through the shell remains and settlement patterns. In the future, settlement-pattern oriented archaeology with greater attention focused upon the totality of the site should bring a wealth of new data.

The founder theory should not be used to account for divergences between contiguous and contemporary cultures or phases unless there is some independent evidence for assuming that they are genetically related.

SUMMARY AND CONCLUSIONS

A tentative chronology of the Ryukyu Islands and the adjacent parts of Kyushu and Taiwan has been established by using the concepts of type and phase. Ten types for Kyushu, twenty-two types for the Ryukyus, and three wares for eastern Taiwan have been used to produce local sequences; and from the sites which are thus put in chronological order, phases have been abstracted. The phases show the major culture patterns which existed in the Ryukyus from approximately 2500 B.C. until 1700 A.D. The information about some of the remains is not extensive enough to permit the formation of phases; in these cases, the artifacts have been described as complexes. Comparison of the phases showed that a major trend in the culture history of the Ryukyus has been the increasingly intensive adaptation to the peculiar environment which the islands offer.

Summary of Ryukyuan Culture History-3000 B.C. to 1700 A.D.

Groups of hunters and gatherers lived in Kyushu for several millennia before the development of the Ichiki Phase of Jōmon culture, which probably took place in the second and third millennia B.C. and was followed by the Latest Jōmon Period, as defined by archaeologists using the five-fold system of classification (cf. Kagawa 1965:269). Although some writers believe that the earliest populations in the Ryukyus are related to the Early Jōmon (Yawata 1952; Kidder 1957:95), the compatibility of the relative dating and the similarity of the pottery types appear to support a later connection—between the Ichiki and Yaejima Phases (cf. Takamiya 1961:7). Because of the small size of the colonizing groups which reached Amami and Okinawa from Kyushu, many features of their culture in Kyushu were not reproduced in the islands. This reduction in the cultural inventory is construed as an example of the founder theory principle, a specific kind of sampling error in cultural evolution which occurs in small groups in isolation.

Probably between 2500 B.C. and 2000 B.C. the first colonizers moved south, beyond Tane and Yaku, to the islands such as Kuchinoerabu and Takara. They may well have stayed in these islands for generations before moving on to Amami Ōshima, or they may have felt that the smaller islands were unsafe because they are volcanically active, and settled on them only intermittently.

Early communities were established throughout Amami and Okinawa, and their inhabitants subsisted on fish, shellfish, and wild pigs, as well as gathered vegetable materials. Domesticated dogs were brought with them. Most of the settlements at this time were in protected areas inland from the sea. Since arrowheads were very rarely used, the wild game may have been caught in traps. Bone pins and needles, stone hammerstones and adzes, simple pottery jars, and occasional shell artifacts and ornaments are the only artifacts remaining from these sites. Possible house remains from the Ushuku and Sumiyoshi Sites of Amami and Tokuno are rough rectangles of coral boulders with small hearths and pits in the interior. On glottochronological evidence which places the arrival of the speakers of Japanese at the end of the Yaejima Phase (Smith 1960a), it is relatively certain that Japanese was not spoken during the early prehistory of the Ryukyus; however, the pre-Japanese language remains a mystery. Contact with the outside world was rare

and sporadic, as indicated by the shell and bone pendants from several sites and the Ming Tao Ch'ien coin from the Gusukudake Shell Mound.

Later sites in Amami and Okinawa, from about 200 to 1250 A.D., are situated on the shores and usually contain more shell species than the earlier ones. The frequency of stone artifacts decreases and the pottery becomes predominantly plain. These sites may have been populated by speakers of Japanese. Occasional hoes from sites such as Noguni indicate some kind of horticulture. The change in settlement from inland to seacoast and an increase in the number of shell species utilized indicate an adaptation to the reef environment of the Ryukyus. Contact both with China and Japan accelerated after the 8th century A.D. Coins dating to about 780 A.D. were found in the bottom of the Noguni Site, and references to Okinawa appear in Chinese and Japanese historical texts by the 8th century. Burials have not been found from these early phases.

The story of Sakishima is somewhat different. With the exception of the early pig bones from Ishigaki, which may or may not be from domesticated animals, there is no way of dating the cultures or phases until almost 1000 A.D. Groups with and groups without pottery may have coexisted on the islands of Yaeyama during the first millennium A.D. Chipped and semi-polished hoes, abundant on all the early sites, may indicate a strong reliance upon hoe agriculture. The pottery is radically different from the Jōmon-like pottery of Amami and Okinawa, being thick and coarse, without decoration, and shell-tempered. While no burials have been found in the prehistoric sites of Yaeyama, burials from the latest phase, the Kudo Phase, featuring aboveground cist tombs and multiple disposal burials, are common. Their date of introduction and their early development are not known. Shell-tempered pottery of the Panari Functional Type occurs in several late Okinawan sites such as Noguni; contact between Okinawa and Yaeyama must have been made several centuries before the advent of the Chinese trade but may have consisted of sporadic boats which drifted away from Yaeyama on the Black Current. Large stone tanks and uprights as well as abundant hoes, found in scattered locations in Sakishima, occur in eastern Taiwan and suggest rather close relationships between the two areas.

The megaliths of Taiwan are part of the T'ai Yuan Phase. This phase was preceded by the Corded Complex, which is relatively old in western Taiwan (pre-2500 B.C.), and was succeeded by the Ami Complex, the main constituents of which were probably

brought into the area by the first of the Ami tribesmen who occupy the area at present. It is suspected that the T'ai Yuan Phase may have existed during the first millennium A.D., although there are still no conclusive means of dating it.

Trade with China probably began on a small, unofficial basis. The official trade, which is said to have begun in 1372, was the end of a long series of events, mostly undocumented, as well as the beginning of a new means of subsistence for privileged members of the communities. Direct trading between the Ryukyus and China probably began in the late Sung and extended into the Ming; thereafter it was controlled by Japanese from Kyushu. Chinese celadons from the province of Chekiang were the most popular trade items, but large glazed stoneware jars for storing oil or water were also traded in considerable numbers. Until the 15th century, horses and sulphur were the chief export items from the Ryukyus; later, the major items to be traded were goods trans-shipped from Southeast Asia.

From the 13th to the 17th centuries A.D. the settlement pattern became diversified and social stratification emerged. While the peasants lived in settlements near the shore or close to the fields, the upper class lived in fortified "castles" on high ridges. That they had access to better porcelain and stoneware and luxury items such as jade beads can be verified from the recent excavations of the Katsuren Site (Ryukyu Seifu Bunkazai Hogo In Kai 1965). The people of Katsuren used many different forms of Chinese celadon, some of which were magnificently glazed. People living in smaller agricultural or fishing villages, however, used small celadon bowls of poorer quality. Local stoneware was produced in the 17th century, after the Ryukyus came under the control of the Satsuma fief.

This reconstruction does not take into account the fossil deer bones from Ie Jima, Okinawa, which are inadequately documented.

Major External Relationships of the Ryukyus

The prehistoric cultures of the Ryukyus fall into two major types, the dividing line being the 175-mile stretch of water between Okinawa and Miyako. To the south of this, the chipped hoes and thick plain pottery show similarities with the east coast of Taiwan. This area shows its strongest affinities to be with the south and east. From Okinawa to the north, the prehistoric cultures are related to Japan. The rarity of hoes would suggest a kind of subsistence different from horticulture, until

the advent of iron tools late in the first millennium A.D. Although they occur sporadically throughout the Ryukyus, reaping knives of shell or stone are so rare that it seems questionable that the crops which were reaped were major ones. Since stone reaping knives occur both in Kyushu and Taiwan, their occurrence in the Ryukyus reflects the general affinities of the culture of the Ryukyus to the cultures in the China Sea area (cf. Kokubu 1963:233). As time progressed, the cultures of the northern and central Ryukyus diverged more and more, adapting to different physical and cultural environments. The prehistoric boundary has been blurred in the historic period by recent migration to Sakishima from Okinawa and Japan and by the inclusion, since the 19th century, of all of the Ryukyus within the political boundaries of Japan.

It has been suggested that the Ryukyus constituted an important migration route from the south to Japan (cf. Smith 1953). This is not borne out by the archaeological evidence so far unearthed. From Okinawa to the north there is no evidence of concentrated penetration from the south until the time of the Noguni Site, about 800 A.D. The assemblages found in the shell middens of Okinawa all appear to be simplified versions of the Kyushu inventories, with exceptions such as the T'ao T'ieh shell plaques whose origin can be pinned down with relative assurance. However, palynological studies, in connection with a rigorous project for the absolute dating of sites in the Ryukyus, should be undertaken to ascertain the date of certain kinds of horticulture in the Ryukyus in relation to the date of its introduction to Japan. From the Yambaru Site, dated at the end of the prehistoric period in Yaeyama, a potsherd with *Indica*-type rice grain impressions was found (Kokubu 1963:233), but no further time depth can be ascertained at the present moment.

Attempts to trace the peopling of the Ryukyus by conventional physical anthropology should be regarded with skepticism unless one takes into account the extreme random patterning which can occur because of drift and isolation.

Certain features of the early culture of Okinawa, particularly the shell arrowheads of the Attabaru Site, the chipped hoes of the Nakama Phase, and scattered occurrences of grey impressed pottery, show connections with the prehistoric cultures of Taiwan. Contact between Taiwan and Okinawa must have occurred as early as 1400 B.C., the date of the Attabaru Site. The chipped hoes and grey impressed pottery may be appreciably later, but the precise date of their occurrence in the Ryukyus remains to be ascertained.

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The stone uprights, tombs, and tanks of the southern Ryukyus and Aguni Island represent an extension of the custom from Southeast Asia of building large stone monuments. These can also be seen on the east coast of Taiwan. Stone uprights may be seen in Botel Tobago, and sarcophagi occur throughout the Southeast Asian archipelago as far afield as Sumatra (Bartlett 1934: cf. esp. Plate XXV). A stone sarcophagus and several standing figures in Palau (Inez de Beauclair, personal correspondence) may well be related to the Taiwan and Ryukyuan megaliths and will require further investigation.

