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Authorities on Japanese domestic architecture have called the minka, a dwelling developed during that nation's feudal years, the house of the common man in Japan. Their descriptions of the minka include its numerous constituent features. Of these, 23 traditionally associated with the dwelling have been selected for study.

The minka was the dwelling known to the Japanese immigrants who arrived in Hawaii in greatest numbers from 1885 to 1907. It is the subject of this study in material culture.

As an investigation into the strength of traditions as they affect material culture, this study addresses these questions: what is the theoretical explanation for the persistence of house features; have the Japanese immigrants and their progeny adhered to their traditional house features during the century they have lived in Hawaii; what effect did historical periods of poverty and racial discrimination have on continuity in house features among persons of Japanese ancestry; what effect has acculturation had on features in present day houses and what is its likely effect to be on houses yet to be built?

In order to interpret persistence in dwelling features, the author formulated this theory:

Dwelling features that have endured reflect
deeply-rooted cultural concepts that have evolved in a society. However, features do change. Events arise that are perceived as concerns in a society, and individuals may react by making temporary changes in their dwellings. Concerns that are intense and protracted may lead to changes in concepts. Changes in concepts will be reflected in permanent changes in dwellings.

Interviews with 153 persons of Japanese ancestry who described 631 residences in which they had lived in Hawaii established that they have retained their traditional house features during the past century. The frequency of use varies, but no feature has been completely rejected. However, the use to which some features now are put differs from the original purpose, and the concepts of aesthetics and status associated with some features are undergoing change.

Neither poverty nor racial discrimination induced the immigrants or their progeny to abandon their house traditions during the historical periods when these were major problems confronting them.

A century of exposure to acculturation has had some effect upon the group and upon each of the three generations comprising it, as measured by the presence of traditional features in their present houses. However, the more significant measurement in the survey shows the percentages in each generation who desire the 23 features and would
include them in a new house. The percentages indicate lasting strength of traditions, for only 3 of the 23 features have waned to the point that possibly few persons would include them in future houses.

The study is evidence that the theory on continuity and dwelling features applies to the *minka* in Hawaii. Features associated with the concepts of religion, space, aesthetics, utility, and status have persisted. Those representative of the concepts of religion, space, and aesthetics have been most prevalent in houses of the past and are desired most for houses of the future.
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This is the story of a dwelling, most of whose features Japanese immigrants brought with them to Hawaii, there to win the favor of successive generations despite their nurture in a Western cultural environment. The dwelling is the minka, developed during the Japanese feudal years 1192-1867 through the cooperative efforts of master carpenters, craftsmen, and house-holders.

Rooted in an austerity of means, the traditional house of the common man in Japan attains beauty and order in its simplicity of design and use of materials in their most natural state. Economies and versatility flow from the principles of pre-fabrication, replaceability of individual parts, and flexible use of space. Interior design accommodates the respect for religion and the interest in art objects one finds in Japanese culture.

Over the years I have been a guest of Japanese families in their traditional dwellings. My first visit was in 1948 to a sixty-year old house in a village at the edge of Tokyo. The most recent was in 1973 to one built four centuries ago in Kyoto, an ancient capital of Japan.

When I first saw Hawaii, a brief passage through Honolulu in 1964, I sensed that many components of the minka had been preserved in Hawaii. A century after the arrival of the first Japanese immigrants, single family
dwellings included the more prominent external features of their traditional house. Later, as a resident of Hawaii and a teacher at the University conducting research on ethnic differences in housing, I also observed many surviving internal features of the minka in houses of Americans of Japanese ancestry.

Here was a story of cultural persistence reflected in one aspect of the Japanese way of life, the dwelling. Yet I could find no investigation, general or specific, of this component of the Japanese life style in Hawaii.

My intention in this study is to examine the process whereby the minka has become a part of American culture.

My selection of the dwelling of the common man for investigation, rather than the dwellings of the elite class, reflects personal preference and attitudes.

When I lived in Japan from 1948-1950 and became interested in Japanese housing, the minka was the prevalent type of house. It was fairly common when I continued my research during the summers of 1965, 1972, and 1973. This matter of accessibility, though, was quite secondary to my desire to study the house of the common people. The houses of the elite seldom suffer from want of reporting. Furthermore, they disclose refinements in housing scarcely known to the vast majority of the population. The overriding consideration, however, was that demonstrating continuity in culture in this instance required studying
the *minka*; this was the house in which the immigrants had lived before moving to Hawaii.

The background preparation for this investigation included study of works by authorities on architecture, aesthetics, houseform and culture, human values, Japanese and Hawaiian history, Shintoism and Zen Buddhism. Certain sources deserve specific mention because of the relevance of the information they provided. The reports of students of Japanese ancestry enrolled in my ethnic housing and costume courses have furnished a continuing supply of pertinent information.

I consulted with Professor Emeritus Andrew W. Lind, University of Hawaii sociologist and student of the Japanese in Hawaii, and toured buildings in Honolulu with former American Studies Professor J. Meredith Neil to complement lectures on Hawaiian history. Intensive study of the authentic tea house at the East-West Center in Honolulu illustrated the design principles borrowed from the traditional Japanese residential architecture.

The photographs Bishop Hanmo Imamura provided from the Honpa Hongwanji files illustrated the architectural similarities of the Buddhist temple and the *minka*. They inspired the hypothesis that the temple helped sustain external features of the *minka* in Hawaii.

Bishop Seiji Takai of the Kotohira Jinsha Shinto Sect of Hawaii illustrated and clarified similarities and
differences between shrine and residential architecture. The Bishop Museum, Archives of Hawaii, and Honolulu Academy of Arts were helpful in opening their files on plantation and ethnic housing in the state since 1880. Also of major importance were my consultations with officials of the United Japanese Society of Hawaii and observations of Japanese style homes on the principal islands of the state.

My final comment concerns terminology in this study. In the Japanese language, the singular and plural forms of such words as minka and shōji are identical. The applicable form is determined by context. In this study the same practice is followed.
CHAPTER I
The Problem and the Approach

A Japanese visitor to Hawaii, with an eye accustomed to the silhouette of one of his traditional houseforms, the minka, would readily recognize houses resembling this genre on each of the major islands of the state. Mindful of the inroads that Western architecture has made in Japan, he might well ask the aged immigrants, the issei, why so few had adopted the completely Western house despite decades of residence in Hawaii. Should he talk with the immigrants' children, the nisei, or their grandchildren, the sansei, he would note an interest in recognizing their Japanese heritage.

Years before the immigrants attempted to transmit their culture by teaching Japanese traditions in the family circle, instituting Japanese language schools, and in some instances, sending their children to Japan to be educated.

But the immigrants became discouraged; they could not contend with their children's responses to peer group pressures in the school and on the playgrounds to become "Americanized". Nor could they refute their children's argument that the Caucasian's ways held the most promise for "success".

Now, years later, the immigrants were gratified to be interviewed by their grandchildren about the minka in Japan
and in Hawaii, even when the interview required an interpreter. The grandchildren, in turn, were surprised to learn about the Japanese origins of features long taken for granted in their own homes.

These immigrants, their children and grandchildren, and the recurrence of minka features in their dwellings in Hawaii are a part of the fabric of American culture and are the subject of this study. The investigation envisions two tasks: (1) to formulate a theory on the retention of house features; (2) to relate that theory to empirical data about minka features that Japanese Americans in Hawaii have retained in their housing over the years; those that they have discontinued; and those that they would include were they to build a new house today. The first task will be accomplished after a review of the literature. The framework for accomplishing the second task will be four hypotheses derived from the theory formulated.

The reasons for undertaking this research were twofold: an interest in what one could learn about his culture as he compares it with that of others; and the expectation that knowledge would be obtained that could be applied to the problems of life in a society of diverse ethnic groups. An exposition of the circumstances in which these reasons became pertinent will present them in more concrete terms.

This report on the traditional house of three
generations of Japanese in Hawaii had its genesis in an illuminating contrast of cultures in the Japan of 1948. I had to be shown how to open a Japanese gate latch; a Japanese visitor to our American style house in Japan had to be shown how to use our American doorknob.

Minor as the incident was, it taught me what can be learned and the maturity that can be attained by anyone willing to examine his own culture and its foundations, to respect the rationale underlying the heritage of others, and to adopt new cultural patterns he judges to be improvements on his own.

My study endeavors to enhance that maturity with its analysis of an ethnic group's cultural continuity and adaptation. Insights should be gained about the psychology of immigration and life in a new cultural setting.

There are additional reasons for performing this research, reasons more pragmatic in nature.

To develop a technique for determining ethnic housing preferences that gives weight to a group's culture and its housing history in Hawaii would be of service to those officials and professionals concerned with residential planning. A demonstration of sensitivity on their part to ethnic preferences might alleviate some of the frustrations so apparent in the housing problems of the state. Variations and modifications in house design should suggest themselves, thus increasing choice at a time when
individuality has limited alternatives. And, should the
study define a desired trend in housing that would flourish
if urban planning regulations permitted, actions needed to
encourage that trend would be apparent to land utilization
and housing development officials.

The theoretical base for this study is the concept of
persisting cultural patterns in human society. Research in
this field has exhibited considerable diversity. Investigations have been conducted throughout the world involving societies ranging from the prehistoric to the modern, from the primitive to the advanced. The process under scrutiny has been the interaction of the opposing forces of cultural continuity and of innovation.

These forces have been set in motion by the immigration
of an ethnic group; the peaceful social intercourse within
and between societies; the diffusion of technology;
economic exchange; and the imposition of customs on a
society by a military victor.

The independent variables have been new social
concepts, new forms of material culture, or both, competing
with established concepts and forms of material culture. The dependent variable in this interaction of continuity and innovation has been the established cultural pattern. Logically, the effect would be retention of the old, modification of the old, or unqualified acceptance of
the new. However, anthropologist E. Adamson Hoebel (Anthropology: The Study of Man) thinks that in interaction between the old and the new realistically there are two alternatives: retention of the old or qualified acceptance of the new, for the new is modified in terms of the meaning it has for the receiving people.¹

Prior to 1960 the literature on cultural continuity patterns was preoccupied with social concepts at the expense of artifacts. Consequently, the body of information on material culture and continuity accumulated during a literature search contains only two explicit interpretations why house features persist. Both are quite fragmentary and directed to the Japanese house.

Relevant work has been done on related subjects such as the psychological mechanism of internalization; the house form as a reflection of culture; the geographical diffusion of the house; space concepts in ethnic housing; the direction house size and configuration might take because of expanding populations and increasing costs; the potential of the house to serve man in his ecological environment; and the federal government's interest in the utility, aesthetic, and structural aspects of houses yet to be built. Authors who have elaborated on these subjects will be reviewed for elements usable in a statement of theory, following an examination of the two authors who
have stated explicitly why Japanese house features persist.

In his book, *Hawaii Pono: A Social History*, Lawrence H. Fuchs associates ethnic pride with the Japanese immigrants' persistence in traditional housing features after arrival in Hawaii. In the light of Fuchs' comments about Buddhist and Shinto emphasis on ancestor worship and filial piety, religion would appear to be the ultimate cause for this persistence. He states that this emphasis accounts for the four dominant characteristics of the Japanese in Hawaii. These are ethnic pride in things Japanese; a sense of obligation to family, village, and country; apprehension at failing in the obligations others expect of them; and concern with preventing disgrace to one's family.

In material culture, Fuchs sees ethnic pride expressed in the erection of Buddhist temples and Shinto shrines, and in the inclusion in their plantation homes of as many Japanese features as circumstances permit. However, he cites only the hot bath and the family shrine and altar as examples.

Fuchs' comments on the house apply to the immigrants' early years in Hawaii. In the main, the Japanese who later left the plantation could not afford to build the traditional house; they needed their capital to build and stock their stores and develop their businesses. As reported later in this study those who remained on the plantations
had low incomes and were prohibited by plantation rules from making major changes to their houses.

Hypothesis 2 in this study examines the role of the Buddhist temple in preserving the minka during the period when the immigrants were incapable of reproducing its external features.

H. Byron Earhart in *Japanese Religion: Unity and Diversity* draws a direct relationship between religion and traditional house features in Japan. He discusses the crucial function of the family system as a major theme in Japanese religious history. Family unity and continuity are essential for carrying out the important rituals honoring dead ancestors. The family is also important in providing cohesion for religious activities, with the home formerly the center of religious devotion. This central role in religion for the family and home is manifested in the provision of miniature Shinto shrines and Buddhist altars in the home.

As interpreted by Earhart, another theme in Japanese religious history is the significance of purification and rituals. "These religious elements . . . have become thoroughly integrated into the Japanese religious scene. In front of every Shinto shrine, water is provided for washing the hands and rinsing the mouth before approaching the shrine. . . . Formerly there were many prohibitions and purifications connected with such matters as death
and menstruation. This emphasis on purity carries over into such contemporary customs as the hot bath and the damp face cloth provided for guests."³

The consequence of Earhart's view is that the continuing strength of religion in Japanese culture means the continuance of shrines, altars, and hot baths in the Japanese house. But, as Louise H. Hunter points out in her book, Buddhism in Hawaii, the children of the Japanese immigrants have been rejecting Buddhism. Some have lost interest in religion altogether. Many in their struggle to be accepted and to get ahead in the American community have found it advantageous to embrace Christianity. Christianity means a more diversified round of social and recreational events, a better chance for white-collar jobs, higher wages, loans, and prestige with influential members of the American community.⁴ Hypothesis 3 will assess the significance of Hunter's comments for this study.

Fuchs and Earhart's views on the persistence of house features are only incidental in their commentaries on the Japanese in Hawaii. Consequently these authors are not to be faulted for limiting their references to three things, the shrine, altar, and furo. However, the fact that they do restrict their interpretations accentuates a question fundamental to this study: are there other needs the minka has satisfied so preeminently that it still retains the favor of the Japanese?
The literature search has revealed no analysis of sufficient scope to be called a theory. Therefore, the answer to this question will be sought in part in the inferences to be drawn from sources addressing only indirectly the theme of continuity in house features.

The authors to be reviewed next represent different professions and academic disciplines; the unifying theme is the inferences on continuity that can be drawn from their published materials.

The first to be considered is Herbert C. Kelman (The Planning of Change) and his approach to the mechanism of internalization, a concept in the discipline of psychology. A common theme in this field is the individual's desire for security and identity. This desire is nourished by the maintenance of customs. A means to the end of maintenance of customs is the mechanism of internalization, defined as the inclusion of behavior in one's value system. Kelman adds that internalization involves the acceptance of behavior because the individual finds it intrinsically satisfying, that is, satisfying in and of itself. Thus, behavior may be continued even though it is outdated, no longer serves its original purpose, or differs from that of the community at large.

As used in this study, internalization will be treated as a force for the retention of house features that continue to be intrinsically satisfying. Harry H. L. Kitano's
(Japanese Americans) observation on the acculturation of the sansei generation in the Los Angeles area is a case in point. After predicting almost complete acculturation of the sansei in the near future, Kitano concedes that parts of the Japanese high culture will remain a firm part of the Japanese American way of life. Two examples, both associated with the traditional house, are the tea ceremony and flower arranging.7

In using the model of internalization, one must recognize its limitation. It is effective in maintaining continuity only if the values associated with the behavior at issue are enduring. In his book, The Nature Of Human Values, Milton Rokeach has demonstrated that values not only change but are relative in strength to all others in a specific situation.8 Thus, even after years of using straw floor mats, a Japanese might replace them with rugs because he has come to value innovation more than tradition.

The concepts of security and identity so recurrent in psychology are not confined to this field, and scholars in other disciplines relate them to continuity in material culture. Architect and cultural geographer Amos Rapoport (House Form and Culture) grants man's psychological need for security, which he asserts is satisfied in part by shelter; and identity, which he says finds expression in space needs in the house. However, as architect and student of cultures, he emphasizes other forces as the formative influences on
the shape and arrangement of the house.

Rapoport establishes that common house features differ, sometimes markedly, from culture to culture, and then seeks to explain why. He admits the modifying effect of physical influences (climate, construction methods, available materials, technology, site) and social influences (economics, defense), but denies that any one of the preceding influences is the determinant. In his opinion the primary forces are socio-cultural. They have their origin in the vision that people have of the ideal life. The environment sought encompasses many socio-cultural forces, including religious beliefs, family and clan structure, social organization, way of gaining a livelihood, and social relations between individuals. Thus, house form is a visible expression of the relative importance attached to these different aspects of life. This position is manifest in the first of Rapoport's four objectives for all housing:

a. It needs to accommodate the social organization and cultural expectations of the people.

b. It should be inexpensive enough so the masses can afford it

c. It should insure the maintenance of health of the occupants

d. It should require a minimum of maintenance

In a brief discussion of constancy and change, Rapoport
admits the use of traditional house forms despite changes in the socio-cultural patterns that existed when the houses were first built. He speculates that this may somehow be related to such relatively unchanging forces as man's biological nature and his interpretation of his environment, but his mental reservations are evident in his statement that the specific forms these forces take are culturally linked and changeable. In short, in Rapoport's view, constancy in socio-cultural patterns results in constancy of house form, and a change in relevant patterns induces a change in house form.\(^9\) In terms of this study, the exceptions Rapoport admits to his interpretation I consider to be cases of internalization wherein the old style is more satisfying than the new to those concerned.