Several archaeologists have suggested that Korea should be considered as one source area for the formation of Okinawan culture (Kokubu and Kaneko 1964:23). Apart from the historical period, during which contacts with Korea are well documented, the chances of early significant intercourse are slim even as late as the 9th century, given the low degree of skill of the local navigation to points out of sight of land (see Chapter 7) and the fact that the Black Current flows counter to the direction of travel from Korea to the Ryukyus. Work on Cheju-do (Quelpart Island) and the south coast of Korea should be undertaken before any definite statements are made, however.

The Ryukyus remained isolated from the great traditions of East Asia and Southeast Asia until about the 12th century A.D., in spite of their proximity to China, Korea, and Japan, except for fortuitous contacts reflected by the T'ao T'ieh figures from Hirota and other sites. My interpretation of this fact is that the islands had nothing to offer the outside world until the Chinese developed gunpowder and required sulphur in large quantities. There are none of the Han mirrors which have been found in Japan, Korea, and Vietnam, none of the Han ceramics which have reputedly been found in Java (cf. the de Flines Collection in the Djakarta Museum), none of the T'ang ceramics found in Borneo, nor any of the glass paste beads which can still be found among the aborigines of Taiwan. Trade with the Sung, Yuan, and Ming Dynasties was extensive, judging from the abundant remains.

PLATES

PLATE 1 Sherds from the Ushuku Site, Amami Ōshima (measurements given are width at widest point).

a,b,g,h Sherds of the Ichiki Type from the Ushuku Site, Amami Ōshima. (a, 14cm; b, 8.4cm; g, 11.6cm; h, 9.2cm)

c Sherd of Ushuku B Type from the Ushuku Site, Amami Ōshima. (11.4cm)

d,e,i,l Sherds of Ushuku C Type from the Ushuku Site, Amami Ōshima. (d, 11.4cm; e, 7cm; i, 11.4cm; l, 9.2cm)

f Sherd of Ushuku D Type from the Ushuku Site, Amami Ōshima. (13.6cm)

j Sherd of Ushuku D Type from the lower levels of the Ushuku Site, Amami Ōshima. (9.8cm)

k Shell-scraped sherd from the lower levels of the Ushuku Site, Amami Ōshima. (10.6cm)

Specimens a-i, l, collection of the Nine Learned Societies, Japan;
j, k, Ushuku Primary School, Amami Ōshima

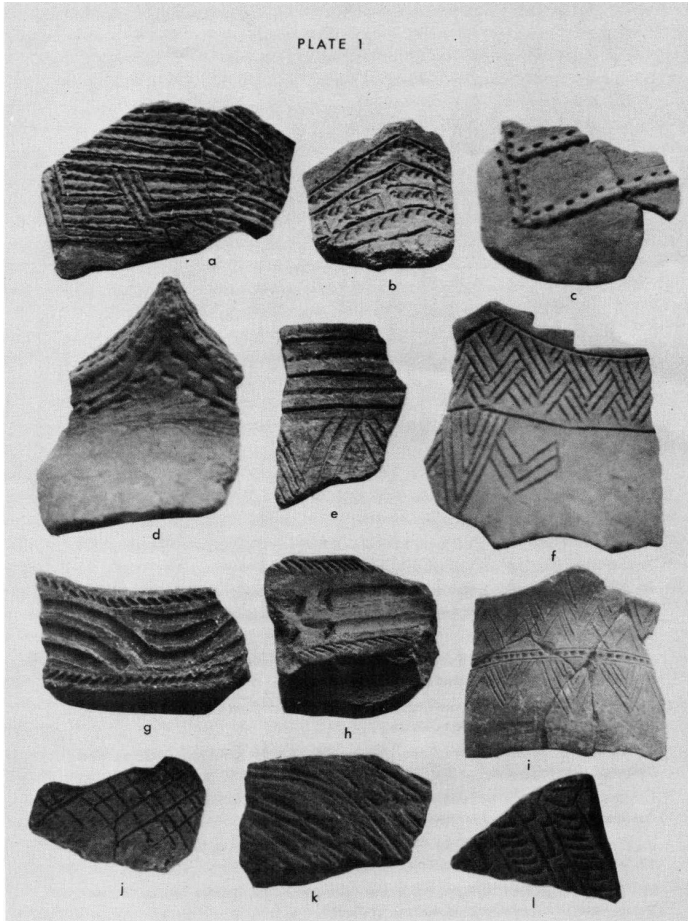


PLATE 2 Sherds from the Ushuku Site, Amami, and from sites on Takara Island (measurements given are width at widest point).

a,h Sherds of Ushuku D Type from the Ushuku Site, Amami Ōshima. (a, 11.6cm; h, 10.6cm). Nine Learned Societies, Japan

b,c Sherds of Ushuku C Type from the Ushuku Site, Amami Ōshima. (b, 10cm; c, 8.8cm). Nine Learned Societies, Japan

e Ushuku B Type sherd from the Ushuku Site, Amami Ōshima. (10.2cm). Nine Learned Societies, Japan

Plates

f Sherd of Ushuku B Type from the lower levels of the Ushuku Site, Amami Ōshima. (8.2cm). Ushuku Primary School, Amami Ōshima

d,g,i,j Sherds from the Ōbama Site, Takara Island, (d, 10cm; g, 12.2cm; i, 7.4cm; j, 15.4cm). Department of Archaeology, University of Kyoto

k Sherd of Ushuku A Type from the Igrisuzaka Site, Takara Island. (8.5cm). Department of Archaeology, University of Kyoto

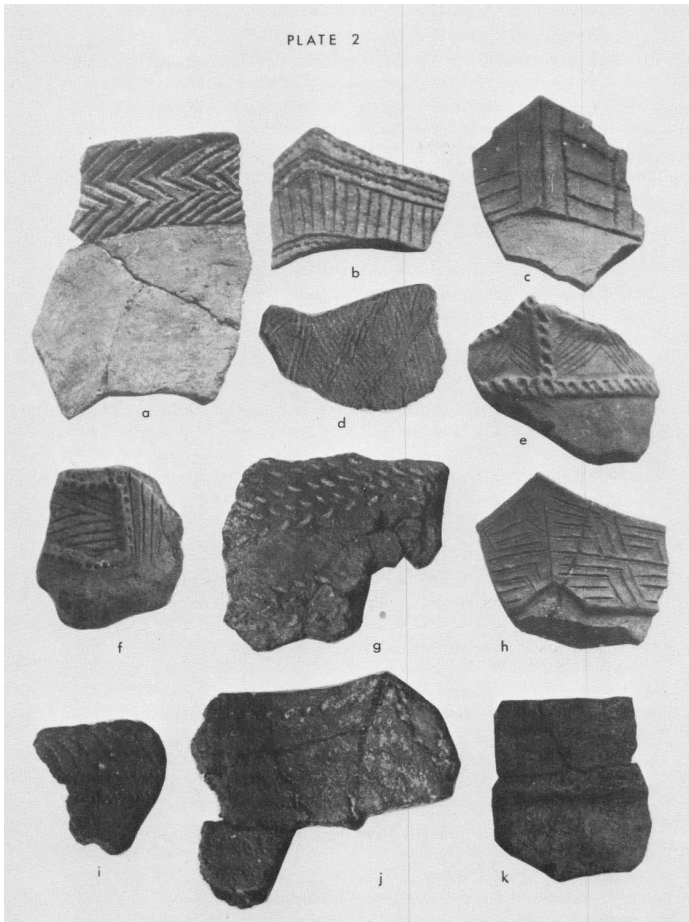


PLATE 3 Artifacts from the Shimashiyama, Sachihijah, and le Jima Sites, Okinawa (measurements given are width at widest point).

a,b Shell gouges from the Shimashiyama Site, Kudaka. (a, 11.2cm; b, 8cm). Ryukyu Museum, Naha

c,g Sherds of Ushuku A Type from the Shimashiyama Site, Kudaka. (c, 5.4cm; g, 4.8cm). Ryukyu Museum, Naha

d,e,f Pendants of stone (d) and shell (e,f) from the Sachihijah Site, Okinawa. (d, 2.6cm; e, 3.2cm; f, 2.6cm). Department of Archaeology, University of Kyoto

h Bone plaque from the Sachihijah Site, Okinawa. (6.3cm). Department of Archaeology, University of Kyoto

i,j Worked fragments of deer leg bones from le Jima. (i, 3cm; j, 3.2cm). From Tokunaga (1936:353)

k Metacarpus of recent Formosan muntjac deer (*Muntiacus reevesi micurus*) for comparison with l. (5.6cm). From Tokunaga (1936:353)

l Drilled deer metacarpus from le Jima. (8.4cm). From Tokunaga (1936:353)

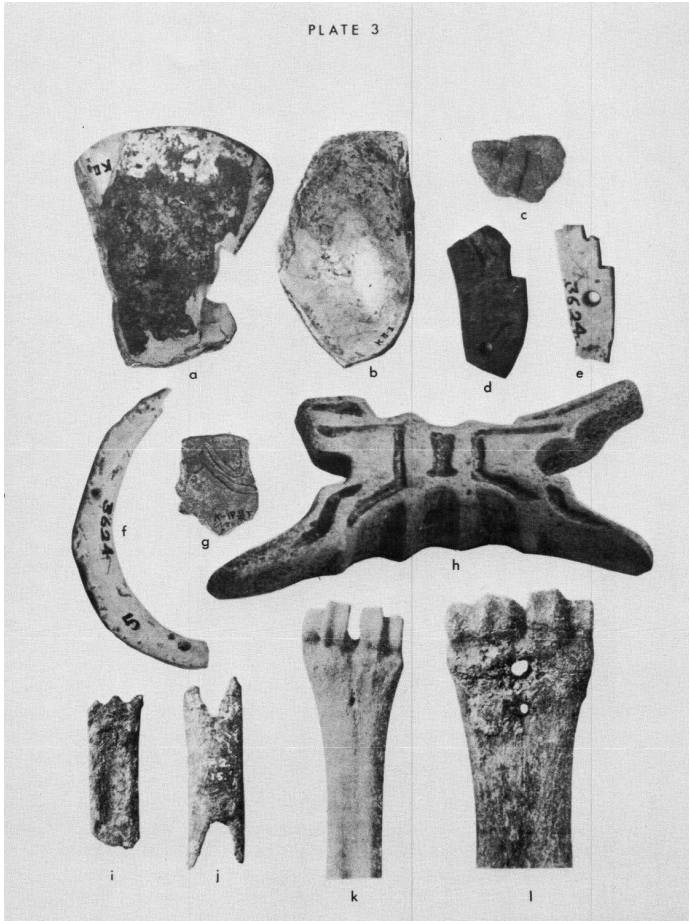


PLATE 4 Sherds from the Yaejima Site, and Trade Ceramics from Amami and Yaeyama.

a-f Sherds of Ushuku A Type from the Yaejima Site, Okinawa. Width at widest point: a, 6.3cm; b, 3.2cm; c, 5cm; d, 6.2cm; e, 2.2cm; f, 3.6cm

g Blue and White plate from an aboveground cist tomb at Ku'ura, Iriomote. Maximum diameter 12.3cm

h,j Blue and White vases from a cave tomb near Ushuku, Amami Ōshima. Heights 21 and 13.5cm respectively

i Grey stoneware vase from a tomb on Aragusuku. Height 13cm

Specimens from Yale Peabody Museum

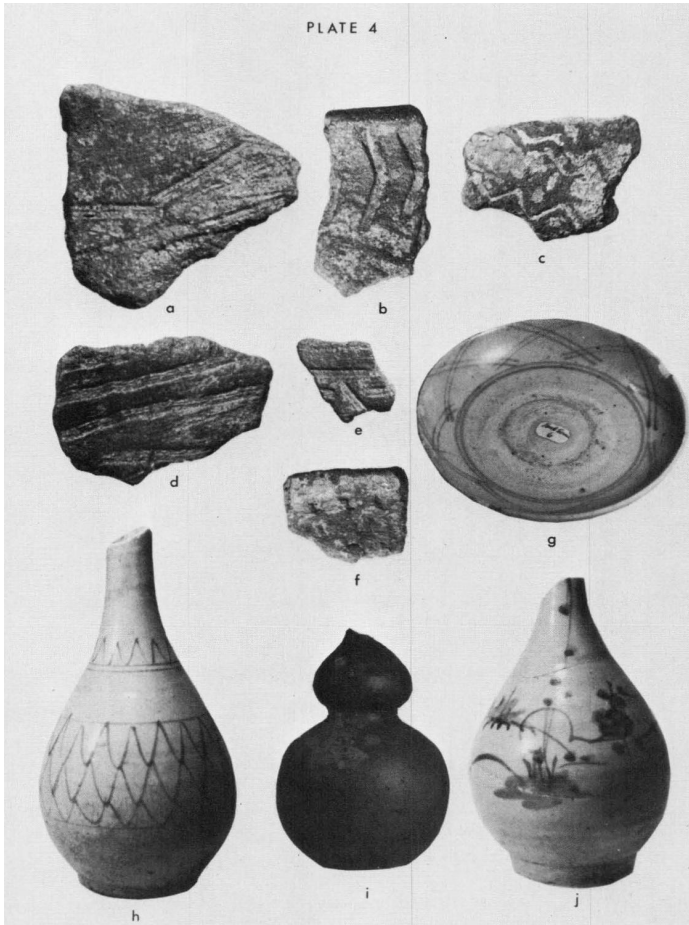


PLATE 5 Artifacts from the Ōyama, Kadena, Gusukudake, and Ogidō Sites, Okinawa.

a Pot of Ushuku C Type from the Ōyama Site, Okinawa. Height 15cm. Ryukyu Museum, Naha

b Ming Tao Ch'ien coin from the Gusukudake Site, Okinawa. Length, 11.5cm. Department of Archaeology, University of Tokyo

c Pot of Ushuku D Type from the Kadena Site, Okinawa. Height 11cm. Ryukyu Museum, Naha

Plates

d Pot of Ushuku D Type from the Kadena Site, Okinawa.
Height approximately 11cm. Ryukyu Museum, Naha

f Pot of Ushuku B Type from the Ōyama Site, Okinawa.
Height 23cm. Ryukyu Museum, Naha

e,g,h,i,j Sherds from the Ogidō Site, Okinawa. Width at
widest point: e, 7.2cm; g, 7.4cm; h, 3.2cm; i, 8cm; j,
6.4cm. Institute of Anthropology, University of Tokyo

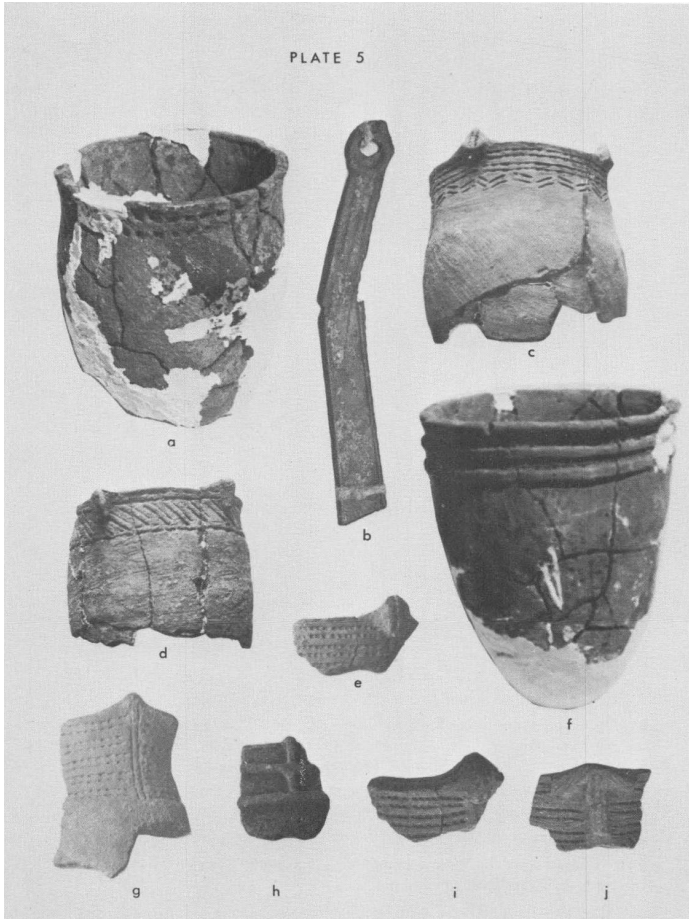


PLATE 6 Sherds from Katsuren, Urasoe, Misuku, and Atanoshi Sites (measurements given are width at widest point).

a-j Blue and White sherds of Ming Type from the Katsuren Site, Okinawa. (a, 3.8cm; b, 5.2cm; c, 6cm; d, 4.2cm; e, 8cm; f, 9cm; g, 4cm; h, 4.6cm; i, 2.8cm; j, 5cm)

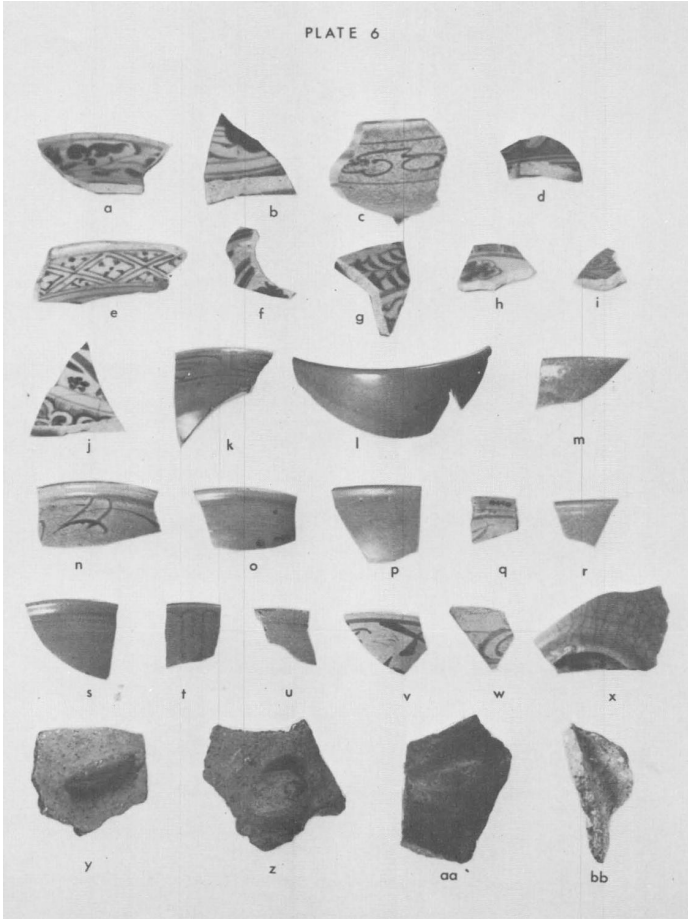
k-u Rim sherds of small celadon bowls from the Misuku Site, Hateruma. All except q show the exterior surface. (k, 2.8cm; l, 11.2cm; m, 5cm; n, 7.2cm; o, 6cm; p, 5.2cm; q, 2.8cm; r, 3.6cm; s, 5.4cm; t, 3.6cm; u, 3.2cm)

v,w Blue and White sherds, probably from vessels made in South China, from the Urasoe Site, Okinawa, (v, 4.4cm; w, 3.2cm)

x Celadon base sherd from Urasoe, Okinawa. (7.4cm)

y-bb Lugged sherds of Panari Functional Type from the Atanoshi Site, Hateruma. (y, 6.6cm; z, 8cm; aa, 6cm; bb, 3.4cm)