In applying his analysis of man's perception of social and personal space to the house, Edward T. Hall (The Hidden Dimension) concurs with Rapoport that housing must be socially and culturally valid. House features that express spatial concepts, therefore, should be continued.

Hall discusses space needs in the context of multi-ethnic American society wherein the functioning of pluralism assumes tolerance by each group of reasonable housing desires of the others. He agrees with Nathan Glazer and Daniel Patrick Moynihan (Beyond the Melting Pot) that ethnic groups will be on the American scene for years to come.\(^10\) Superficially these groups have similar needs but beneath
the surface are unformulated, unstated differences in the structuring of space and spatial relationships. He uses the American and the Japanese house to illustrate his contention. In the United States people move from room to room or from one part of a room to another for each different activity, such as eating, sleeping, working, or socializing. In Japan it is quite common for the person to remain in one location while the activities change, a feature made possible by the use of sliding panels and portable furnishings.

Hall believes that we ignore these culturally generated space needs at the peril of intensifying the present frustrations in our multi-ethnic society, but concedes that the basic rules for estimating the proper size of the family dwelling are as yet unknown. The solution must include the "hidden dimension" of culture, for there is a close identification between the image that man has of himself and the space that he inhabits.11

Differing in its intent from the wide-ranging cultural approach of Rapoport and the housing reform urged by Hall, Fred Kniffen's field study, described in his article, Folk Housing: Key to Diffusion, has significant similarities that support this study and significant differences that give it sharper definition.

Kniffen has reported that migrants from three Atlantic seaboard source areas replicated their house forms in the
eastern inland states to which they moved. In describing his research approach, he defines the source areas as New England, the Middle Atlantic area, and Lower Chesapeake-Tidewater Virginia. Similarity in houses, barns, outbuildings, and fences in the seaboard and inland areas is his evidence of continuity. The task he has set is to determine the character and areal distribution of similar structures.

The essential difference between Kniffen's work and this study is that his is intended to be descriptive whereas this attempts to be analytical. When Kniffen states that migrants replicate their house form in their new locale because groups adhere to their cultural patterns unless forced to deviate from them, this study would know why groups adhere to their cultural patterns. When Kniffen observes the changes in a series of New England house forms, this study would know the reasons the changes were made.

Despite this difference, judgments made by Kniffen bear on this study. He concludes that folk housing is a diagnostic marker of cultural wholes, and observes that prestige items find expression in housing detail. These views find expression in Chapter II, which defines the minka.

Inspired by Kniffen, Henry Glassie (Pattern in the Material Folk Culture of the Eastern United States) has expanded the documentation on material culture. In the
first of his two books on this subject he gives locations in the eastern United States for a veritable catalogue of items ranging from the house to the pirogue. In emphasizing the house he notes the European ancestry of each type and describes modifications that have occurred over the years. As with Kniffen, his is largely a descriptive report, but there are some instances that are pertinent to this study. Like Kelman in his concept of internalization of behavior, Glassie argues that today's folk builder may adhere to a traditional pattern without reflection, but he is more likely to continue in the established pattern because he feels that it is the best, most lasting, most moral way to build.

Paralleling Rapoport is Glassie's pronouncement that form is of utmost importance in an object because it is the most persistent, the least changing characteristic. Among cultural objects, the building has endured best because of its natural tenacity of fabric, the immobility and complexity of its examples, and the practical conservatism of its builders and users. The importance of economics as an influencing factor on material culture is admitted, for "material culture is largely the accumulation of traditional solutions to practical problems".¹³

In his most recent book on material culture, _Folk Housing in Middle Virginia_, Glassie concentrates on the house and explores two ideas. "Competence" is the ability
to design in architecture, to create the structural rules and conceive the basic geometric shapes on which a house is intellectually grounded. "Context" is the ability to relate the house to things external to it. Context is synonymous with the physical, social and psychological parameters within which the designer must operate. House design is the result of such influences as climate, terrain, the social and physical functions the owner has in mind, the competence of the designer, the traditional concept of the desired geometric figure, and the idealized house.

Competence in the abstract is the set of rules used unconsciously or wittingly by the folk designer in generating a building. Competence in the concrete is exemplified by Glassie's set of structural rules that permit description, categorization, and analysis of the folk houses he studied in two counties in Middle Virginia. Glassie formulated the rules after his intensive study revealed that the square was the basic geometric shape, although varying markedly in size among the houses. All other dimensions of the house were determined by adding or subtracting measuring units, usually yards, to or from the width of the square.

To place his house form in context is so enormously complex, Glassie says, that the folk designer stayed with a traditional form that incorporated the results of years of experimentation. His procedure was to keep on
replicating a form until a change in the total environment made the form seemed wrong. Then he attacked the problem.

Glassie expresses Hall's view on man's need for sufficient space arranged in agreement with his cultural traditions, and shares Rapoport's thesis that the representation of an ideal is primary in the shaping of housing features. He tacitly acknowledges the concept of internalization of material culture in noting the presence of the mantel in houses in which the fireplace had given way to stoves. In observing that the poor man built a partial representation of the wealthier man's house, Glassie is concurring with his mentor, Kniffen, in his reporting that the desire for status influences housing. 14

To Kniffen and Glassie, constancy in man's habitat is a useful, verifiable social phenomenon that can enlarge our understanding of man's role in his various historical settings. Indeed, constancy can be a more objective index than the individually penned document or the subjective interpretation of many such documents. To international architect and city planner Constantinos A. Doxiadis (Architecture in Transition), this constancy is a problem, rooted in an inertia that inhibits solution of mass housing needs in the West.

Doxiadis is sensitive to the accelerating rate of change in technology, economics, population growth, and social and cultural trends, particularly as this rate
intensifies the problem of mass housing. Hence his distress in perceiving the traditional Western home as an obstacle to solving the problem. People tend to consider what exists in housing as the best guide to what should exist, even though the traditional approach provides no solution. In choosing the traditional house, the average man verifies Winston Churchill's aphorism: "We shape our buildings; thereafter they shape us".

Doxiadis' perception of the house is germane to this study in that it is his answer to a phenomenon under investigation: are some traditions resistant to the pressures for change so evident in contemporary society? Although he does not theorize on the reasons for constancy, he relates his concern over man's inertia to the elements in a comprehensive program he urges architects to espouse.

Many provisions of the program are outside the scope of this study; they will not be reported. However, three principles merit listing because their counterparts are in the design criteria for the minka, a house that has demonstrated its longevity:

a. A house should meet changing needs for space.

Doxiadis proposes expandable-contractible houses, attuned to the increasing then decreasing size of the family.

b. A house should be prefabricated.

Doxiadis sees the utility and economy of standardized
components purchased at the factory.

c. A house should be built by a cooperative effort.

Doxiadis proposes that a house should be built by a cooperative effort in which an agency or the government would erect the frame and the family would complete the construction.  

Chapter II will relate the use of these principles in traditional housing in Japan.

The current emphasis on man's physical environment has stimulated interest in research on the house within the conceptual framework of its contribution to man's psychological adjustment. In Foundations of Home Economics Research, Norma Compton and Olive Hall, specialists in environmental research, reason that if man's psychological needs are to be satisfied his house must have features that allow for organization of space for privacy and social interaction; for utility in meeting his physical needs; and for aesthetics in design. Their judgment that research is required to identify the nature, form, and optimum dimensions of specific house features for these ends is shared by Hall, as noted previously in this paper.

Compton and Hall do not declare specifically that features contributing to man's needs for space, utility, and aesthetics will persist. By inference, however, features will continue to be used as long as they are a
satisfactory solution to these needs.

The report, *Building the American City*, by the National Commission on Urban Problems sets goals for housing that are similar to those of Compton and Hall. The Commission seeks to orient housing within the larger task of improving the quality of the American City. It submits no specific proposals on the number, nature, or type of housing features. However, the Commission holds that such features should be determined by empirical research, with utility, soundness of construction, and aesthetics the goals of design. In expressing interest in these attributes, the Commission recognizes them to be as valid a part of American culture as material objects that embody them. The Commission in recommending research is, in effect, searching for house features that will give enduring form to the goals of design.

The foregoing survey of the literature furnishes useful, although certainly incomplete, information with which to interpret this study of material culture. But no author has advanced a theory comprehensive enough to include all of the following: reasons for persistence of dwelling features; the relative strengths among these reasons; and the operation of change as it modifies features or substitutes new ones. Therefore I offer a theory. The selection of elements for inclusion was guided by my interest in the Japanese experience in Hawaii. The statement
of theory will make apparent my debt to various authors for their identification of reasons why material culture persists.

A THEORY ON CONTINUITY AND DWELLING FEATURES

Dwelling features that have endured reflect deeply-rooted cultural concepts that have evolved in a society. Thus, features may be associated with concepts of religion, space, aesthetics, utility, and social stratification.

Dwelling features, although relatively stable, respond to a complex process of change. Events arise that are perceived as concerns of the society, such as poverty and discrimination. Individuals may react by making temporary changes in their dwellings. Concerns that are intense and protracted may lead to changes in concepts. Changes in concepts will be reflected in permanent changes in dwellings.

The following hypotheses have been derived from the theory and will serve as the framework for the investigation:

Hypothesis 1. The first Japanese immigrants to Hawaii, accustomed to a house that they considered superior to the one supplied by the plantation, would tend to build one resembling the minka.

The Japanese migration to Hawaii began in 1868 and despite an interruption until 1885, brought approximately
60,000 immigrants by 1900. Almost all came to work on sugar plantations, where families were offered space in the long house, a dormitory with an external kitchen, water supply, and toilets. Furthermore, the long house, intended for bachelors, lacked internal partitions. Having known the advantages of the minka in Japan, immigrants with families presumably would replicate it in Hawaii within the limits of available time and financial and technical resources.

Hypothesis 2. Sharing architectural features with the minka, the temple would tend to sustain interest in the traditional house during a period when immigrants did not include its external features in their dwellings.

Between 1900 and 1920 the plantations introduced a variety of houses more suitable for family life than the long house. However, these houses were in Western style and Japanese immigrants on the plantations could not afford the cost of materials to convert the exterior house features to those of the minka. Moreover, plantation rules prohibited major changes in the house.

The Japanese who had left the plantation in the main used their capital to develop their small business ventures, rather than to replicate their traditional house. The Japanese immigrants thus entered a period when they incorporated few of the traditional external housing features in their dwellings. About this time Buddhist
temples appeared on plantations and in urban locations. Because of shared features with the minka, the temple was a continuing, visible reminder of the traditional Japanese house.

Hypothesis 3. Despite repressive measures directed against them as an ethnic group, from 1920 through 1945, the Japanese in Hawaii would tend to retain house features representing their traditional concepts of religion, aesthetics, and spatial organization of the home.

From the time of their arrival in Hawaii, the Japanese were subjected to racial discrimination. The critical period, 1920 through the World War II years, opened with attempts to destroy their ethnic institutions and closed with internment. Hypothesis 3 predicts that even such intense pressure would not cause persons of Japanese ancestry to abandon house features associated with their fundamental cultural concepts.

Hypothesis 4. The Japanese immigrants and their progeny, despite prolonged exposure to the Western house in Hawaii, would tend to desire traditional features in their houses.

Three generations of persons of Japanese ancestry have lived in Hawaii for almost one century. They have had years to compare their traditional house with the Western style.

This hypothesis examines whether or not traditions in house features are strong today and will continue to be
among each of the three generations. In so doing, it also
tests the "third generation" thesis that the second
generation rejects its immigrant parents' culture while
the third generation returns to it.

The three successive phases in my experience with
Japanese housing are presented in Chapters II, III and IV.

With my residence in Japan came awareness of a
distinctive house of the common man and an accompanying
interest in studying it. The initial problem was to
identify and define this particular house. The information
in Chapter II is submitted as a definition of the minka and
its evolution in Japan. The measures taken to insure the
accuracy of this definition and history are outlined in
the Appendix.

As stated in the preface to this paper, my first
exposure to Hawaii and subsequent residence suggested that
numerous features of the minka had been incorporated into
single family dwellings in the state. Evidence obtained
in the investigation of this impression is contained in
Chapter III. The steps taken to accumulate this evidence
are detailed in the Appendix.

The photographs in Chapter III illustrate the current
minka influence in Hawaii. Perhaps Hawaii had witnessed
this influence continuously since the arrival of the
Japanese immigrants. To pursue this possibility, Japanese
immigrants and their progeny were interviewed in their capacity as home owners from 1882 to the present. The role they played as bearers of culture is evident in the data in Chapter IV. The preparation for and the conduct of the interviews are described in the Appendix.
CHAPTER II

The Minka in Japan

Wood, thatch, clay, paper, and rock. From such austerity of materials was the minka born in ancient times. It came of age at the outset of the feudal period in 1185; reached maturity as the Meiji regime began its rule in 1868; lost ground to Western style housing after 1945. Dwelling of farmers, small landowners, merchants, low ranking military and public officials, it has been called the common man's house.\(^1\) It evolved during the feudal years through the cooperative efforts of master carpenters, craftsmen, and home owners. Its development paralleled the rise to affluence of one person among the commoners, the merchant, who schemed to install on a small scale in his house those features reserved for the aristocracy in a most ordered of hierarchical societies.

There are reasons why this house design flourished for eight centuries and why its features are still popular in twentieth century Japan. Generations of occupants refined its design to respond to poor people's demands, and converted austerity from a burden to an aesthetic. The beauty and harmony that emanated from simplicity of design and the use of materials in their natural state had helped to compensate for cold rooms in winter.\(^2\)

To trace the path of the minka in history, however,
is not to define it. Accordingly, an initial summary of design criteria and their embodiment in specific house features will be used as the shortest route to an immediate comprehension of this complex house. The detailed description of house features that follows is a necessary prelude to the story of the minka in the cultural setting of Hawaii.

The minka is the material expression of a poor people in a stratified society who found comfort in a pantheistic religion and an acquired appreciation of nature. Utility, aesthetics, religion and social status are evident in the design criteria for this dwelling. These criteria follow, together with a synopsis of their associated house features:

a. The minka must be economical to build.

A house built of inexpensive, locally available materials used in their untreated state minimizes major construction costs. When members of the community supply the labor in cooperative house-building ventures the other major cost factor has been greatly reduced. The availability of standardized prefabricated components at the lumber yard speeds the erection of a house whose plan is sufficiently simple that a carpenter can guide the efforts of the volunteer workers. The plan is simple because it keys floor, wall, partition, and ceiling space to a modular building unit, in this case a six feet by three feet rectangle, the amount of space needed to accommodate one
Japanese when sleeping or two when sitting on one straw floor mat. (See the description of the tatami floor mat for its role as plane module.)

b. The minka must be functional.

Most features of the minka meet basic physical needs in a practical way for a country with limited natural resources and modest family incomes.

The post and beam construction is resistant to earthquakes because of its flexibility. The number and arrangement of floor modules determines the location of weight-bearing, primary posts. Because the secondary posts do not support the roof but only serve as endposts for the sliding panels, they can be removed or rearranged to meet the changing needs of succeeding generations.

Plagued by heavy rains and typhoon winds, the Japanese find overhanging eaves, ridge covers, and the roofed fence essential protection against rain and wind.

Natural light enters the house through sliding translucent panels (shōji), apertures in opaque panels (fusuma), and lattices. Maximum airiness to dispel the summer heat is made possible by the vent in the roof, opened panels (fusuma and shōji), lattice windows in the clay wall, and horizontal panels (ramma) above the lintel.

Storage for bedding and pillows is provided in cupboards recessed between the interior partitions (fusuma); and for footwear, on the shelves (getabako) at the entrance
to the house. Straw mats (tatami and goza) which serve as floor covering are inexpensive and replaceable by units as any one mat wears out; they are durable because the occupants remove outdoor footwear before entering the house, and comfortable because of their resiliency.

Sitting and sleeping are managed with portable floor cushions (zabuton) and quilts (futon) respectively, which are easily stored when not in use. The portable charcoal burner (hibachi) provides warmth in winter but heats only the air space immediately around it. Only a few are used in the interest of economy. And, should the roof leak a few drops, the corners of the room be cold, or the straw mats harbor an insect or two, there is always the solace and relaxation of the hot bath (furo).

c. The minka must allow for flexible use of space.