Specimens a-j, Colonel Stevens Collection, Okinawa; k-bb, Yale Peabody Museum



**PLATE 7 Sherds from Misuku, Asani, and Kogachi Sites
(measurements given are width at widest point).**

a,d Brown glazed stoneware from the Misuku Site, Hateruma. (a, 10cm; d, 7.6cm)

b Underglaze blue and white stoneware base sherd from the Asani Site, Amami Ōshima. (7.6cm)

c White glazed stoneware base sherd from the Asani Site, Amami Ōshima. (8.6cm)

e-h Base sherds of green glazed stoneware from the Kogachi Kiln Site, Okinawa. (e, 10.6cm; f, 7.6cm, g, 9.6cm; h, 10.4cm)

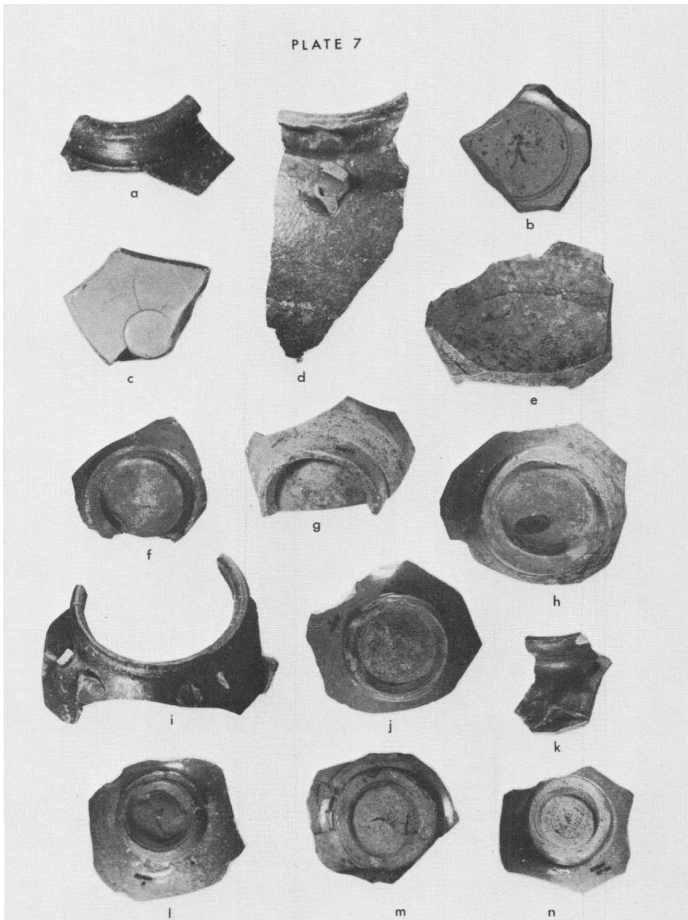
Plates

i,k Brown glazed stoneware rim sherds from the Misuku Site, Hateruma. (i, 13.4cm; k, 4.4cm)

j,n Celadon base sherd, Type A, from the Asani Site, Amami Ōshima. (j, 10cm; n, 7.4cm)

l,m Celadon bases from the Asani Site, Amami Ōshima. (l, 8.8cm; m, 8.6cm)

Specimens from Yale Peabody Museum



Plates

PLATE & Sherds from Katsuren and Urasoe Sites, Okinawa (measurements given are width at widest point).

a-k Celadon sherds of large and small bowls from the Katsuren Site, Okinawa. (a, 8.4cm; b, 5.4cm; c, 6.2cm; d, 10.2cm; e, 9.2cm; f, 6.8cm; g, 10cm; h, 5.4cm; i, 9cm; j, 10cm; k, 9.2cm)

l-q Temmoku sherds of small bowls from the Urasoe Site, Okinawa. (l, 7.4cm; m, 5.6cm; n, 6.4cm; o, 4.4cm; p, 3.6cm; q, 4.4cm)

Specimens from Yale Peabody Museum

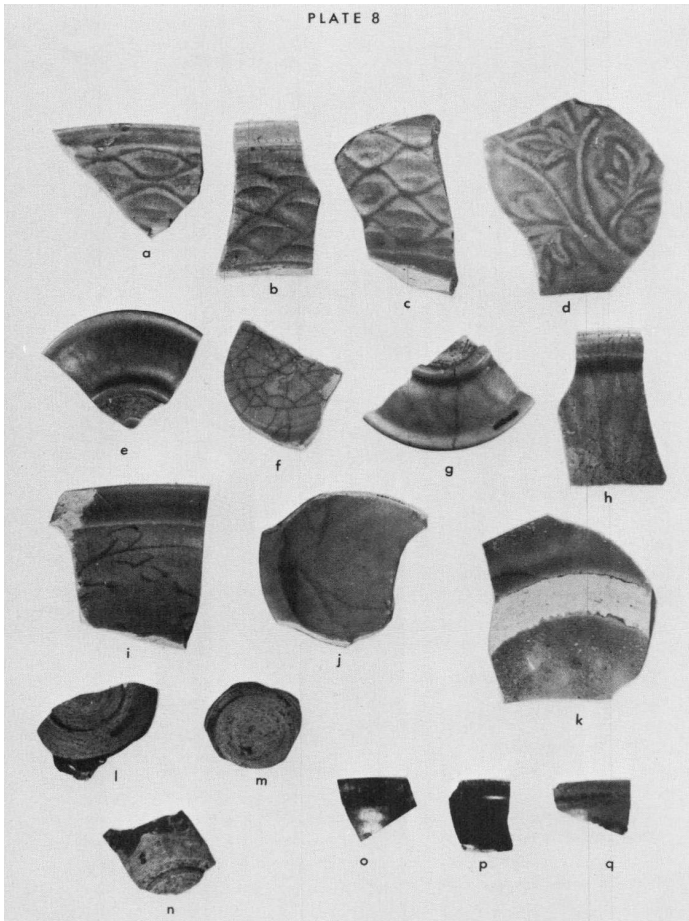


PLATE 9 Panari Sherds from Yaeyama

a Vessel of Panari Funerary Type from an aboveground cist tomb at Ku'ura, Iriomote. Height 23cm

b Vessel of Panari Functional Type from the Atanoshi Site, Hateruma. Height 23.5cm

c,d,e Sherds of Panari Functional Type from the Misuku Site, Hateruma. Width at widest point: c, 15cm; d, 13.6cm; e, 14.2cm

f Sherd of Panari Functional Type from the surface of the Pinishi Site, Iriomote. Width at widest point: 16.6cm

Specimens from Yale Peabody Museum

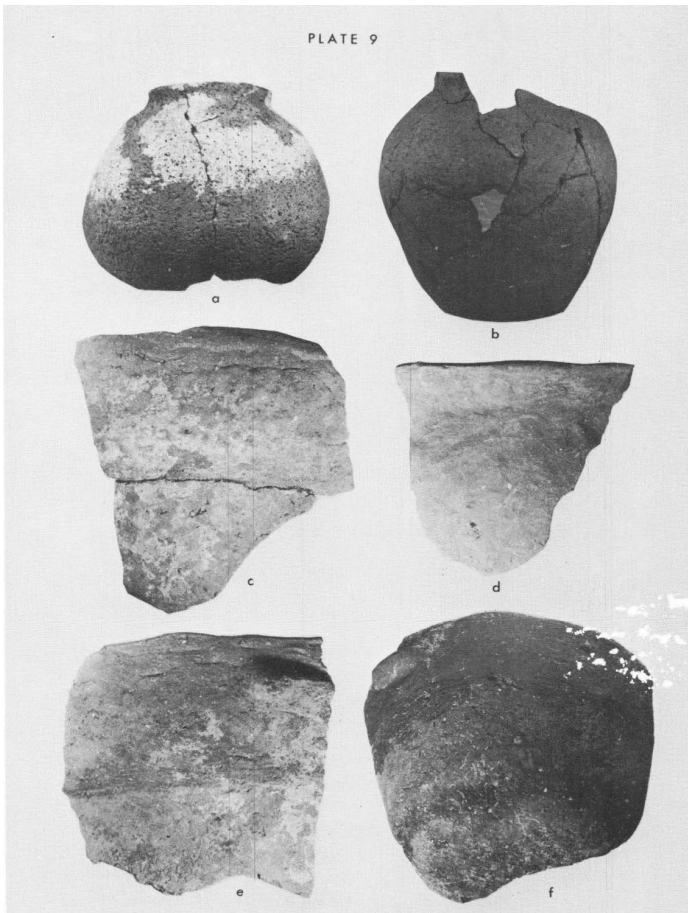


PLATE 10 Artifacts from K'en Ting and T'ai Yuan Sites, Taiwan (measurements given are width at widest point).

a,b,c Quartzite pebble choppers collected from the surface of the K'en Ting Site, Taiwan, (a, 5.8cm; b, 6.4cm; c, 7.4cm)

d Basalt hoe, T'ai Yuan Site, Taiwan. (7.4cm)

e,f Chipped slate artifacts from the T'ai Yuan Site, Taiwan. (e, 2.2cm; f, 4cm)

g,k Perforated knives from the T'ai Yuan Site, Taiwan. (g, 6.4cm; k, 3.8cm)

h Chipped knife of schistose stone from the T'ai Yuan Site, Taiwan. (4cm)

i Chipped maul, possibly of Ami origin, T'ai Yuan Site, Taiwan. (8.2cm)