A series of small rooms; a combination of small and large rooms; a few large rooms; or one room using all floor space intended for family and social events: these are the alternatives available to the home owner by the simple manipulation or removal of interior panels (fusuma). A floor space into which are introduced floor cushions (zabuton) and dining trays immediately becomes the dining room. With removal of dining trays and the unfolding of quilts (futon) on the floor, the floor space becomes a bedroom. Pushing aside the exterior panels (shōji) expands the floor space into the verandah, where indoors gradates
30

into outdoors.

d. The *minka* must provide for the aesthetic experience.

The classical aesthetic center in the *minka* is its art alcove (*tokonoma*) where flower arrangements and art objects are displayed. In addition, for a people with an appreciation of nature, simplicity, and gracefully executed objects in every day life, there would be other house features that contribute to the aesthetic experience. The sensitive carving and the fine wood that characterize the horizontal panel (*ramma*) above the lintel; the paintings on the interior panels (*fusuma*); and the storage alcove for art objects (*chigai-dana*) supplement the *tokonoma* as objects of beauty within the house. The decorative garden and the view of nature framed by the verandah carry the contemplation of beauty outside the house, as does the window scene for the user of the hot bath (*furo*) when foresight governed the siting of this facility.

e. The *minka* must provide for the religious experience.

The miniature Shinto shrine (*kami-dana*) and the Buddhist altar (*butsu-dan*), both of which are usually present in the house, symbolize the influence of religion in Japanese family life. The aesthetic center (*tokonoma*) has its religious connotations because of its origins in the houses of the Zen monastery where worship occurred beneath a hanging sacred scroll. Completing the picture
is the hot bath (furo) which has its origin in the religious purification ritual. Although the number of features designed for utilitarian purposes far outnumbers those for religious reasons, Heinrich Engel (The Japanese House) interprets the dwelling as a preeminent expression of philosophical concepts.  

f. The minka must make plain the social status of its owner.

Developing over an eight century span, the minka, in its variations, came to mirror the social distinctions that developed among the common people of Japan. Such things as size of house, size of roof, length of ridgepole, type of ridge cover, number of ridgepole ornaments, decorative pendants at the apex of the gable, intricately carved wood panels (ramma) above the lintel, and the reception area for honored guests (genkan)--all these told at a glance whether the occupant was a government official in a town or village, whether he was a landowner or a tenant farmer, and more or less where he stood in the urban or rural social scale. Although the crumbling of the feudal system caused many such social symbols to lose some significance after 1868, they remain as partial indicators of social status.  

The foregoing inventory of components does not reveal their lineage or the simple facts of their construction. Such information is essential if one is to gain insights into those features most likely to persist and those most
likely to be discontinued by the Japanese in the cultural environment of Hawaii.

It is now time to observe that we must take into account at least 23 distinct parts of the minka; to list and identify them; and to show how they contribute to the whole.

It will be noted, however, that two features, the kitchen and the toilet, have been excluded. Within the limits of family income, these features have been particularly responsive to the sweep of technology. Both features are related to such comprehensive topics as nutrition, the availability of foods, patterns in eating, and the disposal of wastes. Each of these topics is suitable for separate study as a technical and sociological subject. Because of the resulting difficulty in giving the kitchen and toilet adequate coverage within the scope of this study, I decided to exclude them.

The following discussion of the dwelling features selected for study presents them in the general sequence of those that are interior to the house, then those that are exterior.

a. Shōji. (Figure 1)

Shōji are six feet by three feet sliding and removable wooden panels. The framework, a series of small rectangular interspaces, is formed by thin strips of wood notched into
Figure 1. SHŌJI. Shōji in a Japanese room with bed quilts (futon) placed on straw floor mats (tatami) for the night. Shōji are sliding, removable, rectangular wood panels. They contain a number of smaller rectangular interspaces and have a translucent paper backing glued to one side. Inn, Kyoto, Japan, 1972.
each other. The size of the interspaces is the same for all panels in a room; they may vary from one room to another. Occasionally window glass is inserted within the shōji at a height of two to three feet above the floor to enable seated persons to see outdoors.

Today shōji frequently have plastic or glass panels of various sizes inserted either horizontally or vertically within the top, middle or bottom sections. The part nearest to the floor, to a height of one foot, often consists of a solid wooden panel as protection against careless feet.

As panels, shōji slide in grooves as units independent of others like themselves. The lower grooves in floor sills (Figure 2) are shallow to reduce friction. The upper grooves are deep in the lintel so that the panel is removed easily by raising it slightly. When the shōji are in the closed position, the vertical lines of the panels are normally aligned with the horizontal lines of the floor mats.

The uses of these sliding panels vary. When employed as exterior walls, sliding them to one side opens an entire side of the house to sunlight and fresh breezes. As a wall they afford privacy yet permit the room to be flooded with a soft diffused light while they reflect the shadows of outdoor objects. Opened part way, they furnish a view of the sky and landscape that can be controlled by the observer.
Figure 2. GROOVES. Grooves within which shōji slide. Minka in Toyonaka Village, Osaka, Japan, 1972.
When used as a common wall between the main room and the
verandah, they open to a view of the garden. When serving
as an exterior wall they are protected against inclement
weather by solid wooden outer panels.

Shōji are also employed in the interior of the minka. They can, for example, be slid behind a circular window or supply ventilation above this window on the right hand partition of the tokonoma; they can screen another room beyond when installed within the chigai-dana storage alcove; and they can act as a partition for an inner room in need of light or screen the entranceway from the remainder of the house.

In the early minka it was customary to assign one section of shōji with a small sliding panel enclosed within it for the family cat to enter or leave the house. This developed into the "snow-viewing shōji", which had a glass panel at the bottom and vertically sliding shōji sections behind it. These could be raised to give a view of the outside without opening the entire shōji. 7

The Japanese do not think of shōji as a divider between the interior of the house and the natural setting outside. Rather, when open they are the means for the union of interior and exterior, eliminating any permanent physical or psychological boundary between indoor and outdoor. The same exterior scene may be enjoyed in different ways, according to whether the shōji are wide open, or partly closed.
Inasmuch as they permit free and intimate contact with the outdoors they have their aesthetic value and have an essential role in creating the atmosphere in a room.

Edwin O. Reischauer (Japan) describes changes in the character of Japanese feudalism that affected the technology of shōji. Increased trade with the Asiatic mainland, probably reinforced by the disappearance of numerous small estates with their trade restrictions and fees, led to a rapid expansion of the economy during the latter part of the Ashikaga clan's rule (1338-1573). Under these circumstances greater specialization in production developed, and centers of paper-making, metal-working, weaving, and the like arose all over the country. During the early years of the Tokugawa regime (1603-1867), in the cities and towns of Japan a vigorously expanding merchant element created a commercial economy far beyond anything to be expected in a politically feudal land. A fully developed money economy spread throughout Japan.  

In commenting on this era, Teiji Itoh (The Essential Japanese House) further states that lumber, shōji, and fusuma (interior house panels) were standardized in dimension and sold to the public as ready-made products. Later it became common practice to prefabricate the structural members of a wooden house in the carpenter's compound. 

With respect to shōji in particular and the house in
general, Engel emphasizes that paper occupies a place in the Japanese house that is distinct because it functions as an indispensable fabric. In no other architecture in the world did paper emerge from a secondary role as decoration.  

b. **Fusuma** (Figure 3)

Fusuma are sliding, removable, wood frame panels, rectangular in shape and covered on both sides with opaque paper. All wooden strips of the skeleton framework cross and are notched into each other. The center horizontal and center vertical strips are wider than the others to strengthen the **fusuma**. The thick, opaque paper is made of fibers from a variety of sources such as the mulberry and pine trees, thyme shrubs, rag pulp of cotton and linen, and rice straw pulp, sea weed and bamboo shoots.  

The dimensions of the individual panel are standardized and conform to the horizontal and vertical modular order of the house. 

When light is required in an interior room, **shōji** panes may be inserted in the middle third of the **fusuma** panels. This insert is removable so that the **fusuma** can be repapered when desired. In summer time a close grating of reeds may be substituted for the opaque paper, permitting access for the flow of air and some light. The reeds resemble miniature bamboo, each reed being the size of an ordinary wheat straw and having a warm brown tint. This material is employed in many ways in the decoration of interiors.
TATAMI. Tatami are tightly packed, resilient rice straw floor mats, approximately six feet by three feet by two inches in size. Ueda home, Kyoto, Japan, 1972.

Figure 3. FUSUMA. Fusuma are sliding, removable, interior, wooden panels, rectangular in shape and covered on both sides with opaque paper. The one on the left has been decorated with a scene painted on the lower third of the panel.

TATAMI. Tatami are tightly packed, resilient rice straw floor mats, approximately six feet by three feet by two inches in size. Ueda home, Kyoto, Japan, 1972.
For convenience in sliding a panel, a small oval or circular metal plate is sunk into a recessed area of the panel in about the same position as a doorknob in a Western house. It is called a hikite. Fusuma, like shōji, are easily removed from the wooden grooves in which they slide.

The purpose of fusuma is to provide control over spatial arrangements in the interior of the house. The fusuma panels divide floor space into two or more rooms. The panels may be pushed aside to enable summer breezes to sweep through the house, to expose closets or the Buddhist shrine for private family use, or to furnish a large area for festive events and religious rites. Or they may be removed as a prelude to substituting seasonal panels.

Following the introduction of a currency economy, fusuma, like shōji, underwent mass production. This enabled the purchaser to move parts of his house by disassembly and reassembly. In the early sixteenth century a room was customarily rented without straw floor mats or fusuma since the tenant would bring his own standardized ones with him. 13

The Japanese first made portable screens which were used for spatial arrangements and for decoration; they were in imitation of those seen in China. 14 The fusuma were successors to portable screens in the Japanese home. Initially, the use of fusuma was controlled as a status symbol, which contributed to their ornateness. Gold, lacquer, and colorful and gorgeous painted scenes and
geometric patterns were common in the houses of the wealthy. In some dwellings adjoining fusuma stretched their panorama across the entire side of a room.

In the commoner's house fusuma were often undecorated and the material varied in texture. Often the paper was perfectly plain and if an artist friend came to the house he might be asked to leave some little sketch upon the panels as a memento of his visit. Itoh reports great changes in the minka in the Genroku Period (1688-1703) but differentiates between townsmen and farmers, the latter being last to adopt fusuma and decorative fusuma paper.

c. Ramma (Figure 4)

Placed atop the lintel, about six feet above the floor, the ramma is a narrow, horizontal grill of wood, bamboo or knotted vines that permits air and light to enter the room. A secondary purpose also evolved. Edward S. Morse (Japanese Homes and Their Surroundings) observes that the ramma became second only to the chigai-dana in decorative importance in the house during the Meiji Period.

A ramma is about two feet high and its two or more panels can total 24 feet in length. The complex carved designs exhibit geometric patterns, animals, flowers, birds, and fantastic beings such as dragons. Hideto Kishida (Japanese Architecture) states that the decorative achievement of the ramma reached its peak of development in the Momoyama Period (1573-1600).
Figure 4. RAMMA. Ramma may be a carved wooden panel or it may consist of open bamboo or knotted vine grillwork. Placed above the lintel it permits air circulation and light in a room. This one is prefabricated. Lumberyard, Yokoto, Japan, 1973.
d. Tokonoma (Figure 5)

The aesthetic center of the dwelling, the tokonoma, is the alcove where art objects are displayed. The display is usually limited to one scroll and one art object, such as a flower arrangement in a simple vase, thus increasing the aesthetic effect through limitation of motif. The tokonoma is not merely a form of what we might call decor but is basic to the Japanese residence. It is possibly the most conspicuous statement of the spiritual-aesthetic intention in house-building and dwelling, which is unique to Japan.

Spatial organization and construction detail are employed to set the tokonoma apart from the rest of the house. The floor space assigned to the tokonoma is usually six feet in length and three feet in depth, and its ceiling is made of different material from that of the rest of the room. The crossbeam is higher than the lintels of the panels that form the room, and the tokonoma floor is raised and may be of different material from that in the floor of the room. The rear wall of the tokonoma has a hook for the display of a hanging scroll. The clay wall common to the tokonoma and chigai-dana can have an opening to illuminate the latter, and has a specially chosen wooden column, the toko-bashira, at its leading edge.

Historically, Zen Buddhism has influenced both the meaning and the form of the tokonoma. Its ancestor, in fact, originated in the Zen monasteries: on one wall a
Figure 5. TOKONOVA. The tokonoma, aesthetic center of the house, is an alcove where art objects are displayed. This one contains a wall hanging (kakemono), lantern (andon), and a small table with an art object on it. The author is dressed in one of the hostess' kimonos. Private residence, Kyoto, 1972.
sacred Buddhist picture scroll hung, with flowers and an incense burner placed on a shelf underneath. The Zen Buddhist monks gathered in front of this wall for meditation and in a profound ritual drank tea from one bowl. Both ritual and picture wall had been introduced by monks returning from Chinese monasteries in the thirteenth century. At this time the name tokonoma had not yet been adopted. 21

The name tokonoma, literally "space for platform", came from the main hall of the feudal warrior's residence, where a portion of the main room was elevated one step in front of a shallow display alcove and a companion shelving alcove on the long wall. The seat in front of the display recess was reserved for the honored guest. The system of construction, its modular order, and its physical appearance indicate that the warrior's residence was intended to be interpreted as if it were modeled after the Buddhist priest's dwelling. 22

Although the role of the tokonoma as the place of art and meditation was derived from the Zen Buddhist hall, and although the tokonoma obtained its additional meaning of official place for the honored guest through the Buddhist-modeled warrior residence, it was later in the tea house that the potential of the display recess was fully explored. Here the various types of tokonoma developed. Nevertheless the tea cult, tea master, and tea house were a part of
Zen Buddhism, so that the final state in the evolution of the tokonoma was also influenced by factors intimately related to this philosophy.\textsuperscript{23}

Despite the attempt of feudal period clans to limit the use of the tokonoma to their own social level, this limitation was not enforced in the Kinki district (Kyoto, Osaka, Nara). Generally the tokonoma was a feature of the houses of those entitled by birth to have it or, in some cases, of the houses of rich commoners who purchased the right to construct it from the clans in whose areas they lived. But it seems that many minka dwellers before the late seventeenth century adopted the tokonoma since it was about that time that clan rulers saw fit to try to impose sumptuary edicts against the practice. Moreover, books and records in the Kinki district as early as the Muromachi Period (1338-1573) reveal that the tokonoma and its usual companion piece, the chigai-dana, were to be found in minka houses, even if in less grand and decorated form than in the mansions and palaces of the great.\textsuperscript{24} Engel concurs, saying that it was mainly from this time on that the display recess was often used in the houses of the common people.\textsuperscript{25}

The Japanese writers Kiroko and Tatsuo Ishimoto (The Japanese House: Its Interior and Exterior) tell us that on occasion more than two art objects are displayed in the tokonoma, and that the display is changed seasonally, sometimes more often.\textsuperscript{26} Itoh stresses the innovative
individuality in arrangement that developed in certain tokonoma under the tea masters. In contrast, any deviation from the prescribed pattern for the tokonoma in the warrior's residence was a violation of propriety. Morse makes the point that in some households the length of the tokonoma commanded the entire side of a room. Moreover, the original simplicity of the toko-bashira, the principal wooden column of the tokonoma, gave way to choice wood from which the bark had been stripped, and the grain, knots, and burls preserved and polished.

e. Chigai-dana (Figure 6)

The chigai-dana is a companion alcove to the tokonoma. The cantilevered shelving at its rear wall is used as a storage place for writing utensils or art objects not at the time on display in the tokonoma. Its location and its association with the adjoining tokonoma give the chigai-dana an additional role as a decorative element in the house. When cupboards with sliding panels are used, they are placed at the top or at the floor level of the chigai-dana, or both, but extend to only a part of the depth of the alcove to preserve the effect of a recess. More than one hundred variations of the chigai-dana have emerged and their plans are available on woodblock prints to the carpenters of the country.

Itoh (The Elegant Japanese House) points out that in the Momoyama Period (1573-1600), and into the Edo Period
Figure 6. CHIGAI-DANA. The chigai-dana is a companion alcove to the tokonoma. It consists of shelving and cupboards for the storage of writing utensils and art objects when not on display in the tokonoma. Private residence, Kyoto, Japan, 1972.
(1603-1867) the chigai-dana was an acknowledged status symbol in Japanese dwellings, and that its use was strictly controlled. Morse states that a ceremonial hat might be placed on one of the shelves and a lacquer box on top of the cupboard. The box contained an ink stone, brushes, and paper and was usually very rich in its gold lacquer and design. In the houses of nobles the top of this cupboard also held a wooden tablet which in former times was carried by nobles when in the presence of the emperor. This tablet was at one time used in the writing of memoranda but eventually was carried only as a form of court etiquette.