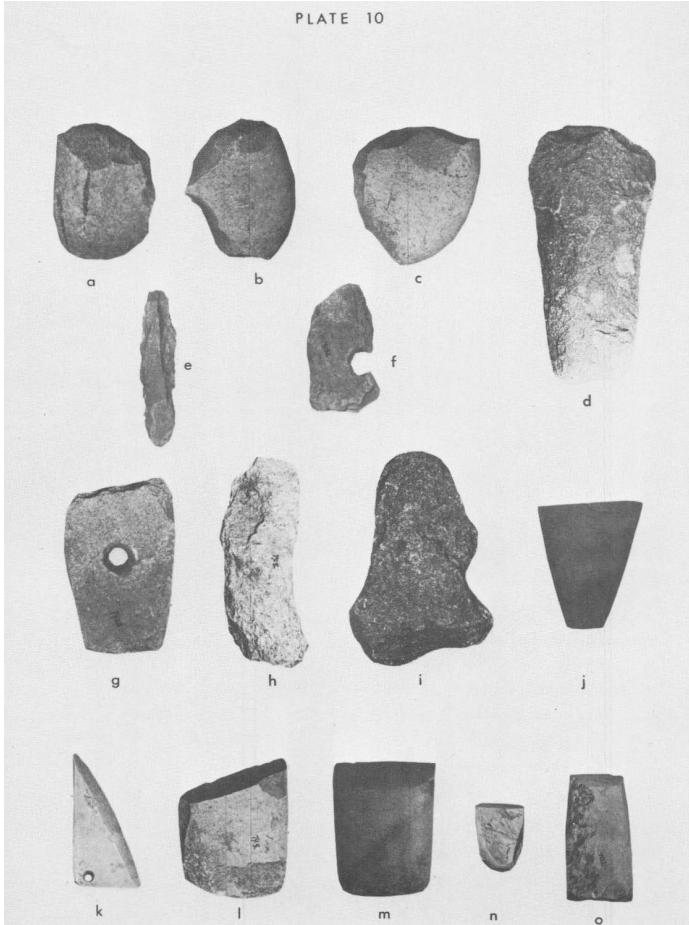
j Fragment of thin serpentine knife from a cist tomb, T'ai Yuan Site, Taiwan. (6cm)

l,m Polished rectangular adzes of green quartzite from the T'ai Yuan Site, Taiwan. (l, 6cm; m, 5.4cm)

n,o Adzes of green serpentine from cist tombs at the T'ai Yuan Site, Taiwan. (n, 2.8cm; o, 1.9cm)

Specimens from Department of Archaeology and Anthropology,
National Taiwan University

Plates



**PLATE 11 Artifacts from the T'ai Yuan Site, Taiwan
(measurements given are width at widest point).**

a,b,d,f,g Chipped stone hoes of basalt. (a, 5cm; b, 4.4cm; d, 6cm; f, 6cm; g, 5.6cm)

c Rough pebble chopper of green quartzite. (6.8cm)

e Hammerstone. (6cm)

h Lid with handle. (10cm)

i,n Handles of T'ai Yuan Ware, (i, 6.8cm; n, 5.4cm)

j Perforated lug of T'ai Yuan Ware. (6.2cm)

k Sherd of Corded Ware. (5.6cm)

Plates

l,m Low ring feet of T'ai Yuan Ware. (l, 6.2cm; m, 11.2cm)

Specimens from Department of Archaeology and Anthropology,
National Taiwan University



PLATE 12 Stone Tanks from Yonaguni (width of measuring tape cover, 5cm).

a Group of stone tanks surrounding the well at the abandoned Shimanaka Village, Yonaguni.

b Rectangular stone tank, Higawa Village, Yonaguni.

c Rectangular stone tank with protruding bottom at Anda Mizu, east of Higawa Village, Yonaguni.

Plates

d Rectangular stone tanks, Sonai Village, Yonaguni.

e Irregular-shaped stone bowl, Higawa Village, Yonaguni.

f Circular stone tank, said to have been made recently, at Higawa, Yonaguni.

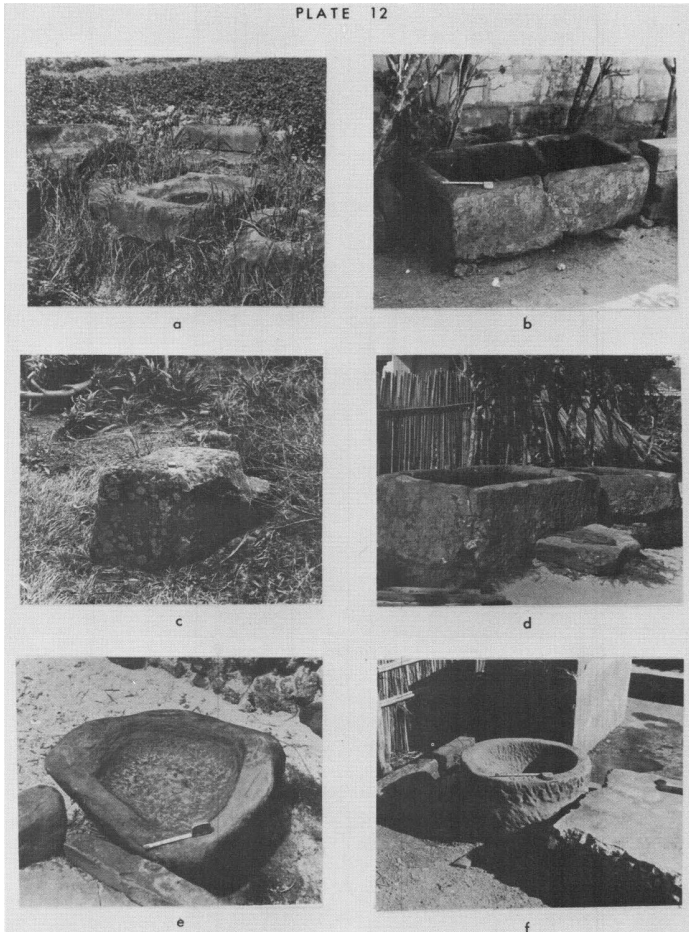


PLATE 13 Trade Ceramics from Amami and Yaeyama.

a,c White glazed stoneware bowl with blue chrysanthemum pattern from a tomb at Ku'ura, near Komi, Iriomote. Height 5.5cm, mouth diameter 13cm

Plates

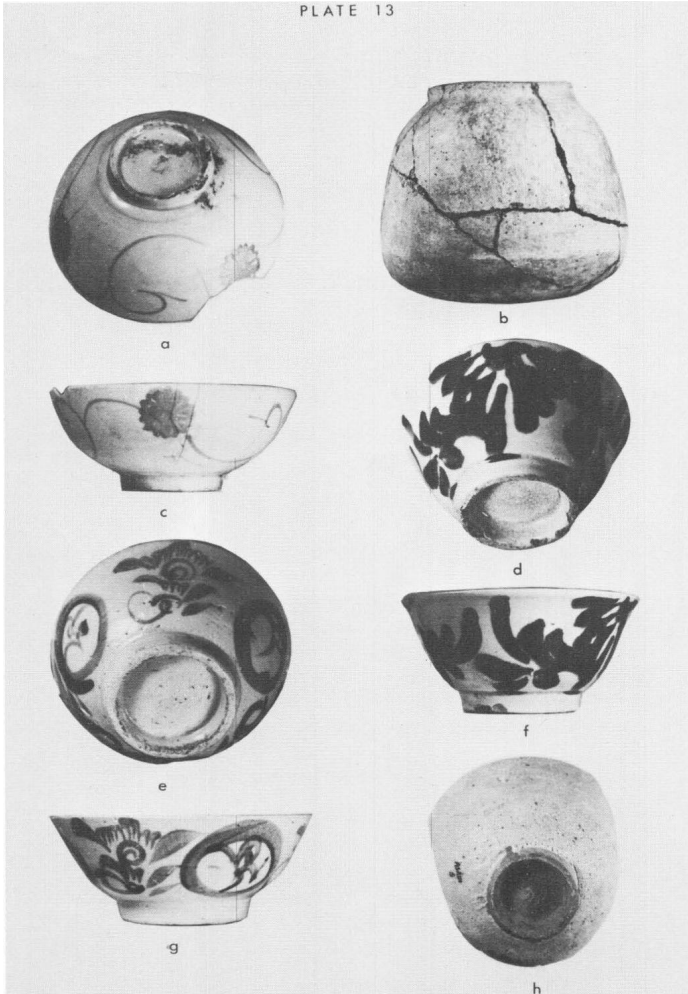
b Large burial urn of Panari Funerary Type from Funaura, Iriomote. Height 27.5cm, mouth diameter 19.5cm

d,f Underglaze Blue and White stoneware bowl from a tomb at Ku'ura near Komi, Iriomote. Height 6cm, mouth diameter 12.5cm

e,g Underglaze Blue and White stoneware bowl from a tomb on Aragusuku Island. Height 6cm, mouth diameter 15cm

h Broken greyish green celadon bowl, Type A, from the surface of the Asani Site, Amami Ōshima. Height 6.3cm

Specimens from Yale Peabody Museum



**PLATE 14 Trade Ceramics from Sakishima and Amami
(measurements given are width at widest point).**

a,b,c,d,g Celadon bases, Type B, from Kudo Site, Ishigaki. (a, 8.6cm; b, 9.2cm; c, 9.2cm, d, 4cm; g, 9.4cm)

e Blue and White sherd, probably of South Chinese manufacture, Shimajiri Site, Miyako. (6.6cm)

f,i Bases of small bowls with cut-outs on the foot ring, from the Kudo Site, Ishigaki. (f, 2.8cm; i, 6.8cm)

Plates

h Brown glazed tea bowl, probably from the Tsuboya kiln, found in a burial cave at Boramotojima, Miyako. Interior mouth diameter 8.7cm

j Blue and White base sherd from the Asani Site, Amami Ōshima. (10.4cm)

k Brown glazed stoneware rim sherd from the Atanoshi Site, Hateruma. Interior mouth diameter 8.6cm

l Black glazed stoneware sherd from the Asani Site, Amami Ōshima. (16.8cm)

Specimens a-e, Ryukyu Museum, Naha; f-1, Yale Peabody Museum

Plates



PLATE 15 Stone Remains from Yonaguni, T'ai Yuan, and Lan Yü.

a Detail of rectangular stone tank from Sonai Village, Yonaguni. (Scale in inches)

b Shouldered stone from the T'ai Yuan Site, eastern Taiwan. Total height 155cm or 5'2"

c Circular tank from Higawa Village, Yonaguni. (Scale in inches)

Plates

d Stone uprights on a house platform, Ivarinu Village, Lan Yü.