The second most prestigious guest has his seat in front of the chigai-dana, preceded by the honored guest seated in front of the tokonoma.

The chigai-dana may be positioned adjacent to the tokonoma, may be merged with the tokonoma, or may not even be included in the house. In the usual instance, it lies in a straight line with and is adjacent to the tokonoma, but its ceiling and floor are lower. The floor space is usually the same area, six feet by three feet, as the straw floor mat which is used as a grid of 36 units to determine sizes for the shelves in the chigai-dana. Thus by design there is harmony among the components of the chigai-dana, and harmony among the chigai-dana, the tokonoma, and the straw floor mats in the remainder of the room.
f. Futon (Figure 7)

The Japanese have retained the bed in one of its simplest expressions. The bed is made directly upon the straw floor mats, the bedding consisting of one or more thick quilts, or futon, upon which the person reclines, with one or more additional futon serving as covers. They are economical in comparison with Western bedsteads, and the desirability of placing futon at any location most convenient at the time is obvious. Futon promote the multiple use of floor space, for they are easily put back into their storage closet in the morning when the room again assumes one of its many different roles. Offsetting the space saved by eliminating the Western style bed is the floor space devoted to closets, which Engel estimates can be as much as 15% of the floor space in a multipurpose room in an average house. 32

Futon have no exact counterpart in Western bedding. Our quilt is a close approximation. Prior to the Temmon Period (1532-1555) the futon of the poor was a simple straw pallet, for cotton wadding had not yet been introduced into Japan. People of means could afford ones of silk. 33 In recent years futon have an exterior cover of cotton, silk, or synthetic fiber. One with a cotton exterior and cotton interior is the least expensive. Today the futon used next to the body of a person are enveloped in a white cotton sheet to protect them from soil. These sheets are washed
Figure 7. FUTON. Futon, counterpart of the Western bed, resemble thick quilts and are sheeted and placed on the straw floor mats (tatami). During the day they are folded and stored in cupboards. Inn, Kyoto, Japan, 1973.
in the same manner as are our Western sheets. A Japanese
spends considerably less time attending to the sheeting and
to making and storing the futon bed than does a Westerner in
the making and changing of his style bed.

An early type of pillow used in conjunction with the
futon consisted of a cloth cylinder filled with buckwheat
hulls or straw and secured to the top of a small rectangular
wood box. Soft white paper tied to the top of the cylinder
served as a pillow case and was changed daily to protect the
cylinder from soil. The pillow was placed under the base of
the head and was high enough so that the coiffures of the
women and samurai warriors would not become disarranged.

The Chinese porcelain pillow was not used extensively
in Japan. Its shape was usually that of a hollow
rectangular block, with the top surface curved to accommo­
date the back of the head. This pillow also had the
function of protecting the coiffure.

g. Kami-dana (Figure 8) and Butsu-dan (Figure 9)

The kami-dana, literally "god shelf", is the household
shrine of the Shinto faith. Its composition includes a
miniature wood model of a Shinto shrine, sometimes resembling
the famed Ise Shrine; one or more masks of the seven
household gods, such as the god of the hearth; a small straw
rope in deference to the sacred straw rope marking a Shinto
shrine; pieces of paper upon which prayers have been written;
small trays or dishes for food offerings to the gods;
Figure 8. KAMI-DANA. The kami-dana is the household shrine of the Shinto faith. It is a miniature model of a Shinto shrine, with food offerings and prayer papers to the gods. Some household shrines are placed in a cupboard with sliding panels; other are placed in the open. Private residence, Otsu, 1976.
Figure 9. BUTSU-DAN. The butsu-dan is the household altar of the Buddhist faith. Its principal component is a miniature representation of Buddha, with which are ancestral tablets, candles, and dishes for daily food and beverage offerings. Private residence, Otsu, 1976.
and candles. Some household shrines do not contain all of these items. The wooden shrine may be placed in a cupboard with sliding wood or shōji panels; on a shelf protruding from a wall; or on a lintel. The other items are grouped around the miniature shrine.

The butsu-dan is the household altar of the Buddhist faith. Its principal component is a miniature statue of the Buddha, with which are tapers, dishes for daily food and beverage offerings to ancestors, incense, and memorial tablets of ancestors. The complete altar is ornate and elaborate. It is kept in a family or guest room in a special cabinet, or it is built into a closet behind sliding panels.

Most Japanese homes have both shrine and altar, although the strict Jodo Shin sect permits only the Buddhist altar.

Earhart contends that the shrine and altar indicate the central religious function of the home and the importance of the family in providing cohesion for religious activity.

Engel states that though the Japanese house may afford only limited protection against the elements, it harbors the ancestors and the gods and thus is a spiritual safeguard which is considered better protection for the inhabitants than a reinforced house structure. In his opinion the Japanese house has substantiated the religion-philosophy of its time and people. If the house is measured by its
response to the physical requirements of man and environment, it is more philosophical than it is practical.\textsuperscript{37}

h. \textit{Zabuton} (Figure 10)

The \textit{zabuton} is a cushion upon which a person rests rather than sits after it is placed upon a floor mat. In traditional usage, the Japanese kneels on the forward edge of the \textit{zabuton} with his legs turned beneath him and his haunches resting upon the calves of his legs and the inner sides of his heels. His toes are turned in so that the upper and outer part of the instep bears directly on the rear edge of the \textit{zabuton}. Lewis Bush (\textit{Japanalia}) states that a \textit{zabuton} is always offered to guests, and that extensive use of this custom developed in the Meiji Period (1868-1912) after cotton became inexpensive. In olden times fur and straw \textit{zabuton} were used.\textsuperscript{38} Use of the \textit{zabuton} obviates the need for chairs, which require more total space in the room and are injurious to the straw floor mats.

The dimensions of the traditional \textit{zabuton} are approximately 20 inches by 20 inches by 2 inches. The wealthy used thick ones, the poor used thin ones stuffed with rush straw. The modern \textit{zabuton} is thicker than the traditional.

\textit{Zabuton} have exterior covers of cotton or silk and are stuffed with cotton or silk fiber. The source of silk frequently is worn kimono fabric.

i. \textit{Tatami} (Figure 3) and \textit{Goza} (Figure 11)

\textit{Tatami} are tightly packed, resilient, rice-straw floor
Figure 10. ZABUTON. The zabuton is a cushion upon which a person rests upon the floor. It is approximately 20" by 20" by 1½" and is usually covered with cotton fabric. Private residence, Otsu, 1976.
Figure 11. GOZA. Goza are six feet by three feet woven straw mats placed directly upon the wooden floor. They are used by families unable to afford tatami. Toyonaka Village, Osaka, Japan, 1972.
mats, each approximately six feet long, three feet wide, and two inches thick. These dimensions vary somewhat from region to region but normally are standardized within a region. The three main constituents are the quilted thick straw underpart, the woven thin reed cover, and the cloth tape binding. This binding of silk, linen or cotton in black, brown, indigo or gray usually borders the long sides of the mat. Originally a portable floor covering to accommodate two men sitting or one sleeping, tatami have changed so that each mat now is of standardized size and remains in a fixed position on the floor, although it can be removed for replacement or for cleaning. Because of their resiliency tatami are comfortable for walking, sitting, and sleeping.

Families too poor to afford tatami use a substitute straw mat called goza to cover wooden floors. These mats lack the thick under layer which the tatami has. They are of woven straw that is coarser than the covering of the tatami. The family with only a limited number of tatami will place them in the guest room as the place of first priority. If both tatami and goza are used, the goza will be used in the least conspicuous places in the house. An added use of goza is in the drying of rice by the sun.

Families unable to afford wooden floors use a floor mat called doza. They differ from goza in that they are placed directly upon earth floors. The name comes from the
Japanese word for earth.

Tatami existed in fairly ancient times and were used in the mansions of the elite in the Kamakura Period (1192-1333). It was not until the fifteenth or sixteenth century, however, that they became a floor covering in the minka. In the early sixteenth century it was customary at festival time to collect mats from a number of houses to cover a platform where town officials, nobles and people of the higher classes of Nara society could sit and enjoy entertainment offered by the temples, such as Noh plays. Another practice in the Nara area was for the renter to supply his own tatami.

The standardization and prefabrication of house components in the sixteenth century led to the use of the tatami as a horizontal measuring system in house design, supplementing the ken system which used as a module the fixed distance from the center of one post to the center of the next. In the tatami system the module is the length and width of the mat. The designer using this system decides upon the number and the arrangement of tatami for each room. This decision determines the location of the posts in the post and beam system.

In the ken system the position of posts determines the number and may even force the use of tatami of different sizes in a room. Furthermore, in the ken system perfect harmony between the horizontal and vertical lines of the
house is obtained only when the dimensions of housing components are based on the tatami, or when the ken and tatami modules are identical.

j. **Furo** (Figure 12)

Originally separated from the main house, the furo, or tub, now usually is a part of the plan of the house proper. The deep, portable, wooden models seen by Morse in 1885 held one person, were circular or oval in shape, and had an arrangement inside, outside, or beneath the tub to heat bath water. This was the model known to the Japanese who came to Hawaii before and shortly after the turn of the 20th century. In more recent years ceramic tile has become popular as the basic construction material, the square or rectangular shape quite common, and the furo itself fixed in a position where hot water can be piped into it. In 1975 a Japanese department store in Honolulu began the sale of portable plastic furo.

A community furo may accommodate more than one person simultaneously, either by virtue of containing a number of household models or by use of tile in a single large structure similar to the Western swim pool. In the latter case local customs determine whether or not men and women bathe together. In either event the bather is nude, a custom centuries old and viewed as perfectly proper.

In Japan nearly every house among the upper and middle classes has ample arrangements for bathing, and even among
Figure 12. FURO. The origins of the furo are in religious purification rituals. The furo may be of tile or wood and vary in size, depending upon the affluence of the family. Inn, Kyoto, 1973.
the poorer classes in the city and country this is a household feature, with the added convenience of nearby community furo. According to Engel the family takes its bath every evening, as a rule before dinner. In the colder season some families reduce the number of baths to every other day, unless the bath is used for warmth. The sequence of bathing is decided by rank in the family, the head of the house first, followed by other males, with women always last. The visitor, however, has precedence and may even have his bath before the customary bathing hour.

Modern Japanese bathing involves an initial thorough soaping, washing and rinsing outside the furo to insure cleanliness, followed by soaking in the 110 degree water inside the furo, and concluded by drying with a damp towel. This procedure led to the use of the same hot water by many bathers, and to bathing as a means of meditation, particularly when it was possible for the bather to view the garden or an outdoor natural scene. The community furo became a social center where acquaintances could meet and converse.

Although authors agree that Japanese bathe frequently, there is variance among their interpretations about the reasons for this custom. In Engel's opinion, because the floor of the house is used for sleeping, sitting, and daily activities, it is only reasonable that the people, for their own good, strive for the utmost of cleanliness. A realistic
attitude is thus evidenced in the custom of bathing. Basil Hall Chamberlain (Japanese Things) credits cleanliness as one of the few original items of Japanese civilization, and grants that ceremonial purifications continue to be part of the Shinto ritual, but contends that the cleanliness of the Japanese has nothing to do with godliness. They are clean for the personal satisfaction of being clean and for the warmth the bath provides in the winter. Earhart notes the significance of purification, rituals and charms that have become thoroughly integrated into the Japanese religious scene. For example, in front of the Shinto shrine is water for washing the hands and rinsing the mouth before approaching the shrine. Formerly there were many prohibitions and purifications connected with such matters as death and menstruation. The insistence on purification, both physical and spiritual, is still basic to Japanese religion. Earhart concludes that this emphasis on purity carries over into such customs as the hot bath and the small damp cloth provided for guests.

k. Genkan (Figure 13)

The genkan, or entry way where a guest removes his outdoor footwear and is greeted, is so significant in the Japanese residence that even small houses provide no less than 10 per cent of the ground floor space for it.

Among the poor there is no distinct entrance room. Instead a part of the living room serves this function.
Figure 13. GENKAN. The genkan is the entryway where a guest removes his outdoor footgear and is greeted by the host. This elaborate genkan contains a brass lamp and portable screen. A less ornate type is found in the home. Inn, Kyoto, 1973.
Families in somewhat better financial circumstances build a genkan. A guest enters by stepping over a low sill onto an earthen or concrete floor. Approximately five feet inside are one or two plank steps which enable the guest to step up two feet onto a small straw matted area at the level of the floor of the house. At the rear of this area is a screen or shōji leading to the remainder of the house. The roof of the house may feature a gable to mark this entry way. In the houses of the wealthier commoners there are these differences: the entrance is in the form of a wide projecting porch with a special gable roof having carved woodwork about its front; the entrance is as wide as the porch itself; and a guest steps over the low sill onto a raised planked platform. When a house has a definite entrance such as the one just described, there are usually conveniences for storing traveling items, such as umbrellas and outdoor footwear. Such a storage facility may consist of shelves, or a guest may lift one of the unsecured raised planks inside the low sill and use the space under the plank.

The genkan, which is distinctive for the Japanese residence, is closely related to social order, and its evolution mirrors the development of Japanese society. Its origins are the two central gates in the covered walkways leading to the main hall of the aristocratic shinden residence. In the succeeding shoin style a verandah
was merged with a carriage stop that was accentuated with a curved roof and became the distinct entry way, the genkan.

In the late medieval society of Japan, the entrance hall acquired a special significance as the symbol of social rank, and commoners were forbidden to construct such a hall under the threat of severe punishment. It is understandable that when the Meiji reformation of 1868 nullified this class restriction the commoners built genkan, although they probably still used their former inconspicuous family entrances. The Japanese custom of removing shoes before entering the house; the need for a means to step up two feet from ground level to that of the house floor; and the persisting association with prestige are the main reasons why the entrance has maintained its place in traditional and modern dwellings alike. Yet it should also be seen as a means to honor a guest, as is the seat in front of the tokonoma.

1. Getabako (Figure 14)

The getabako is a storage place for outdoor footwear. Ishimoto defines it as a cabinet for storing shoes, wooden clogs, slippers, and umbrellas. Placed near the main entrance, it permits guests to remove their footwear and don indoor slippers before proceeding through the entrance hallway to the house proper. When the family entrance leads directly from the outside onto an earth floor kitchen, the getabako is found where one steps up from the earth floor to
Figure 14. GETABAKO. The getabako is a storage place for outdoor footwear. This one sketched in 1885 resembles modern shelving and is placed in a wall within the entry. From Edward S. Morse, Japanese Homes and Their Surroundings. Courtesy of Charles E. Tuttle Publishers.
the mat-covered wood floor of the remainder of the house. Because of the nature of the straw floor mats, the hard heel of a boot or shoe not only leaves a deep indentation in the mat but may break through. Therefore, the wearing of shoes in the house is one of the ways by which a foreigner is likely to offend the Japanese. This consideration of the Japanese custom of removing outdoor footgear aids significantly in keeping the house clean.

In configuration the getabako may take such forms as a shoe closet with a wood or cloth covering; open shelving similar to a small bookcase; shelving with one or two sliding panels; or an earthen floor space under a wooden step, with a sliding panel in front to close off the space.

m. Kirizuma (Figure 15) and Gegyo (Figure 16)

Because early Japanese man used fire to prepare his food and to heat his house he recognized the need for ventilation in his dwelling. As early as the Yayoi Period (300 B.C.-300 A.D.) his solution was a vent (kirizuma) in his roof, with thatch arranged to protect the opening against rain. The lattice framework screening the opening was intended to prevent birds from entering and sullying the interior of the house.

Ventilation openings varied in size and in location on the roof. Some openings were located in the main ridge and were covered by a small supplementary structure resembling a miniature roof. Others were placed on the side of the
Figure 15. **KIRIZUMA.** The kirizuma is a functional ventilation opening in the gable of the roof. Its lattice framework may vary in design.

**HAKOMUNE.** This dwelling also has a hakomune, a utilitarian ridge cover that encloses the ridge. The protruding ends of the ridge pole extend about two feet outward and curve slightly upward. Toyonaka Village, Osaka, Japan. Photographed in 1973.
Figure 16. GEGYO. The gegyo is a status symbol placed in the apex of the ventilation gable. This wooden pendant has the plum crest testifying to the prestige of its owner. The house was moved from Nosé, Osaka Prefecture, to the Toyonaka Museum, Osaka, Japan. Photographed in 1973.
roof, much like a dormer. Still others were put in the apex of the gable of the hip-gable roof, enabling the protruding thatched ridge to act as a hood for the vent.

Utilitarian as the ventilation opening was intended to be, the Japanese managed to associate it with status. To accomplish this feat they affixed a carved wooden pendant, gegyo, above the vent on the apex of the gable. Representations of flowers were sometimes carved on the pendants, some simple, others quite ornate. The person with a gable pendant, in effect, was proclaiming his position in his community.52

n. Iri-moya (Figures 17, 18)

Engel captures the essence of the Japanese concept of the roof in his contrast of Eastern and Western views. The roof is the most basic requirement for protection against weather and is the earliest element of man's space designation in architecture. Yet in Western architecture solid walls contribute more than the roof to the feeling of being inside a building. The Japanese "indoor" feeling is primarily dependent on the roof. This significance of the roof in Japanese architecture is evident in the translation of the two Chinese ideographs for the Japanese word for roof: "house" and "root".53 In comparison not only with those of Western houses but also with those of contemporary Japanese residential architecture, the roof of the minka is very large. One of the primary reasons is that the roof is
Figure 17. **IRI-MOYA.** The *iri-moya* (hip-gable roof) is one of three types appearing on the *minka* and dates back to the pit dwelling of the Jōmon Period. Itoh and Taut state that its use on the tea house is borrowed from the *minka*. The *iri-moya* gives this building its characteristic silhouette: a gable which cuts back instead of dropping vertically to the intersecting broad hip roof. See Figures 15, 16, and 18 for examples of this roof on the *minka*. Building is the tea house of the Silver Pavilion, Kyoto, Japan, completed in 1493. Photographed in 1973.
Figure 18. IRI-MOYA. The iri-moya is more than the combination of the Western hip and gable roofs. The aspect of the roof that makes it distinctively Japanese is discernible when the roof is seen in profile. The edge of the gable roof at the right in the picture does not drop vertically from the ridge but angles, or cuts back toward the house. Toyonaka Village, Osaka, Japan. Photographed in 1973.
a status symbol. Supported by a wood truss structure and fashioned from straw thatch, miscanthus reeds, wood or bamboo shingles, or tile, three principal roof forms appear on the various types of minka: the gable; the hip; and the iri-moya, or hip-gable. Dependent upon the size, configuration, and complexity of the house and appurtenances, two or even all of the roof forms may be represented on the same minka. Bruno Taut (Houses and Peoples of Japan) comments that both different roof forms and different ways of roof-tiling are sometimes combined in beautiful harmony in one house.

The iri-moya was the form I observed most frequently during my years in Japan and is the distinctive form now seen in Japanese style houses in Hawaii. For these reasons it is the roof form selected for inclusion in this study.

The iri-moya is more than the combination of the gable and hip roofs, individually known to Western architecture. The aspect that distinguishes it from the Western hip-gable is discernible best when the iri-moya is seen in profile. In the Western version, the edge of the gable roof drops vertically from the ridge. In the Japanese model seen in Figures 16 and 17, the edge of the gable roof is angled, or cut-back, as it drops from the ridge.

The iri-moya by all criteria is an ancient roof form. In his book, Japanese Architecture, William Alex's sketch of the reconstructed pit dwelling of the Jōmon Period
(8000 B.C.-300 B.C.) shows the *iri-moya* as the roof form above the entrance to the dwelling. In his book, *Traditional Domestic Architecture of Japan*, Itoh's photograph of the reconstructed pit dwelling of the Yayoi Period (300 B.C.-300 A.D.) pictures the hip-gable roof above the entrance in classic simplicity. Sketches of three of the four styles of dwellings shown in relief on a third to fourth century bronze mirror include the hip-gable roof at both ends of the three houses. Engel does not dispute the presence of the *iri-moya* in the pit dwelling nor its reflection in the Japanese farm houses, but believes it probable that the *iri-moya* was introduced from China where it developed as a feature of Chinese pit dwellings. Concurrent development of this roof form in Japan and China seems more likely than its introduction from China in view of the problems of communication and cultural exchange some 9,000 years ago.

Sometimes a special roof is used in combination with the *iri-moya*. Engel has no reservations about crediting the development of the *hisashi* to the Japanese. The *hisashi* is a lean-to roof, attached to the wall above such openings as a window or an entrance, or secured under the main roof as an extension to cover a verandah. It originated when the open verandah type rooms were attached to the four sides of the main room of the *shinden* mansion, whose roof did not extend far enough to protect the verandah against
heavy rainfalls. The hisashi, when added after construction of a house, circumvented the early rule against its use in the construction of a house, which was a privilege of the aristocracy. The lean-to roof thus was the easiest way for a commoner to add covered space, such as a verandah or bath, to an existing house.60

o. Koshi (Figure 19)

As it appears in the minka, lattice (koshi) is a framework of parallel wooden strips spaced to form regular, patterns interspaces. The reverse side of the framework usually is open but may be backed with a shōji or with a wooden panel. The size of the framework, the type of wood, and the position of the lattice in the house vary greatly and are determined by the aesthetic and practical standards of the owner. In this respect lattice dimensions are not necessarily governed by the module system. (See section on tatami.)

Construction of a piece of lattice is no challenge to a carpenter. In the case of a window, however, there is enough variation in construction requirements to merit attention. Lattice structured as a window may be flush with the wall surface, projected on cantilevers, projected on stilts that perch on foundation stones, or inserted in a wall.61 In the wall window of the minka a portion of the wall is sometimes left unplastered so that the bamboo lathes reinforcing the wall are exposed in the form of a
Figure 19. KOSHI. Lattice, or koshi, is a framework of parallel wooden strips spaced to form regular, patterned interspaces. It permits ventilation yet provides a degree of privacy by limiting the view of family rooms to passers-by. Sliding lattice at left, fusuma panel at right. Ikimatsu Inn, Kyoto, Japan, 1972.
An inspection of minka shows clearly that lattice figures prominently, but not identically, among the houses with regard to the number of pieces and to their purposes. Such decisions are at the pleasure of the home owner, who is influenced by cost, custom, and class of problems resolvable by lattice.

We can understand the role of lattice by reviewing its purposes and citing illustrations.

Lattice provides a measure of privacy by limiting the view of family rooms to passers-by. A lattice window in a room fronting the street; a lattice screen placed between the shop area in the front part of the building and the family rooms at the rear; and a sliding lattice door at the entrance to the house illustrate this function. A related benefit is the ability of inmates to see people and scenery outside the house.

The outstanding example in which lattice is related to ventilation is the triangular, sometimes rectangular, piece placed over the smoke outlet near the peak of a gable. Substitution of a lattice sliding panel for the solid fusuma panel aids the flow of breezes through the house in the hot summer without the total surrender of privacy.

As decoration, lattice appears as links joining both sides of a gateway to adjacent buildings; as an ornamental window in a wall; as the decorative top part of an otherwise
solid wood gate; and as adornment to the outer side of a verandah.

Lattice windows, lattice sliding interior panels, and lattice inserts in fusuma panels supplement shōji in providing natural light for the interior of the house.

Because of its wooden composition, lattice cannot provide complete security against intruders. However, it is of value in that it enables the indwellers time to try to identify an approaching stranger, permits conversation without the need to grant the stranger entry, and does offer some resistance to forced entry. Lattice in projecting bay windows on rooms fronting the street; as doors, fences, or gates on store fronts; and as an opening in a fence next to a gate are instances in which one or more of these security objectives are met.

An indication of the centuries-old use of lattice in Japanese houses is reflected in an installation at Toro, Shizuoka Prefecture, south of Tokyo. There Japanese scholars have guided the reconstruction of pit-dwellings of the Yayoi Period (300 B.C.-300 A.D.). Prominent as a component of the roof structure is lattice in triangular shape at the peak of the gable. 63

p. Engawa (Figure 20)

In its simplest form, the verandah (engawa) is the space between overhanging eaves and an earthen walkway and it is placed on one or more sides of a house. Other forms
Figure 20. ENGAWA. The engawa is an open verandah, consisting of the space between the overhanging eaves and the walkway, here a wooden platform. In a sense the platform is an extension of the indoors and a projection outdoors. In its simplest form the engawa has an exterior earthen walkway. Ueda residence, Kyoto, Japan, 1972.
involve stepping stones resting in the earth, stepping stones embedded in concrete, or wooden flooring and rain shutters. The deep overhanging eaves not only protect the house interior from the downpour of the yearly typhoons, but also shut out the burning rays of the high summer sun and permit the warming light of the low winter sun to penetrate the rooms.

Located outside the shōji that form the exterior wall of the house, the verandah is naturally an outdoor space, and yet since its wooden floor is in a sense an extension of the interior floors, it is also a part of the indoors. A number of indoor daily life activities are performed in this space. Yet the slightly lower level of the verandah, its different ceiling, and the occasionally staggered placement of room and verandah posts suggest a differentiation of space, a preparatory space to the exterior. Here the contrast between exterior and interior space is resolved.

The verandah goes back to the mansions of the nobility of the tenth to twelfth centuries, which were patterned after Chinese models. Initially sumptuary edicts limited the construction of verandahs, but by the early years of the Muromachi Period (1338-1573) the transition to certain kinds of minka had been made.

q. Hakomune (Figure 15), Umanori (Figure 21), and Chigi

Heavy rainfalls, typhoons, and melting snow on the roof
Figure 21. UMANORI. The umanori was designed to be more a status symbol than an improvement on the hakomune ridge cover. Crossed wood brackets shaped like the letter "X" are astride a wooden hakomune cover, with the upper part of each bracket extending into the air. The number of brackets often indicated position in feudal society. House in village outside Kyoto, Japan, 1973.
challenged the builders to waterproof the most vulnerable part of the minka roof, the ridge. Bundles of thatch tied with rope to the ridge pole aided the run-off of water but could not prevent it from soaking the ropes and dripping into the house. The basic approach employed was essentially the same as that used to waterproof the remainder of the roof, layering, but with significant differences as will be seen.

An early method for waterproofing the ridge was to place thatch covers over the places where the bundles that formed the ridge were tied with rope. Miscanthus reed, when available, was the preferred type of thatch because of its resistance to water. This method gave way to the construction of hakomune, a cover that encloses all of the ridge except the protruding ends of the ridge pole that extend about two feet outward and curve slightly upward.

The simplest type of hakomune consists of a layer of thatch placed transversely over the ridge pole and extending over all bundles of thatch tied to the ridge pole. A more efficient model of the hakomune adds bamboo or bark strips over the thatch layer on the ridge. The layer of thatch and its cover of bamboo or bark strips in turn are fastened down by lengths of bamboo or wood placed parallel to the ridge pole.

The most efficient hakomune consists of boards instead of thatch at the ridge, with tile attached to the boards in
the shape of a semicircular cap over the ridge. In this case, the complete roof might be of tile secured by clay to the roof boards.

The umanori was designed to be more a status symbol than an improved ridge cover. In this ridge feature, crossed wooden brackets shaped like the letter "X" are astride a wood hakomune ridge cover, the upper part of each bracket extending into the air (Figure 21). Itoh states that the number of crossed wooden brackets often indicated the position the family occupied in feudal society. The owner could not elevate himself in society by building as many brackets as he liked; roofing was a matter of cooperative labor and no deception was possible. Today this symbol has lost its significance except as a reminder of past prestige.

Itoh speaks of a third type of ridge for the house called the chigi. As presented in his photographs the chigi and the umanori are identical. Both are astride the ridge in the same manner; both are of rough, unfinished lengths of wood or limbs; both have their ends cut in a plane parallel to the diameter of the wood; neither has perforations in the ends that extend into the air.

The point of difference between Itoh and the other authorities consulted in this study is that the latter treat the chigi as a ridge cover for the Shinto shrine, not for the minka. As a feature of the Shinto shrine, the wood
frame of the chigi is made of finished lumber in rectangular shape, with the ends that extend above the roof cut at an angle to the axis of the wood, and containing perforations. In hierarchical Japan, the tangible evidence of status included the ridgepole. Its length was an index to the position and status of the occupant, as were the number of wooden brackets and the number of ornaments adorning the end of the ridgepole.

r. Gaki (Figure 22)

In the Japanese roofed fence (gaki) the principal building materials are clay, wood, bamboo, reeds, twigs, fagots, and thatch. The roof covering the fence may be of wood, tile, or thatch and protects the fence materials from the weather. The fence is secured to a sill resting two inches above the ground on flat rocks. Morse describes the fences he saw, roofed and other types, as of an almost inexhaustible variety and structure. Many were solid and durable structures, others of the lightest possible construction. Some had a solid frame and heavy stakes, others had wisps of rush and sticks of bamboo. Between these was a considerable number of intermediate forms. Itoh and Morse include as fences what Western architecture calls a wall. This type of Japanese "fence" is roofed with tile and made of plaster or a mixture of plaster and mud. It rests on a foundation of stone and is two to three feet wide at the base and rises to a height of eight feet
Figure 22. GAKI. This boundary marking fence has a base of stone, wooden supports, and plastered interspaces. Its tiled roof, which might also be of wooden shingles or thatch, protects the wall from weathering. Tokufu-ji Temple fence and gate, Kyoto, Japan, 1973.
The gateway to the lot on which the house is built is in effect an interruption in the roofed fence and usually is roofed. Gateways vary greatly as to their solidity or lightness and receive a great deal of attention. Many of these entrances are remarkable for their design and structure.

The roofed fence served as an index to Japanese attitudes toward property, physical security, and privacy during the feudal years when the minka was developed.

The fence enclosing the ground on which the house stood was a boundary marker that warned against encroachment in a country where land was the source of subsistence and the promise of financial security. In its way the fence symbolized the feudal struggles for the control of land and the production of rice when rice was the medium of exchange, standard of value, and basis of rent between landlord and tenant.

In the city the fence was usually quite tall, made of boards, and supported on solid frames resting on a foundation of stone. It afforded immediate and substantial protection against petty thieves in normal times and the poor in times of widespread economic hardship. It was of limited use, of course, against marauders in the ebb and flow of Japan's civil wars.

The privacy the fence offered was important to a people
who made the family the social unit and who valued the aesthetic enjoyment of their art objects and their gardens in particular. Even if a sweeping view were at hand, the owner might shut it off from view with a fence to create an intimate and private garden inside the fence.  

With the passage of time, the utilitarian purposes of the roofed fence, as opposed to the roofless fence, became secondary. As a costly feature that called attention to privately owned land, the roofed fence came to be viewed as a status symbol.

s. Niwa (Figures 23, 24)

Gardens vary in size, and some Japanese families cannot afford them. The size of the garden, the artistry in design, and the quality of the features are an index to the wealth of the family. Yet I have seen the pleasure gained by a family able to afford only one beautiful flowering plant nurtured in six square feet of soil. In this sense the deprived family is the one unable to afford any bit of ground to devote to the aesthetic pleasure of a "garden".

Stone, plants, and water are the basic elements of the Japanese residential garden. Stone takes the form of rocks, pebbles, stone lanterns, and stone lavers. Plants appear as flowers, shrubs, grasses, and miniature trees. Water may be symbolized in the dry garden or be seen as streams, ponds, and water falls. The number of combinations thus possible
Figure 23. NIWA. Stone, plants, and water are the basic elements of the Japanese decorative garden. When the garden is sited near the verandah and seen from within, it is a living picture wall. Near Yokoto, outside Tokyo, 1973.
Figure 24. NIWA. Decorative garden (niwa) with old lantern, moss covered trees, and stepping stones. The height of the stones above ground, the distance between them, and their size and shape are carefully calculated to allow for a normal gait. Private garden near Tatsumara Silk Co., Kyoto, Japan, 1973.
allows for individuality even within the constraints of available space and harmony with the house design.

Katsuo Saito (Japanese Gardening Hints) describes the mechanics of designing and planning Japanese gardens suitable for a variety of residential settings. Pervading his description are suggestions for grouping and positioning elements of the garden to represent such natural features as mountains, cliffs, plains, streams, and the seaside. He notes that these representations, because they are intended to be subdued, subtle, and elegant, sometimes suggest mood or atmosphere. In her interpretation of Japanese aesthetics and the garden, Mrs. Paul Kincaid (Japanese Gardens and Floral Art) stresses the use of suggestion: a remote allusion is often enough to satisfy a cultured Japanese, for the beholder is privileged to finish the scene according to his own imagination.

An exceptional aspect of the garden is the aesthetic order imposed by man. The forms of garden components, the expression of garden texture and color, and the arrangement of features are not left to chance. The garden is designed, and design implies conscious use of motif, purposeful composition, and meaningful order of the whole. Though it may be true that the design is intended to symbolize, the result is no longer nature or completely natural. Only the beautiful elements and motifs are taken from nature; they are then reduced to human scale and are placed in a
meaningful composition.

Loraine E. Kuck (The Art of Japanese Gardens), Itoh (The Japanese Garden), and Engel judge Zen Buddhism a powerful influence that makes the garden more than a source of aesthetic enjoyment. The component elements of the garden, their dimensions, and their configurations are only the superficial aspects of the garden. Nature evoked fear, admiration, and respect in the early Japanese, but Zen Buddhism interprets nature and supplies a philosophical translation for these emotions. Zen holds that all physical forms on the earth, animate and inanimate, are the expression of a single force. While feeling at one with nature, the individual attains a state that transcends physical existence and merges man's objective world and his subjective mind.