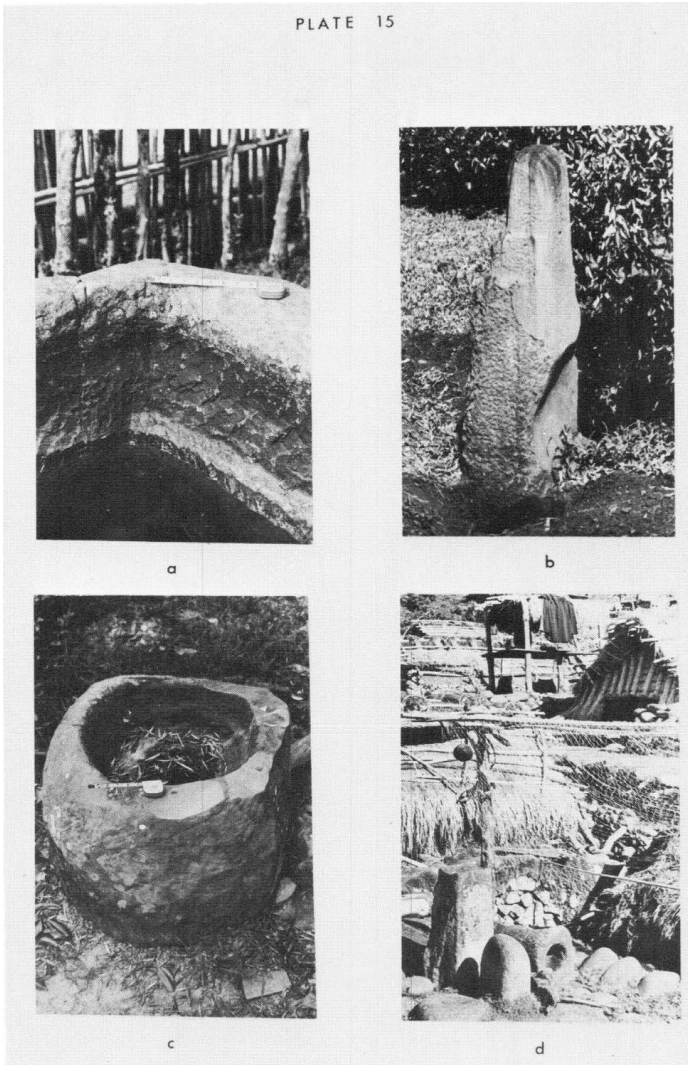


PLATE 16 Stone Remains from T'ai Yuan, Taiwan.

a Large white limestone-shaped slab. Scale on the top is approximately 15cm long

b Broken top of a shouldered stone with ridge on one side

Plates

c,d Shouldered stone. Obverse and reverse. Scale is 1 meter long. Total height of stone is 140cm or about 4'6"

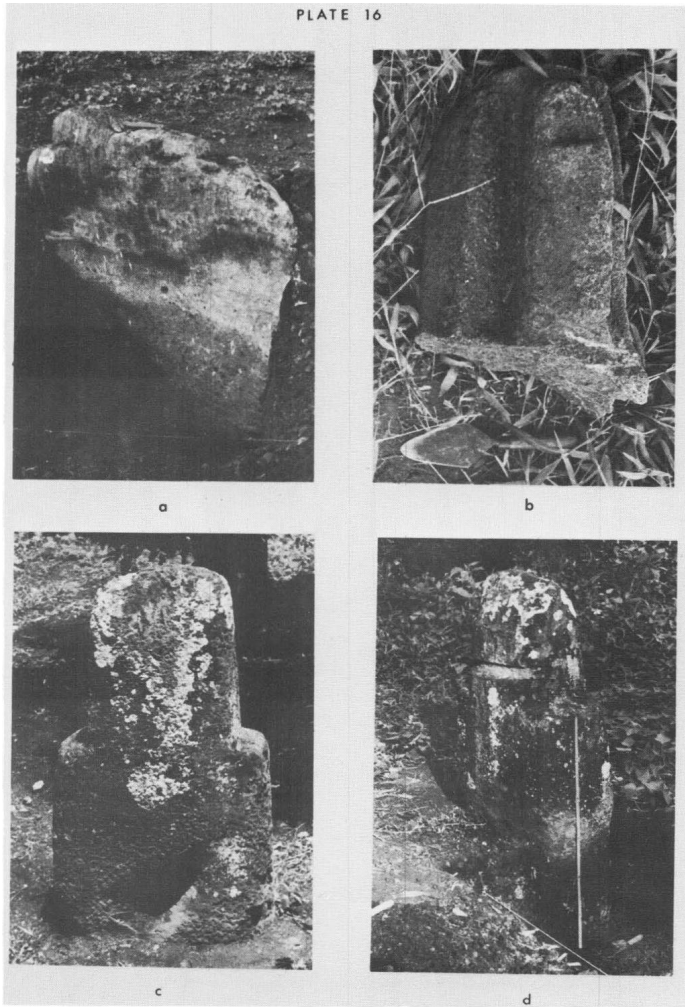


PLATE 17 Artifacts and Stone Remains from T'ai Yuan, Taiwan (measurements given are width at widest point).

a,e,f Pottery handles of T'ai Yuan Ware. (a, 4cm; e, 6.6cm; f, 9.6cm)

b Corded Ware sherd. (8.6cm)

c Clay spindle whorl. (4.6cm)

Plates

d Perforated Ami Ware. (8.2cm)

g Punctated T'ai Yuan Ware sherd. (5.4cm)

h Perforated ring foot sherd. (11.4cm)

i Stone tank and shouldered stone. Width of the narrow stone portion of the upright stone is 45cm

j Fragmentary vessel of T'ai Yuan Ware in a cist tomb. Approximately 15cm

Specimens from Department of Archaeology and Anthropology,
National Taiwan University

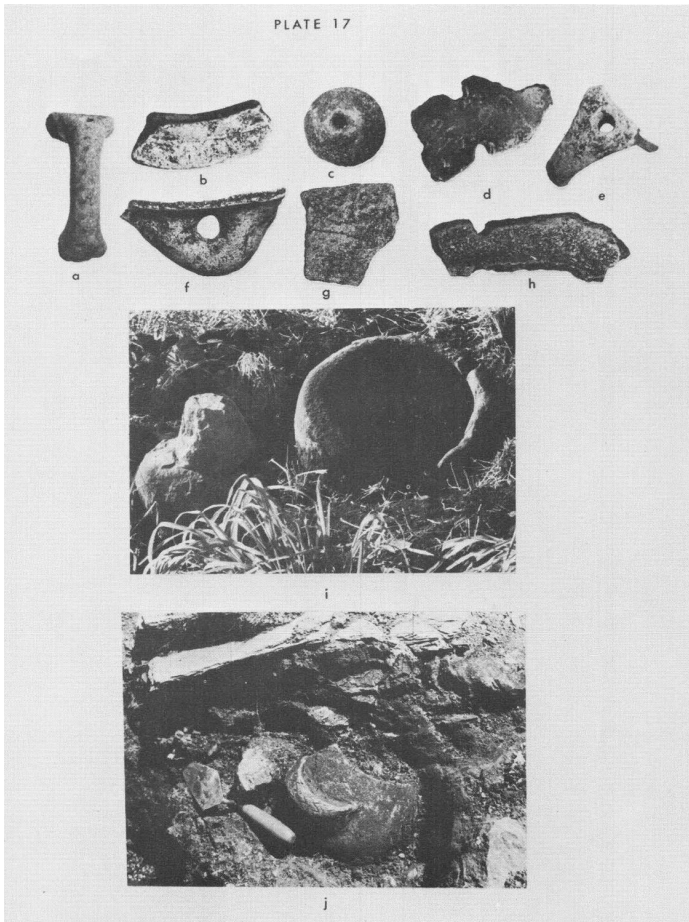


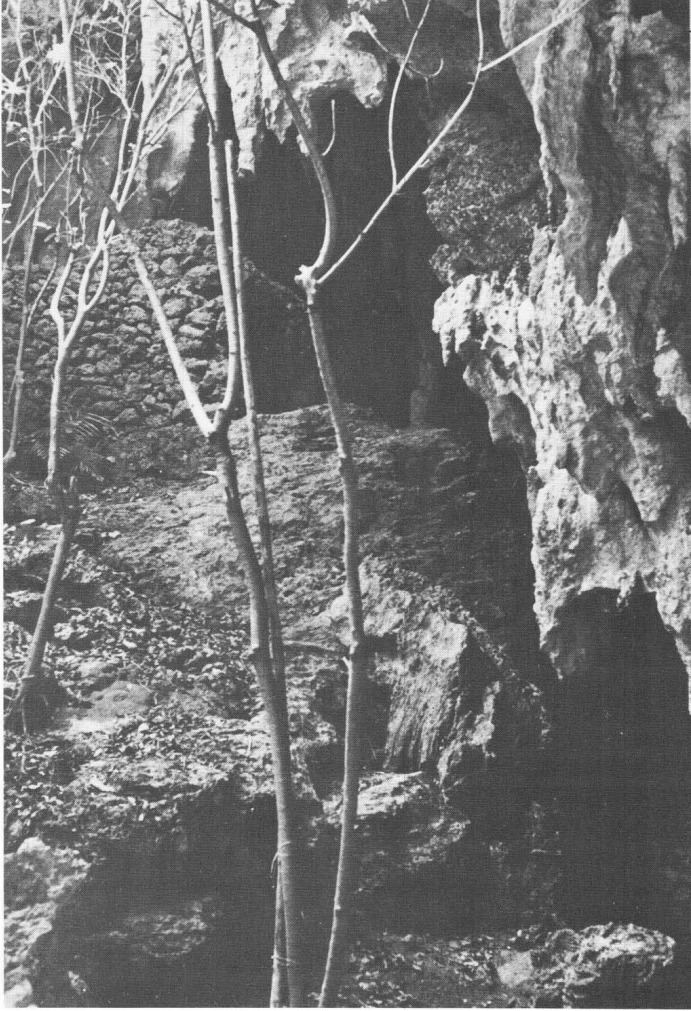
PLATE 18



a Trade ceramics from the top of an aboveground cist tomb, Aragusuku Island. These include Imari, possibly Korean, Tsuboya, and local Yaeyama products.



b Asani Site, Amami Ōshima Island. The site is below the arrow.



c Garabi Go Cave, Okinawa, showing modern stone work around the entrance. Excavation was in the interior, beyond the upper stone wall.