My references to Kuck, Itoh, and Engel are not meant to imply that all Japanese interpret the garden through the lens of Zen Buddhism. Relatively few receive the rigorous training in religious philosophy conducive to contemplating the concept of a single force in nature when viewing the garden. To the great majority, viewing a garden is an aesthetic experience.

Yuichiro Kojiro (Tradition of Japanese Gardens), in his subjective interpretation, holds that Japanese gardens are designed by men attempting to be at one with nature; Western
gardens are designed by men without reference to nature. To illustrate his point, he contrasts the handling of flowers, water, and pathways. Flowers appear in the Japanese garden as they do in nature. In the Western garden the various types may be mixed and arranged in formal flower beds. Water is observed in ponds and real or symbolic streams, with a water fall if appropriate to the setting in the Japanese design; the Western may well use gushing, statuary fountains. Japanese paths will harmonize with the terrain represented in nature; Western paths may be of geometric design.77

Kojiro's interpretation is open to question. For example, Western gardens began to be naturalistic under the aegis of Romanticism in the eighteenth century. Later, during the second quarter of the nineteenth century, Andrew Jackson Downing, a Hudson River Valley landscape designer, advocated integration of house and setting, which writers described as natural or picturesque.

The garden as an element of the minka is integral to the house plan. Its size is modular to harmonize with the room fronting it. The functional house-garden relationship is basic. Thus, the garden may constitute the outside "wall" that screens the openness of the house against exposure in the summer when the shōji panels are pushed aside. Seen from within, the garden is a "living picture wall", the green of the trees and shrubs responding to
sunlight and wind. Broad eaves prevent glare from becoming dominant and affecting the atmosphere of the "in" feeling for the viewers; and the rigid limitation of garden depth assures the same human scale that controls the interior room partitioning. 78

Matsunosuke Tatsui (Japanese Gardens) traces the introduction of the garden to Japan from Korea during the era of Empress Suiko (592-628 A.D.). Not until the Heian Period (794-1185) did the Japanese begin to modify the style of garden to suit their mode of living and tastes. In the late Kamakura Period (1185-1392), the restraint of Zen Buddhism subdued the elegance of the gardens of the nobility.

In the following years two principal types developed, the hill garden and the flat garden, referring to the presence or absence of miniature hills in the garden setting. During the Edo Period (1603-1867) relatively small gardens to be enjoyed from the interior of the house became popular. 79 As noted, the governing principle today is compatibility with house design and lot size.

The minka described in this chapter reveals pertinent things about the life of the common man in Japan. His life of austerity dictated a concern for utility and economy in an economic system that respected property and handicraft. His culture subordinated individualism to the best interests
of the family and offered the aesthetics and religion of Buddhism and Shintoism. Because of these influences, which affected the design of the minka, he was prone to continue his house style and to evaluate technology on the bases of need, utility, and impact on established social values.

Bearing this background, he migrated to Hawaii, where he reexamined his traditional house in ways reported in Chapter III.
CHAPTER III

The Minka in Hawaii

The Japanese immigrants to Hawaii knew and were attached to the minka, for they had constructed it and lived in it. In Japan their houses were authentically minka; the immigrants who were interviewed in this study had had an average of 20 of its 23 features in their residences.

Arrival in Hawaii precipitated cultural shock for the immigrants. Faced with the immediate problem of shelter, they perceived their alternatives as radically different from any type dwelling they had ever lived in.

The plantation long house was intended for bachelors and consequently offered no privacy for a family or floor space proportionate to the size of the family. In addition it provided only community kitchens, baths, and toilet facilities. The Hawaiian grass shelter lacked partitions, lighting, satisfactory ventilation, adequate protection for the ridge on top of the roof, and strips of wood to hold the thatch in place.

The Western style house could hardly have contrasted more than it did with the minka. The immigrants were faced with different construction principles, methods, and materials and an aesthetic that was expressed in formal balance, an abundance of material objects, and ornateness.
in house design. Material culture associated with religion was much more likely to be found in the church than in the home, and an emphasis on machine made objects increased at the expense of handicraft skills. Western cultural patterns found expression in separate rooms for different functions, such as eating, sleeping, and social entertaining.

Prolonged exposure to this housing environment has affected the features of the immigrant's house as they have appeared in Hawaii. This chapter uses photographs of contemporary minka features and interviews with 153 Japanese immigrants and their children and grandchildren to illustrate both constancy and change in the form taken by the minka. These interviewees lived in an average of five residences in Hawaii during the period 1882-1976, and each residence averaged six minka features. The generalizations that are made pertain to these 153 subjects and their 631 residences, but provide insights as to what may be true of many if not all Americans of Japanese ancestry in Hawaii (AJAH).

Commentary in the initial section of this chapter stresses the changes that have occurred, thus furnishing the background for a later discussion of the phenomenon of change that occurs within the process of continuity. The final section stresses the reasons the interviewees advanced for persevering in their traditional house features.
Three statistical measures are used to show the trend in continuity for each feature. They are the percentage of time the interviewees have had the feature in their Hawaii residences during the years 1882-1976; the percentage who have the feature in their present houses; and the percentage who would include the feature in a new house. These statistics are summarized in Table 1 and are included in the commentary on each feature.

a. Shōji (Figure 25), Grooves for Panels (Figure 26), and Fusuma (Figure 27)

The contemporary Hawaii shōji shown in Figure 25 duplicate the traditional version in dimensions, materials, construction, and function. They differ in that the wood members are not in their natural state and the setting includes painted walls and a painted ceiling rather than one of natural wood. As dividers used in the interior of the house, these shōji normally would have ramma panels placed above them. Figure 26 shows grooves within which shōji slide.

There is evidence of other changes in the use and composition of shōji in Hawaii. These panels can now be seen as windows inserted at random in exterior walls and as substitutes for fusuma in the interior of the house. Frequently they are not modularly scaled with ramma, floor mats and walls and thus sacrifice some of the harmony in composition that traditional shōji attain.
TABLE 1. -- Percentage of time interviewees have had minka features in their houses, 1882-1976; percentage of interviewees who have features in their present house; and percentage of interviewees who would include features in a new house

<table>
<thead>
<tr>
<th>Feature</th>
<th>1882-1976</th>
<th>Present House</th>
<th>New House</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shōji/fusuma</td>
<td>11</td>
<td>24</td>
<td>63</td>
</tr>
<tr>
<td>Ramma</td>
<td>6</td>
<td>12</td>
<td>37</td>
</tr>
<tr>
<td>Tokonoma</td>
<td>10</td>
<td>18</td>
<td>62</td>
</tr>
<tr>
<td>Chigai-dana</td>
<td>14</td>
<td>20</td>
<td>46</td>
</tr>
<tr>
<td>Futon</td>
<td>87</td>
<td>77</td>
<td>62</td>
</tr>
<tr>
<td>Altar/shrine</td>
<td>78</td>
<td>63</td>
<td>54</td>
</tr>
<tr>
<td>Zabuton</td>
<td>89</td>
<td>83</td>
<td>80</td>
</tr>
<tr>
<td>Tatami/goza</td>
<td>67</td>
<td>37</td>
<td>40</td>
</tr>
<tr>
<td>Furo</td>
<td>58</td>
<td>48</td>
<td>76</td>
</tr>
<tr>
<td>Genkan</td>
<td>28</td>
<td>37</td>
<td>54</td>
</tr>
<tr>
<td>Getabako</td>
<td>66</td>
<td>73</td>
<td>77</td>
</tr>
<tr>
<td>Vent/gegyo</td>
<td>13</td>
<td>15</td>
<td>24</td>
</tr>
<tr>
<td>Iri-moya</td>
<td>18</td>
<td>19</td>
<td>28</td>
</tr>
<tr>
<td>Lattice</td>
<td>13</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td>Verandah</td>
<td>36</td>
<td>30</td>
<td>53</td>
</tr>
<tr>
<td>Ridge cover</td>
<td>5</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Roofed fence</td>
<td>3</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>Garden</td>
<td>27</td>
<td>36</td>
<td>71</td>
</tr>
</tbody>
</table>
Figure 25. The SHŌJI in Hawaii. These shōji are duplicates of traditional ones in shape, dimensions, and function. They differ in that the wooden frames are not in their natural state. Honolulu, 1972.
Figure 26. Grooves for Sliding Panels in Hawaii. The upper grooves in which panels slide are deep to ease insertion and removal of sliding panels. Honolulu, 1972.
Figure 27. The FUSUMA in Hawaii. These interior sliding panels serve the same function as their traditional counterpart. They were made in the home from printed paper with a repetitive motif.

The RAMMA in Hawaii. This authentic ventilation panel, carved according to a traditional design, was imported from Japan. 1975.
Technology provided locking devices and compartmentalized glass panes, but led to the mixing of plastic and paper backed panels in the same room. While plastic backing may be more durable than paper, it impairs the harmony the traditional house obtains by consistency in the use of natural materials.

As is true of their traditional counterpart, the two panels of contemporary fusuma shown in Figure 27 have the same function and are modularly proportionate to the ramma above them. These panels were made in the home, using a printed paper with a repetitive pattern.

All present day fusuma observed in Hawaii during this study serve as movable partitions in the interior of the house. Some have plastic coated instead of traditional opaque paper, and machine made designs instead of hand painted scenes.

Although the great majority of interviewees desire shōji and fusuma in their homes, some reject these features. Some who now prefer the Western house consider these Japanese features incompatible with that style. For others the cost is regarded as too great. Still others note that these features provide less protection against burglary than hollow tile walls and wooden doors. Wives employed outside the home in some instances consider fusuma impractical and shōji a house-cleaning problem for which they have limited time. A more unusual criticism is that these features are
impractical if there are children in the house. The one person making this point may have invited this problem, for he permitted his child, as a reward, to poke holes in a *shōji* panel.

The significance of the foregoing information can be assessed better in the light of the statistical data obtained from interviews. Interviewees have had *shōji* and fusuma in their houses for 11% of the time they have lived in Hawaii. However, 24% have these features in their present houses, and 63% would include them in a new house if they were to build one.

**CONCLUSION.** A considerable percentage of Americans of Japanese ancestry in Hawaii (AJAH) are attracted to the flexible use of space that *shōji* and *fusuma* offer. These features probably will continue to be used, although with new materials and non-modular dimensions.

b. **Ramma** (Figure 27)

The wooden *ramma* shown in Figure 27 could just as well appear in a *minka* as in the AJAH house where it was observed. It was carved in Japan according to a traditional design, and its dimensions are modularly scaled to the *fusuma* panel seen below it. It differs from the traditional model in one respect: the combination of *fusuma* and *ramma* shown is quite ornate for the more subdued traditional taste.

*Ramma* also appears in Hawaii as sliding panels of
painted plywood and as permanently positioned lattice. It can be found above a wooden paneled sliding door, an art storage alcove, and above gypsum board, placements that differ from the traditional. The most unusual use noted was the combination of carved wooden ramma and immobile shōji to form an elaborate entranceway.

Ramma has lost favor with the AJAH on acculturation and utilitarian grounds. Those who have adopted the Western house feel that the ramma "is not appropriate". Ramma is criticized because its cost is held to outweigh its utility and because of the complications in installing it in Western style walls. Others object because ramma permits kitchen odors to permeate living rooms and use air conditioning or the combination of louvered windows and prevailing winds for ventilation.

Statistics obtained from interviews show that the ramma has lost favor in Hawaii. Interviewees have had it in their houses 6% of the time they have lived in Hawaii. Twelve percent have it in their present house, and 37% would include it in a new house.

CONCLUSION. Ramma is only moderately popular in Hawaii, probably because other means for ventilation have been more efficient. If the AJAH continue to use it extensively, it probably will be because they find aesthetic uses for it.

c. Tokonoma (Figure 28)

Most of the essential characteristics of the classic
Figure 28. The TOKONOMA in Hawaii. In design, function, and components this tokonoma is traditional. It differs in having painted walls and a printed wooden frame instead of the wooden toko-bashira column. In addition its size is not determined by the size of the tatami mat. 1975.
Tokonoma are captured in the contemporary model in Hawaii, seen in Figure 28. It is an alcove, simple in design, and displays a hanging scroll and a flower arrangement vase. The floor is a platform raised above the room floor, and the ceiling is lower than the room ceiling. This model differs from the traditional in that it has painted gypsumboard instead of clay walls, a painted wooden frame instead of a wooden column, the toko-bashira, and non-modular floor space.

Tokonoma in Hawaii tend to be elaborate in design, to display large numbers of art items, and to have painted or stained wooden components. The most radical departure from tradition is the use of the hanging scroll and wooden column, the toko-bashira, in locations other than the tokonoma. This disrupts the traditional aesthetic unity in interior house design gained from the integral tokonoma.

Some of the reasons the AJAH give for loss of interest in the tokonoma are predictable: cost, the need to use the space for practical purposes, a preference for the Western house, and the influence of the wife. After the wife of one interviewee obtained outside employment, she had little time to devote to making daily and seasonal changes in the tokonoma and neglected it. In another case the tokonoma was added to the house because the wife desired it; when she died the husband no longer felt a need for it. In a third case the only Japanese feature the husband added to the
house was the tokonoma; his wife wanted it because of her interest in flower arrangement.

The foregoing reasons are significant, but they do not necessarily presage the end of the tokonoma in the near future. The interviewees have had this feature in their houses for 10% of the time that they have lived in Hawaii. Eighteen per cent have it in their present house, and 62% would include it in a new house.

CONCLUSION. The tokonoma will continue to be seen in the houses of the AJAH particularly if the wife has time to devote to maintaining it. However, a changing concept of aesthetics is guiding this feature. Flower arrangements and art objects now are elaborate, and many rather than few art objects are displayed. In addition, the harmony introduced by the modular system and the use of materials in their natural state is seldom seen.

d. Chigai-dana (Figure 29)

The right half of Figure 29 shows a contemporary chigai-dana in Hawaii. As is true of the traditional model, this chigai-dana has a common wall with its companion alcove, the tokonoma. Inclusion of small shōji in one wall for light is appropriate, although many traditional chigai-dana do not do so. This Hawaii version is authentic in its use of shelving, cupboard, and special form of wood column extending downward from the ceiling. The deviations from tradition are the large doll in its glass display case, the
Figure 29. The CHIGAI-DANA in Hawaii. The storage alcove is on the right side of the photograph. It differs from the one in the minka in that walls and ceiling are of painted gypsum board instead of natural wood or clay. For traditional taste too many items are crowded into the space. 1975.
substitution of painted gypsum board and stained wood for clay and unfinished wood, and the large number of items on display.

Chigai-dana in Hawaii tend to be elaborate and to include many art objects on display. Like the one in Figure 29 they rarely use materials in their natural state, and seldom are modular. The tendency to display large dolls is pronounced and zabuton storage is now part of its function. This sets the Hawaii model apart from the traditional, as does the use of ramma above the chigai-dana.

Interviewee attitudes toward the chigai-dana reveal that many who do not desire it no longer understand its history and use. Some say that they do not want to allot space to a feature that would look cluttered with objects. Yet they use considerable space in several rooms to place objects on tables, shelves, and in bookcases. Others settle for either a chigai-dana or a tokonoma, feeling that either one will bring maximum effect by the display rather than the storage of art objects. Those who choose the Western method of display, abundance, ornateness, and formal balance of items, little understand the subtlety of the companion chigai-dana and tokonoma. The traditional Japanese emphasize restraint, selectivity and asymmetrical balance.

Whether used for display, storage, or both, the chigai-dana has a moderate measure of support in Hawaii. Interviewees have had it in their houses for 14% of the
time that they have lived in Hawaii. Twenty per cent have it in their present house, and 46% would include it in a new house.

CONCLUSION. The diminishing interest in maintaining a separate, prominent house feature to store objects for tokonoma display is significant. However, the fact that almost half the interviewees desire the chigai-dana indicates that it will persist even if its function changes.

e. Futon (Figure 30)

Like its traditional equivalent, the futon in Figure 30 was made in the home and serves as quilting for the person who sleeps on tatami. The lady shown in Figure 30 is a skilled craftsman who made the futon in approximately three and one-half hours. She had learned how to make a futon from her aunt, and was instructing her daughter when this picture was taken. She explained that most futon today are no longer made in the home but are purchased in department stores. Further, earlier ones would be made of cotton, silk, or hemp and stuffed with ravelings of old fabrics. Today the cover fabric is a cotton and polyester blend while cotton wadding is used for the interior. Also, this futon is thicker, wider, and lighter than the traditional.

The new type of futon that was described in this study is machine-made because the handicraft skill is beginning to disappear. Its importance in the AJAH family is recognized by department stores in Hawaii who sell not only
Figure 30. The FUTON in Hawaii. This futon is thicker, wider, and lighter than the traditional one. Most of those observed in this study were machine made. Futon are now being used on beds instead of on tatami floor mats. 1976.
futon but foam rubber mattresses to place under them.

The principal change from the original purpose of this article lies in its current use as a bedspread or quilt on a Western type bedstead. Even in these instances people place a board under the mattress to simulate the hard floor, but use futon to sleep guests on the floor. One individual stated that during his life on a farm in Hawaii from 1899 to 1923 this article was made of rice husks placed in a bag resembling a futon. Today there are individuals who have adopted the electric blanket.

The study did not reveal exactly how many interviewees are using the futon to sleep on the floor and how many are using them on Western bedsteads. It is evident that some are still used the traditional way, especially when guests are present. In one case, it was reported that when visiting you are expected to bring your own futon with you. College students are using them in unfurnished, rented apartments to save the cost of buying a bed.

The past and current popularity of the futon is evident in the survey statistics. Interviewees have had this feature in their houses for 87% of the time they have lived in Hawaii. Seventy-seven per cent have it in their present house, and 62% would include it in a new house.

CONCLUSION. One may speculate that the popularity of the futon is partly attributable to its adaptability. It is successful when used in the traditional manner; it can
replace the American quilt for warmth in the higher elevations of Hawaii. It will continue to be popular as long as multi-purpose use of floor space is important to the AJAH family. In addition, the futon now is being used on the Western twin or double bed. However, the choice of the futon as a bedcover misses the status and sex appeal of Western bedding.

f. Butsu-dan (Figure 31) and Kamidana (Figure 32)

The butsu-dan shown in Figure 31 is in an AJAH house but was made in Japan. It has the customary miniature statue of Buddha, miniature lamp, incense burner, candle, flower vase, and vessels for food offerings. In this example, hinged doors are provided to screen the altar when it is not in use.

The household place of worship in Hawaii also reflects the pluralism of religions discussed by Earhart. There are combinations of items from three different religions. Some houses have the Buddhist altar, the Shinto shrine, and the Christian statue; some have none of these religious symbols; others include all combinations between these extremes.

Attitudes toward a household place of worship also vary considerably. The less traditional interviewees want the Buddhist altar only. The more traditional prefer both Buddhist altar and Shinto shrine, to respect the different faiths of husband and wife, or the two religions of each. The house that has only the Shinto shrine indicates
Figure 31. The BUTSU-DAN in Hawaii. This Buddhist altar would be perfectly appropriate in Japan. Despite the inroads of Christianity, the family altar has persisted during this past century. 1974.
Figure 32. The KAMI-DANA in Hawaii. This Shinto household shrine is made of wood in its natural state. It is similar to a Shinto shrine and has the distinctive chigi ridge projections. 1977.
preference by both, for Shintoism (Figure 32). In the more unusual instances the interviewee has included a statue for his Christian faith and a Buddhist altar or Shinto shrine to honor the faith of his ancestors.

Interviewees report that the Buddhist altar should be so placed that the worshipper faces the sun to welcome the new day. The eldest son inherits the altar, and periodically a Buddhist priest performs a memorial ceremony for family ancestors. The tendency today is to move the place of worship from a screened alcove in the principal room to a bedroom, but it is disrespectful to sleep with one's feet pointed toward either altar or shrine.

Most of the individuals studied in this research turned to, but some turned from, the traditional religions. It was the practice of one couple on the plantation to meditate each evening before retiring at 8:30. Today, this same couple as grandparents meditates before separate altars in separate bedrooms. In the more affluent AJAH homes, husband and wife often do not share a common bedroom and altar. Yet there is no reported evidence that any interviewee imposed his faith upon spouse, children, or grandchildren. As reported, death of a spouse could end the presence of an altar or shrine used only by that person, and might even mean burial of the shrine or altar with the person.

Conversion to Christianity is the major reason given
for the decrease in popularity of the household altar and shrine. Hunter attributes this trend to the material advantages that accrued in the past to the Christian businessman in Hawaii. This study suggests that the unhappy experiences of the AJAH during World War II may have caused some to reject their religion. Although interviewees did not so state, it seems reasonable to conclude that some turned to Christianity because of the strength of its precepts. Despite the inroads of Christianity, interviewees have had the household place of worship for 78% of the time they have lived in Hawaii. Sixty-three per cent have it in their present house, and 54% would include it in a new house.

CONCLUSION. The Buddhist altar and Shinto shrine will continue to be seen in the AJAH house. The frequency of occurrence will depend on the extent to which younger AJAH derive the personal satisfaction that their parents and grandparents do from Buddhism and Shintoism.

g. Zabuton (Figure 33)

The contemporary floor cushion in Hawaii (Figure 33) and the traditional one in Japan serve the same purpose and are appreciated for their economy, convenience and the intensive use of floor space they make possible. Changes that have occurred are superficial rather than fundamental. The traditional zabuton is somber in color, relatively thin, and hand made. The model shown is in bright colors,
Figure 33. The ZABUTON in Hawaii. The zabuton in Hawaii serves the traditional purpose and is appreciated for its economy and convenience. Unlike the traditional floor cushion, the one in Hawaii is bright in color, thick, and machine made. 1975.
relatively thick, and machine made. The scraps of fabric and the husks that once were common to the zabuton have given way to synthetic fabrics for covers and synthetics or cotton fibers as wadding. The contemporary zabuton shown is representative of those in use in AJAH homes.

The zabuton is the household feature most frequently found in the AJAH house. It is reported that when the family in Hawaii invites guests for dinner, both the family and the guests expect to sit on zabuton. Even if the family uses a Western style table with chairs, it will entertain guests of Japanese heritage in the traditional manner. Visitors typically will prefer zabuton to chairs, a choice that makes it possible to have family gatherings with a minimum amount of furniture.

To a few individuals who were interviewed, the zabuton is uncomfortable to sit on and does not fit into a Western style house. One person said that it brings back unpleasant memories, for it had labeled him as Japanese during the tense World War II years.

Statistical data make clear how popular the zabuton is. Interviewees have had it in their houses for 89% of the time they have lived in Hawaii. Eighty-three per cent have it in their present house, and 80% would include it in a new house.

CONCLUSION. The zabuton will continue to be popular in Hawaii, primarily because of the intensive use of space it
makes possible. This concept of space is important to the AJAH, as it is to the Japanese. It may have its origins in the competition for land in a country that was poor in usable land and heavily populated. The relative scarcity of land and large population in parts of Hawaii resemble those conditions in Japan. An additional reason for the popularity of the zabuton is its low cost in comparison to a Western chair.

h. Tatami (Figure 34)

The straw floor mat illustrated in Figure 34 is an authentic tatami imported from Japan for use in Hawaii homes. Six feet by three feet by two inches in size, with a wide dark cloth border, it is more resilient and expensive than the substitute goza straw floor mat.

The first Japanese immigrants in Hawaii made a type of tatami and goza in the home, replacing the old about every three years with mats made from locally available materials. The skill has largely given way to importing authentic mats, although at one time the imported product was barred because it contained insects. Goza units have acquired a widespread secondary use as beachmats.

The traditionalist AJAH who can afford it wants tatami in his house, for it is in keeping with his Japanese style room. In addition it is comfortable for sleeping, and if one wears indoor footwear, for walking. If he cannot afford tatami for the entire house, he substitutes goza as necessary.
Figure 34. The TATAMI in Hawaii. The traditional straw floor mat typically is machine made today. The ones shown were imported from Japan for use in this house in Hawaii. Traditionalist Japanese in Hawaii who cannot afford tatami substitute the less expensive goza floor mat. Archives of Hawaii, no date.
The AJAH who buys only goza may do so because he is a traditionalist with limited funds, or because he is a non-traditionalist unable to afford carpeting.

The ease with which carpeting can be vacuum cleaned appeals to the wife who knows the tedium of sweeping floor mats indoors or shaking them out of doors. Other practical points are that floor mats harbor insects and are colder to walk on than carpets when one is barefoot.

The use of floor mats in Hawaii has declined. Those homes where they are found often have them in only one room. Interviewees have used them for 67% of their time in Hawaii: 37% have them in their present house, and 40% would include them in a new house.

CONCLUSION. Some AJAH now regard carpeting as more practical than tatami. Nevertheless, the number who now use it and the number who desire it suggest that floor mats may be used by the AJAH for years to come.

i. Furo (Figure 35)

The distinctive characteristic of the furo is that one washes outside the tub, then relaxes in hot water inside it. The contemporary ceramic tile version pictured in Figure 35 shows the wash bucket, seats, and tile floor where washing takes place before one steps down into the deep furo, which in this example may accommodate two people. Hot water is piped into the tub, and a tile or wooden seat may be used. This Hawaii model does not differ greatly from those seen
Figure 35. The FURO in Hawaii. This model differs little from the traditional deep tub into which one steps after washing and rinsing. The furo is also made of wood in Japan and in Hawaii. Courtesy Ella Tachikawa, 1975.
today in Japan. In both Japan and Hawaii the furo also is made of wood.

Figure 36 shows an imported plastic model from Japan, designed for but one person. It is available in Honolulu department stores catering to AJAH. A compromise model in Hawaii has a shower head installed at one end so that there is a choice of two styles of bathing. The elaborate model in Hawaii consists of two tubs placed side by side, and the ultimate adds a scenic view for aesthetic appreciation while one relaxes.

The furo was one of the first facilities the Japanese immigrants asked of their plantation employers. The wooden community furo the employers furnished were unsatisfactory. Other ethnic groups would not wash before entering the furo, but made group nudity a source of embarrassment by comments and by peeping; the furo might be an inconvenient distance away for some of the Japanese; the waiting line might be long; children might loiter on their way home. The solution gradually adopted was the family furo, located outside the house in a separate shelter. Initially water came from a well or a plantation irrigation ditch and had to be carried to the furo in buckets. The furo itself it was reported might be an old vanilla barrel cut in two.

The information gathered in this study indicates that in Hawaii the attitude toward the furo is related to the age of the interviewee. The older AJAH almost without exception
Figure 36. The FURO in Hawaii. In recognition of the popularity of the furo in Hawaii, a department store in Honolulu that caters to people of Japanese ancestry sells plastic furo. 1976.
want it, and their desire is pronounced and quite specific as the following examples show. One father wanted bathing to be a family affair, so he used a large room to build a cement and tile furo to accommodate four adults and four children. A mother-in-law insisted on a wooden furo, which her son-in-law built for her. One family used a shower but provided a furo for the grandmother.

Objections to the furo come from some of the younger AJAH. They are familiar with the speed with which one can shower or tub bathe and have not yet placed much importance on relaxing in the traditional manner. Others, not having had access to the furo for various reasons, say they are not interested in it. Still others consider it a luxury.

The furo is accepted by the majority of the AJAH. Interviewees have had it in their houses for 58% of the time they have been in Hawaii. Forty-eight per cent have it in their present houses, and 76% would include it in a new house.

CONCLUSION. The furo will continue to be a feature in AJAH houses, if the statistics obtained are meaningful. The tenor of interviewee comments suggests that it may become a status symbol, which would reinforce its popularity.

j. Genkan (Figure 37)

The guest entrance shown in Figure 37 is used by an AJAH family in Hawaii and closely resembles the classic
Figure 37. The GENKAN in Hawaii. The guest entrance shown closely resembles the traditional one in form and function. This one differs in having a tile instead of stone floor and a single step instead of two. The guest seats himself on the step to remove his outdoor footwear. 1976.
genkan in form and function. The model shown differs in minor respects, such as a floor of tile instead of stone and a single step instead of two. A place for the guest to sit while he removes his outdoor footwear and a place to store that footwear are located for his convenience, as they are in the traditional genkan.

In Hawaii the approach to the genkan may be gravelled, and the entrance itself may be open rather than closed by a panel or door. Plants are found around the entrance as well as inside, where decorative objects may also be displayed. In some instances the getabako, or shoe storage cabinet, is quite large. In a marked departure from traditional practice, one family has fashioned the sides of a genkan from shōji and ramma.

The cost of building a genkan has deterred many families from putting one in their houses. As a consequence some persons interviewed professed little interest in a feature they have never had. On the other hand, some who have never had it voiced their interest in adding it to their house.

The criterion of need was at issue in numerous interviews. One person felt that having a Western front and back entrance made an additional special guest entrance unnecessary. Several persons thought that a small uncovered porch outside the front door was preferable to a genkan, failing to recognize that the latter, as an interior feature,
protects against the weather.

Although the opinions of those having no interest in the genkan were definite, the survey shows that it also has supporters. Interviewees have had it in their houses 28% of their time in Hawaii. Thirty-seven per cent have it in their present house, and 54% would include it in a new house.

CONCLUSION. Because it is so representative of the Japanese attitude and conduct toward guests and visitors, the genkan will continue to be seen in AJAH homes. The limiting factor of cost will delay some families in adopting it, and the form adopted may lack those distinctly Japanese status elements which were a part of the traditional feature.

k. Getabako (Figure 38)

A cabinet or plain shelving for storing outdoor footwear is located at the family entrance (Figure 38) as well as at the guest entrance in both the minka and the AJAH house. The model shown is in Hawaii but could be taken for a traditional one except for the adjustable height for shelves. The entrance served by this getabako is quite different from the entrance in Japan, for it has a rug and a closed, hinged swinging door that can be locked. In contrast the model in a minka may have a curtain or sliding panel to conceal the contents of the getabako, and an entrance with a sliding door.
Figure 38. The GETABAKO in Hawaii. The shoe storage model shown closely resembles the authentic getabako. It differs in that it has adjustable and paper covered shelves. Its setting is Western. The traditional entry uses a sliding panel instead of a hinged door, and has a stone floor rather than carpeting. 1976.
A more economical version in Japan and Hawaii allots space under the step inside the sill for storage. A family entrance getabako seen frequently in Japan but seldom in Hawaii is located where the earthen floor kitchen gives way to the raised living area. In this case outdoor footwear is worn into the kitchen but removed before stepping up onto the tatami. Another point of difference is that in some cases the Hawaii model may be only at the family entrance and may reach to the ceiling if the family is large.

The desire of the Japanese for a clean house is recurrent in the interviews. One family lapsed in its habit of removing shoes after the wife died. A young wife, who as a child objected to this practice, now demands that her children and their guests do so. Interviewees state that the only Japanese custom maintained while they were interned on the mainland during World War II was to exchange outdoor shoes for indoor slippers upon entering the barracks. One family uses a recessed floor area, after removing their shoes, to warm their feet while watching television programs. A low table over the opening has a heating element and is covered with a futon. One plantation family maintained a shoe storage place, even though the father could not afford shoes for the children.

A few of the individuals in the study are not interested in two getabako, one at the guest, the other at the
family entrance. They think one at the family entrance is enough. Some individuals profess disinterest in a guest entrance and all shoe storage facilities; to them, the "American" type of household "is better". A small number concede that the antagonisms during World War II induced them to discontinue household features widely regarded as Japanese; they have never returned to many of the old ways.

Interviewees have had the getabako in their houses for 66% of their time in Hawaii. Seventy-three per cent have it in their present house, and 77% would include it in a new house.

CONCLUSION. Because it has such great utility, this feature will continue to be popular with the AJAH. The present trend will be reinforced by other ethnic groups who have adopted the practice of removing shoes at the entrance to the house.

1. Kirizuma (Figures 39, 40) and Gegyo (Figure 41)

The kirizuma, or ventilation opening in the gable, that is portrayed in Figure 39 imitates the design found in Japan in that it is functional and uses lattice to form small squares to exclude birds. However, it is painted and quite large in comparison with its Japanese counterpart.

Gables in Hawaii tend to be larger than those in Japan, possibly because the climate is warmer. As a consequence the typical kirizuma in Hawaii also is larger. The one in the minka is triangular in shape and fills the gable.
Figure 39. The KIRIZUMA in Hawaii. This functional ventilation opening in the gable resembles the Japanese style. However, it is quite large in comparison and is not on the iri-moya roof as would be its Japanese counterpart. Courtesy Susan Kadooka, 1975.
Figure 40. The KIRIZUMA in Hawaii. The ventilation opening in the gable appears in a variety of geometric forms in Hawaii. This functional one does not conform to the shape of the gable. Courtesy Susan Kadooka, 1975.
Figure 41. The GEGYO in Hawaii. This wooden pendant affixed to a Hawaii house is similar in shape and size to the gegyo on the minka, but is not used on a tile roof as it may in Japan. It does not connote status as it does in Japan. 1976.
The Hawaii version often has different geometric forms and may resemble a window inserted in the gable (Figure 40). A fundamental difference is that in the minka the kirizuma is always designed to provide ventilation, while in Hawaii the feature is as likely as not to be pseudo. In this situation, the lattice strips may be painted a color different from that of the gable for decorative effect.