APPENDIX 1

Reconstruction of the Reef Ecology from Shells and Fish Bones

There are no adequate accounts in the ethnographies concerning the Ryukyus of the uses made of the seashore, nor are there details of how shellfish were collected. From the remains at hand, however, it seems that there was little reliance upon individual shellfish species and that collectors ranged far and wide over the reef, as I have observed them during fieldwork. It is hard to draw firm and fast chronological rules; for instance, land shells formed a small part of the diet of the peoples occupying Yaejima and Garabi Go and perhaps less of the diet of the occupants of Attabaru (Takamiya ms. referred to in Smith 1960a:39), although no quantification is available. But from a sample of the Aguni Shell Mound, the land shells constitute the majority of all the shells. It should be mentioned, however, that from the Aguni Shell Mound only one sample was taken.

The frequencies of shells from the nine sites which I tested are given in Table 43. Since many of the species are not common to the total site sample, I have decided to present each complement separately instead of combining them into a comparative table. Not all the shells have been identified by the same person or even by persons using an identical nomenclature.

TABLE 43
*Shells from Ryukyuan sites**

1.	Aguni Shell Mound, Aguni. Sample, 380 shells from 33" level.	
	Date, 760 B.C.	
	Land Shells	81%
	<i>Cypraea</i> sp.	12

Reconstruction of the Reef Ecology from Shells and Fish Bones

	Other species	7		
2.	Yaejima Shell Mound, Okinawa. Sample, 2,697 shells from 10 levels.			
	Date, 710 B.C. Total species, 30.			
	<i>Gafrarium tumidum</i>	35.4%		
	<i>Meretrix meretrix</i>	5.6		
	<i>Strombus urceus</i>	37.3		
	<i>Semisulcospina</i> sp.	5.8		
	Land Shells	7.9		
	25 other species	8.0		
3.	The Gusukudake Shell Mound, Okinawa. (Komaki 1927:299).			
	Date, c. 250 B.C. Total species, 44.			
	ABUNDANT SHELLS	COMMON SHELLS	RARE SHELLS	
	<i>Arca (Anadara) antiquata scapha</i>	<i>Tridacna crocea</i>	<i>Arca (Barbatia) obtusoides</i>	
	<i>Arca (Anadara) granosa</i>	<i>Tridacna maxima</i>	<i>Spondylus ducalis</i>	
	<i>Tridacna elongata</i> (Lamarck)	<i>Trochus niloticus</i>	<i>Gafrarium pectinatum</i>	
	<i>Cyrena luchuana</i> , <i>Cyrena fissidens</i>		<i>Antigona purpurea</i>	

Reconstruction of the Reef Ecology from Shells and Fish Bones

<i>Cyclina sinensis</i> (Gmelin)	<i>Terebralia</i> <i>semi-trusculata</i>	<i>Antigona</i> <i>reticulata</i>
<i>Gafrarium</i> <i>gibba</i>		<i>Marcia</i> <i>hemitapis</i>
<i>Strombus</i> <i>luhuanus</i>	<i>Conus literatus</i>	<i>Atactodea</i> <i>striata</i>
		<i>Tectus</i> <i>obeliscus</i>
		23 other species

4. Garabi Go Site, Okinawa. Sample, 615 shells.

Date, 760 A.D. Total species, 55.

<i>Strombus</i> <i>luhuanus</i>	42%
<i>Tridacna</i> <i>maxima</i>	9
Land Shells	8
<i>Trochus</i> <i>maculatus</i>	6
<i>Thais tuberosa</i>	5
<i>Semisulcospina</i> sp.	3
<i>Strombus</i> <i>urceus</i>	3
<i>Bursa fufonia</i>	1.5
47 other species	22.5

5. Shimotabaru Site, Hateruma. Sample, 878 shells (Kanaseki *et al.* 1964: 5, 6).

Date uncertain, perhaps 800-1000 A.D. Total species, 31.

Reconstruction of the Reef Ecology from Shells and Fish Bones

<i>Tridacna</i> (<i>Flodacna</i>) <i>squamosa</i>	21%
<i>Macra mulata</i>	19
<i>Tridacna</i> (<i>Chamatrachea</i>) <i>crocea</i>	8
<i>Tectus marimus</i> (<i>maximus?</i>)	8
<i>Contumax</i> <i>nodulosus</i>	6
<i>Turbo</i> <i>marmoratus</i>	5
<i>Conus</i> sp.	5
<i>Lambis</i> <i>chiragra</i> (<i>Harpago</i>)	3
<i>Lambis truncata</i>	3
22 other species	22

6. Funaura Shell Mound, Iriomote Island. Sample, 525 shells.

Date, 1000 A. D. Total species, 37.	
<i>Gafrarium</i> <i>tumidum</i>	15.0%
<i>Tridacna</i> <i>maxima</i>	12.3
<i>Lambis</i> sp.	11.2
<i>Pitar</i> sp.	11.0
<i>Cypraea</i> sp.	10.0
<i>Strombus</i> <i>canarium</i>	8.0

Reconstruction of the Reef Ecology from Shells and Fish Bones

	<i>Strombus luhuanus</i>	5.5
	<i>Meretrix meretrix</i>	4.4
	<i>Charonia tritonis</i>	3.4
	<i>Conus</i> sp.	3.2
	<i>Conus leopardus</i>	2.2
	26 other species	13.8
7.	Atanoshi Site, Hateruma. Sample, 233 shells.	
	Date, 1450 A.D. Total species, 30.	
	<i>Cypraea caputserpentis</i>	34.7%
	<i>Trochus maculatus</i>	11.5
	<i>Vasum turbinellus</i>	7.7
	<i>Turbo argyrostomus</i>	7.7
	<i>Trochus niloticus</i>	6.0
	<i>Conus</i> sp.	5.1
	<i>Tridacna</i> sp.	5.1
	<i>Thais arm igera</i>	3.0
	22 other species	19.2
8.	Misuku Site, Hateruma. Sample, 256 shells.	
	Date, 1450 A.D. Total species, 41.	

Reconstruction of the Reef Ecology from Shells and Fish Bones

<i>Cypraea caputserpentis</i>	23.0%
<i>Vasum turbinellus</i>	18
<i>Tridacna</i> sp.	11.3
<i>Trochus maculatus</i>	8.5
<i>Conus</i> sp.	6.5
<i>Cypraea</i> sp.	4.2
<i>Lambis</i> sp.	2.3
34 other species	26.2
9. Asani Shell Mound, Amami Oshima. Sample, 2,535 shells.	
Date, c. 1650 A.D. Total species, 37.	
<i>Strombus luhuanus</i>	49.5%
<i>Turbo setosus</i>	16.4
<i>Trochus</i> sp.	10.1
<i>Turbo</i> sp.	5.7
Land Shells	5.4
32 other species	12.9

**The Iha Site, excavated by Ōyama, had 44 species, and the Ogidō Site, 34 (Komaki 1927:299). Shells from the Nakama No. 1 Site (22 species) and from the Nakama No. 2 Site (10 species) (Takiguchi 1960:117-118, 112) have not been listed because the data are not quantified.*

The two samples from Hateruma demonstrate that in sites of the same time period sharing the same environment the same kinds of shells were collected. The other sites share neither temporal nor spatial attributes. There is a trend, however, for

the later sites to contain more species of shells. This is probably an indication of a more intensive adaptation to the reef environment of the Ryukyus.

The seashore in front of the Garabi Go Site and the Asani Site has a flat, dead coral shelf which is exposed at low tide. This feature may account for the large number of *Strombus* shells. The presence of *Gafrarium* and *Meretrix* in the Funaura and Yaejima Sites may reflect their exploitation of quiet, sandy bays such as the one in front of the Funaura Site. The large proportion of *Arca* and *Gafrarium* shells at the Gusukudake Site seems logical when one considers the proximity of the site to many river estuaries near Naha.

In the village of Kabira on Ishigaki Island, the reef is fished several times each week, but the local men never venture out into the open sea. They may use small circular nets with cowrie shell weights (Smith 1960b:142), long nets which are dyed red with pig's blood, or bamboo fish traps. In the shallow waters of Kabira Bay fishing is also carried out with hook and line from dugout canoes.

The presence of bone spears, particularly those from the Nakamori Site on Hatoma and the Yambaru Site on Ishigaki, is probably evidence that spear fishing was practiced.

There are no data concerning the age of the Itoman community, a particular dialect group of southern Okinawa whose chief activity is fishing. It is difficult to determine at what time level complete community specialization of this nature could have occurred.

Nishimura (1964:67) states that one village on the tiny island of Kuroshima at present makes its living solely by fishing. Doubtless they cultivate their own crops as well, for Kuroshima is a small island and its contacts with the urbanized areas of Ishigaki are not so great. On Kuroshima women catch fish mostly by hand in the tiny pockets of the reef, but men fish by angling, spearing, and netting. Since most of the islands are enclosed by reefs, dragnets are not practical, but round nets or haul nets are used (Nishimura 1964:68). The fish may be driven into traps using *Miscanthus* branches or into weirs which may be 70 to 200 yards in diameter, with one small opening. These can be seen at Karimata on Miyako and on the shore of Iriomote near the village of Komi. Octopi are taken from holes in the reef which may be privately owned (Nishimura 1964:69). The people of Henza near Okinawa catch the octopus, using shells as lures, by raising the shell when the octopus has firmly grasped it (Nishimura 1964:69).

Reconstruction of the Reef Ecology from Shells and Fish Bones

We have little archaeological evidence to confirm or deny the antiquity of most of these fishing traits, however. No fish hooks have been found in the entire archaeological record for the Ryukyus. Table 44 shows the fish bones which have been identified from sites on the Ryukyus by Tokiharu Abe of the University of Tokyo. All of these fish can be caught in the shallow waters of the reef.

TABLE 44
Fish bones from Ryukyuan sites

Site	Level	Family or Species*
Yaejima (3-inch levels)	2,4,5,6	Lethrinidae (perch-like fishes)
	7,8,9	Labridae (wrasses)
	6	Scaridae (parrot fishes)
	5,6	Serranidae (sea basses)
	9	<i>Mylio macrocephalus</i> (small fish)
	9	Rajidae (skates)
Garabi Go (3-inch levels)	1	Sparidae (porgies)
	1,2	Lethrinidae (perch-like fishes)
	Surface	Diodontidae (porcupine fishes)
	2	<i>Mylio macrocephalus</i> (small fish)
	1	Scaridae (parrot fishes)
	1	Serranidae (sea basses)
Asani (6-inch levels)	7	Diodontidae (porcupine fishes)
Funaura (6-inch levels)	2	Tetraodontidae (puffers)
	1,2	Diodontidae (porcupine fishes)
	3	Scaridae (parrot fishes)
	2	Rajidae (skates)

*One or two specimens of each genus were represented.

Reconstruction of the Reef Ecology from Shells and Fish Bones

A considerable number of shark vertebrae were found in the Atanoshi and Misuku Sites. They are the caudal vertebrae of Carcharinid sharks, which usually live within the confines of the reef or enter the reef to feed at night. Since the bones of the sharks are cartilaginous and do not survive if cooked or buried, it can be assumed that the inhabitants of Hateruma cut off the tails of the sharks and threw them away, whereupon they dried in the hot sun. There are other methods of catching sharks than by using hooks; nooses and clubs may have been used, as in Samoa (Buck 1930:426, 427, 676).

APPENDIX 2

Characters for Place Names, Sites, and Types

Aguni 粟国
Akajanga アカジャンガ
Amami Ōshima 奄美大島
Anda Mizu アン*ダミズ
Anno 安納
Aragusuku 新城
Asani 朝仁
Ataka 阿高
Atanoshi アタノシ
Attabaru 熱田原
Boramotojima 保良元島
Ch'ang Pin 長浜
Chekiang 浙江
Chien (Temmoku) 建
Ch'ing Ho Hsien (Hopei) 清河縣
Ch'ing Te Chen 景德鎮
Chiran 知覽
Ch'u Chou 処州
Chung Yung 忠勇
Esaka 江坂
Feng Pi T'ou 鳳鼻頭
Fukuoka 福岡
Funaura 船浦
Gabusoka 我部祖河
Garabi Go ガラビゴ
Goryō 御領
Gushikawa 具志川
Gusukudake 城丘
Hamahiga 浜比嘉
Hateruma 波照間

Characters for Place Names, Sites, and Types

Hatoma 鳩間
Henza 平安座
Higashi 東
Hikachiyama 日勝山
Hinai (Higawa) 樋川
Hirota 広田
Hisamatsu 久松
Hsiu-Ku-Luan 秀姑巒
Hualien 花蓮
Ibusuki 指宿
Ichiki 市來
Ie 伊江
Igirisuzaka イギリス坂
Iha 伊波
Iheya 伊平屋
Ikema 池間
Ilan 宜蘭
Irabu 伊良部
Iriomote 西表
Isa 伊佐
Ishigaki 石垣
Ishizaka 石坂
Issō 一湊
Itatsuke 板付
Iwasaki 岩崎
Izena 伊是名
Izumi 出水
Kabira 川平
Kadena 嘉手納
Kagoshima 鹿兒島
Kaimon Dake 開聞香
Kakeruma 加計呂麻
Kanda 神田
Kanegasaki 鐘ヶ崎
Kanegusuku 兼城
Kaneku 兼久
Kannon 觀音
Kasari 笠利
Kasuga 春日
Katsuren 勝連
Kayama 嘉弥真

Characters for Place Names, Sites, and Types

Kayauchibanta 茅打バンタ
K'en Ting 墾丁
Kerama 慶良間
Kikai 嘉界
Kogachi 古我知
Kohama 小浜
Ko-Imari 古伊万里
Komi 古見
Kuchinoerabu 口之永良部
Kudaka 久高
Kudo クド
Kumamoto 熊本
Kume 久米
Kunigami 国頭
Kurima 來間
Kurokawa 黒川
Kuroshima 黒島
Kusano 草野
Ku'ura 久宇良
Kyūshū 九州
Lan Yü 蘭嶼
Lung Ch'uan 竜泉
Lung Shan 竜山
Lü Tao 緑島
Matsubara 松原
Ma Wu 馬武
Minatogawa 港川
Ming Tao Ch'ien 明刀錢
Minna 水納
Misuku ミスク
Miyagusuku 宮城
Miyajima 宮島
Miyako 宮古
Miyanoura 宮ノ浦
Moto-jō 本城
Naeshirogawa 苗代川
Nagura 名藏
Naha 那覇
Nakagami 中頭
Nakagusuku 中城
Nakama 仲間

Characters for Place Names, Sites, and Types

Nakamori 仲森
Nakasone 仲宗根
Nakazato 仲里
Namiki 並木
Nanzan (Ōzato) 南山
Nase 名瀬
Nishibira 西平
Nishinoomote 西ノ表
Noguni 野国
Ōbara 大原
Ōgami 大神
Ogidō 荻堂
Ōhama 大浜
Okinawa 沖縄
Okinoerabu
O Luan Pi 鵝鑾鼻
Omonawa 面繩
Ōsumi 大隅
Ōyama 大山
Pei Ch'i 北溪
Peinan Ta Ch'i 卑南大溪
Pesheren (Pai Shou Lien) 白守蓮
Pinishi 平西
Sachihijah 崎樋川
Sainokami 塞ノ神
Sakishima 先島
Sakura Jima 桜島
Satsuma 薩摩
Satsunan 薩南
Senbagatani 戰場ヶ谷
Seto 瀬戸
Shimajiri 島尻
Shimanaka 島仲
Shimashiyama シマシヤマ
Shimotabaru 下田原
Shirakawa 後良川
Shirogadaira 城ヶ平
Shuri 首里
Sobata 會烟
Sonai 租納
Suao 蘇澳

Characters for Place Names, Sites, and Types

Sumiyoshi 住吉
Suwanose 諏訪之瀨
Swatow 汕頭
Ta Chiang Kou 大港口
Taitung 台東
Taiwan 台灣
T'ai Yuan 泰源
Takara 宝
Taketomi 竹富
Tamukeyama 手向山
Tane 種子島
T'ao T'ieh 饜饜
Ta Tzu Ch'i K'o 大慈溪口
Tarama 多良間
Temmoku 天目
Teruya 照屋
Ting 鼎
Todoroki 轟
Tokara 吐噶喇
Tokunoshima 德之島
Tsuboya 壺屋
Tsuken 津堅
Tung Ho 東河
Urasoe 浦添
Ushuku 宇宿
Wadamae 和田前
Watase 渡瀨
Yabuchi 藪地
Yaejima 八重島
Yaeyama 八重山
Yakushima 屋久島
Yambaru 山原
Yayu 椰油
Yonaguni 与那国
Yoron 与論
Yoshida 吉田
You Tze Hu 油子湖
Yuan Shan 圓山
Yumuke 湯向

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Archaeology of the Ryukyu Islands

Richard J. Pearson

Archaeological excavations have produced findings showing many important relationships between the culture of the Ryukyu Islands and that of surrounding areas, especially the islands of Kyushu and Taiwan.

The present study is a synthesis of findings from excavations in Kyushu and the Ryukyus, particularly those contributed by Japanese researchers published in the last decade and those resulting from recent fieldwork on the east coast of Taiwan. From his own excavations and those of other archaeologists, the author has formulated phases of cultural development and has related them in a regional temporal framework. Included here is an extensive, detailed analysis of ceramic typology for southern Kyushu and proposed ceramic types and wares for the Ryukyus and Taiwan. The author suggests that cultural differences between Kyushu and the Ryukyus may have resulted from the isolation of small colonizing groups and through the interaction of the inhabitants with differing environments.

An important contribution to the literature on Far Eastern prehistory, this book also places Ryukyuan culture in the context of related neighboring cultures, and it should be of interest to anyone concerned with East Asian cultural history.

About the Author

Richard J. Pearson, Associate Professor of Anthropology at the University of Hawaii, has done extensive archaeological fieldwork in the Ryukyu Islands and Taiwan. A number of his papers published in anthropological and archaeological journals concern Hawaiian archaeology, prehistoric cultures of Taiwan, and archaeology in Canada, the Philippines, and Korea.