Among the interviewees the division of opinion about the desirability of the kirizuma centers on a few basic points. Those who have had a functional one like it for its performance and because "it is Japanese". For the latter reason they desire a non-functional one to none at all. Doubtlessly it also continues because it is what they know how to build. The persons who do not desire it say that it is not needed in Hawaii, and in any event, air conditioning and kitchen ventilation fans are more effective. A small minority say that they want only features that "are clearly American".

The Gegyo appears originally to have had the function of securing the ridge cover against high winds, extending vertically from the ridge pole and cover as it did. That function has long since been superseded, and the gegyo has served as a status symbol and good luck omen in Japan for many years. The gegyo in Hawaii (Figure 41) is similar in shape and size to the one in Japan but does not appear on a tile roof as it may on the minka.
Judging by responses from interviewees, this feature is decorative and has little if any connotation of status when affixed to a house in Hawaii. In its simplest form it is the end of a ridge pole extended through the gable. As an elaborate model, it may be placed above the guest entrance or combined with other decorative features. As early as 1876, it appeared with American gingerbread type of trim in Honolulu (Figure 42).

Interviewees' feelings about the gegyo are substantially the same as about the ventilation opening in the gable. The most frequent objection is that the feature is unnecessary, gaudy, and decorative rather than functional. The strongest supporters like it because "it's Japanese and we have become accustomed to it".

The functional kirizuma and the gegyo clearly lack support among the AJAH. Interviewees have had these features in their houses 13% of their time in Hawaii. Fifteen per cent have it in their present house, and only 24% would include it in a new house.

CONCLUSION. Unless the value of the kirizuma in Hawaii as a cooling device becomes clearly understood it will decline in popularity. The pseudo-kirizuma may persist because this non-functional model can make the gable decorative. The gegyo has not been accepted widely as a status symbol and good luck omen, nor does it serve any utilitarian purpose. It will be seen less frequently than the authentic
Figure 42. The GEGYO in Hawaii. This pendant appeared as early as 1876 in Honolulu together with American gingerbread type of house trim. Archives of Hawaii, Honolulu, 1876.
or pseudo-kirizuma.

m. **Iri-moya** (Figures 43 and 44)

The *iri-moya*, or combined hip roof and gable roof, shown in Figures 43 and 44 are of Hawaii manufacture but are interchangeable with ones in Japan. In both Japan and Hawaii there is variation in the size of the gable and the pitch of the hip roof component, and in both locations wood in its natural state and tile are the construction materials. Except for the use of thatch in Japan but not in contemporary Hawaii, the differences in the roofs are in degree. The Hawaii gable varies more in size, the Japanese hip more in pitch; thatch and tile are used more frequently in Japan, wood shingles in Hawaii.

The distinctly Japanese aspect of the *iri-moya* is its "cut-back", discernible in Figure 44 where the roof is shown in profile. The edges of the gable roof are angled, or cut-back, rather than dropping vertically from the ridge to the hip part of the roof. The original purpose of this "cut-back" was to keep the rain or melting snow from entering the vent.

During the interviews interesting correlations came to attention. The persons who knew the *iri-moya* as a Japanese roof style tend to want it; those who do not know its history and function express concern about the cost and curiosity about any advantages it has over a more conventional roof. Among the occupations represented, carpenters
Figure 43. The IRI-MOYA in Hawaii. This combination hip-gable roof photographed in Hawaii is interchangeable with the wooden shingle Japanese model. In Hawaii the roof is customarily of wooden shingles; in Japan it may also be of thatch or tile. Honolulu, 1976.
Figure 44. The IRI-MOYA in Hawaii. This is part of the same structure as shown in Figure 43. Here the roof is seen in profile to demonstrate its "cut-back". This distinctively Japanese characteristic is seen in the manner the gable angles toward the house instead of dropping vertically from the ridge. Honolulu, 1976.
tend to prefer it; persons with other occupations are more interested in interior features of Japanese design. Those who want "a Japanese house" are in favor of the iri-moya; those who remember unpleasant anti-Japanese experiences in World War II want "an American house".

The iri-moya has clearly lost in popularity since the Japanese immigrants brought their house with them to Hawaii. Interviewees have had it in their houses 18% of the time they have lived in Hawaii. Nineteen per cent have it in their present house, and 28% would include it in a new house.

CONCLUSION. As the descendants of the immigrants learn to prize the shade and the protection against rain that the extended eaves of the hip-gable roof provide, they probably will turn to it in larger numbers than at present, if they can manage its cost.

n. Koshi (Figure 45)

When it is encountered in Hawaii, koshi, or lattice, is all but indistinguishable from that in the minka. The construction, the materials, and the purposes served differ but little, although lattice in Japan tends to be modular in dimensions more often than in Hawaii. A minor difference arising from technology is the use of glass louvers behind lattice in Hawaii in contrast to shōji or fusuma panels behind lattice in Japan. Figure 45 shows one of the uses of lattice in Hawaii.
Figure 45. The KOSHI in Hawaii. The principal difference between the lattice sliding panel in Hawaii that is pictured and the one in Japan (Figure 19) is that this one is an exterior panel, the one in Japan, an interior panel. 1976.
Lattice is in keeping with the decor of the Japanese house and is desired by those who like the harmony among features in the minka. The economy of eliminating draperies in a room when the windows have lattice appeals to some who participated in the survey.

Among those who declared against lattice there is little understanding of its original purpose in the minka. Again persons are preoccupied with its "Japanese look" rather than the preferred "American look", and the effort needed to clean and maintain it. These attitudes do not seem to be firmly held, suggesting that they might be reevaluated in the light of what the persons learned about the lattice during the interview.

Interviewees have had lattice in their houses 13% of their time in Hawaii. Seventeen per cent have it in their present house, and 27% would include it in a new house.

CONCLUSION. Lattice can be constructed and displayed with considerable artistry, and it brings a measure of privacy to the house at little cost. If residential lots become smaller and the cost of constructing houses increases, these trends probably will increase the popularity of lattice.

Engawa (Figure 46)

The contemporary Hawaii verandah, or engawa, seen in Figure 46 is comparable to but not identical with the wooden Japanese model. It is supported on posts that rest on
Figure 46. The ENGAWA in Hawaii. In composition and form the verandah shown resembles the traditional one. It differs in that the wooden walkway is waterproofed and a sliding glass door is used instead of a shōji sliding panel. 1976.
slightly hollowed rocks, and is fully covered by the overhanging eaves. The floor level is slightly lower than that of the house, and from the interior the view is toward a garden.

Unlike the Japanese model, the one shown has a waterproof finish and a sliding glass door rather than shōji panels to create the distinction between the indoor room and the outdoor verandah. It lacks stepping stones leading to it as well as a barrier at each end.

Exact duplicates of the Japanese verandah can be found in Hawaii with respect to materials, construction, and use. A type that is seen in authentic as well as modified form is the walkway of pebbles or stepping stones instead of a wooden platform. In its modified form in Hawaii the space is planted or filled with potted plants so that the function of walkway is lost. In these cases the interior of the house usually has ample hallways to the various exits or to the rooms viewing the garden.

The great majority of interviewees who desire the engawa associate it with the pleasure they gain when they can view a natural setting and a garden through or from a verandah. A minority spoke with favor because the verandah makes the interior room seem larger than it actually is.

Persons who would not include a verandah in their house are concerned about the initial and the subsequent cost and
the time needed to maintain this feature. Further, most of their homes have indoor hallways so that an outdoor passageway is not needed. To them practical aspects outweigh the aesthetic, although some qualify their answer to say that they would have it if they could afford it.

On balance the verandah has held its own. Interviewees have had it in their houses for 36% of the time they have lived in Hawaii. Thirty per cent have it in their present house, and 53% would include it in a new house.

CONCLUSION. The probable reasons for the popularity of the verandah are the beauty it brings to the house, the sense of added space it gives to a small room, its suitability to a warm climate, and its identification with the Japanese heritage. This motivation should continue to be as strong as it has been for the century the immigrants and their progeny have lived in Hawaii.

p. Hakomune (Figure 47) and Umanori (Figure 48)

As distinctively Japanese covers crowning the minka, the hakomune and umanori anchor the ridge against wind and rain and the latter indicates social rank among the commoners. This research revealed only two exact duplicates of the hakomune in Hawaii. As can be seen in Figures 47 and 48 ridge covers are greatly modified versions of the Japanese type and no longer display wooden brackets astride the ridge as status symbols. The models shown cover the entire ridge, protrude beyond the ends of the ridge, and
Figure 47. The HAKOMUNE in Hawaii. This ridge cover on a Hawaii house is a modified hakomune. It has ventilation openings under its enter length instead of only in the gable as is true of the Japanese version. 1976.
Figure 48. The UMANORI in Hawaii. The ridge cover shown is a modified version of the traditional umanori. It substitutes a solid wood beam atop the ridge for the traditional wood brackets that extend into the air. 1976.
clearly are caps to protect the ridge; in these respects they resemble the Japanese version. The models differ in that one adopts the solid beam seen atop temples. The other has ventilation openings in the cap itself instead of in the gable and uses wooden shingles rather than thatch, tile, or strips of wood placed perpendicular to the ridge pole.

Other contemporary ridge covers are not so deep as the Japanese versions, probably because the latter are meant to extend over a length of thatch. Instead of thatch, today one finds tar paper, wooden shingle and corrugated metal roofs which are capped somewhat after the Japanese fashion.

Survey responses make it quite clear that the authentic Japanese ridge cover is out of favor. It has not been accepted as a status symbol in Hawaii, and is considered less effective than the modified types of covers available. Interviewees have had the Japanese cover on their houses only 5% of the time they have spent in Hawaii. Sixteen percent have one on their present house, and only 16% would include one on a new house.

CONCLUSION. The two major considerations that sustained the Japanese ridge cover in Japan have not survived the acculturation process in Hawaii. Other models have greater utility, and other status symbols have supplanted the umanori. No trend to identify these features with ethnicity has been detected. The original types probably will disappear in Hawaii.
q. **Gaki** (Figure 49)

Like the roofed fence in Japan, the **gaki** fronting a house in Hawaii in Figure 49 has a solid foundation atop which are modular panels and a roof. Hollow tile has been substituted for the classic stone base, and wood for clay in the panels. Either wood or tile is used in the traditional roof over the fence; in the Hawaii **gaki** (Figure 49) wooden shingles appear. In this example, the materials in the Hawaii model are painted and the structure is not as high as the Japanese version.

Roofed fences in Hawaii are notably similar to those in Japan in design. Such differences as can be observed in Hawaii include open and decorative work in the hollow tile immediately under the roof; redwood paneling; overlapping but separated lengths of wood atop the hollow tile base; and complete superstructures of bamboo.

In view of comments from the interviewees, it is remarkable that the roofed fence has survived in Hawaii. The small minority who desire this feature may do so because to them it is a status symbol within their ethnic group. The major objections are cost and incompatibility with the Western style house decided upon in reaction to anti-Japanese sentiment in Hawaii during World War II.

Unlike the situation in Japan, the **gaki** in Hawaii has not emerged as a widespread symbol of ownership of land. However, as land becomes more difficult to acquire in Hawaii,
Figure 49. The GAKI in Hawaii. Like the roofed fence in Japan, the gaki fronting a residence in Hawaii has a solid foundation on top of which are modular panels and a roof. Hollow tile has been substituted for a stone base and wood for clay in the panels. The Japanese model would not be painted and this type is reserved for temple use. 1976.
the tendency to fence in residential lots is increasing, and the motivation seems to be the same as in Japan. The essential difference is that the fence in Hawaii is less costly and exhibits less handicraft in design.

Statistical data indicate that cost is the most important criterion in the reaction to the gaki, for even the desire to have it has little significance when money is lacking. Interviewees have had it as a part of their house only 3% of their time in Hawaii. Five per cent have it as a part of their present house, and 26% would include it as a feature in a new house.

CONCLUSION. The probability is that the gaki will be seen infrequently as a part of the AJAH house. This trend could be checked if the gaki becomes widely established as a status symbol, as it is now for a small number of interviewees. Even then family incomes must rise to support this particular expression of status.

r. Niwa (Figures 50 and 51)

The garden shown in Figure 50 has the customary trimmed trees and stone lantern and makes use of the available space, but differs significantly from the traditional Japanese garden. It is placed in front of the house rather than in the back, and takes the wooden column from the indoor tokonoma and arbitrarily places it near the garden. Too many items are crowded into the space and the arrangement seems more happenstance than planned.
Figure 50. The NIWA in Hawaii. This garden has the traditional trimmed trees and stone lantern. However, it is in front of the house instead in the back or on the side. Moreover, it takes the wooden column from the indoor tokonoma and arbitrarily places it outside. 1976.
Figure 51. The NIWA in Hawaii. These garden stepping stones have been placed according to traditional rules concerning size, position, height, and rounding of edges. 1976.
The stepping stones in Figure 51 have been placed according to the traditional patterns known in Japan. Rules governing appropriate size, alternating placement to accommodate a person's normal walk, proper height above the level of the grass, and rounding of edges have been strictly observed.

By and large the decorative gardens in Hawaii lack the artistry in components and composition evident in the Japanese model. Items may be placed in a row, rocks may be quite disproportionate in size in the total setting, the garden as a whole may need trimming and pruning to make it appear neat, and too many items may be used.

A fundamental difference between the Japanese and the Hawaii versions is that the former are placed to be enjoyed from interior rooms facing the verandah; the latter usually cannot be seen from the house unless the viewer stands at a window or door at the front of the house. Even then parts of the garden may be so close to the side of the house that only a person outside can see them. In these cases frequently there is open lawn space that could have been used in a plan that coordinated garden and house designs.

Even though it differs from the traditional Japanese, in the ways mentioned, the garden in Hawaii is a source of pleasure to its owner and an important part of the AJAH house. The pleasure stems from the aesthetics the creator sees in his creation, and from sharing in the compliments
in Hawaii about "beautiful Japanese gardens". A frequent response during the survey was that the individual relaxes by walking and working in the garden at the end of the work day.

The garden is popular in Hawaii, whether or not it meets the most exacting of aesthetic standards. Interviewees have had it as part of their houses for 27% of the time they have lived in Hawaii. Thirty-six per cent have it as part of their present house, and 71% would include it as part of a new house.

CONCLUSION. The aesthetic experience, ethnic identification, and a mild climate are the sources of support for the garden in Hawaii. There was no reason discovered why these forces might weaken and the garden decline seriously in popularity.

This chapter has presented detailed information about the presence of minka features in Hawaii. The information permits a review of the primary questions that prompted this research.

Have the Japanese immigrants and their progeny continued to use minka features in their Hawaii residences?

The simplistic answer is yes, for all features were used during the years 1882-1976, and all appear in their houses today; only the extent of usage varies from feature to feature. But this answer does not account for the
variances in usage, nor for the differences in features actually had and those desired. The complexity of an adequate answer to this question is apparent.

Rather than select an arbitrary criterion to judge each feature as having been persistent or not, it is more fruitful to this study to group the features into three categories based upon the extent of their usage:

**Most persistent:** zabuton seat cushion, futon bedding, family altars and shrines, tatami and goza floor mats, getabako shoe storage facility, and furo bath.

**Moderately persistent:** verandah, genkan guest entrance, niwa garden, iri-moya roof, chigai-dana art storage alcove, and ventilation opening in the gable and gegyo.

**Least persistent:** lattice, shōji and fusuma sliding panels, tokonoma aesthetic center, ramma ventilation panel, umanori ridge cover, and gaki roofed fence.

Will these features continue to be used:

The approach used to answer this question is the interviewees' statement of features they desire and would include in a new residence. Their responses are reflected in these categories:

**Most likely to persist:** zabuton seat cushion, getabako shoe storage facility, furo bath, niwa garden, shōji and fusuma sliding panels, tokonoma aesthetic center, futon bedding, and family altar and shrines.

**Moderately likely to persist:** genkan guest entrance,
verandah, *chigai-dana* art storage alcove, *tatami* and *goza* floor mats, and *ramma* ventilation panel.

**Least likely to persist:** *iri-moya* roof, lattice, *gaki* roofed fence, ventilation opening in gable, *gegyo*, and *umanori* ridge cover.

The foregoing two sets of classifications are useful as data on features that have persisted, and features that are likely to persist. As such they are only an elementary step in comprehending the story of the *minka* in Hawaii. Knowledge of a pattern that might underlie these classifications would considerably improve our understanding of the similarities and differences between the two sets and relative positions within a set.

There is a pattern. It can be discerned in the relative strengths among the reasons interviewees gave for continuing to use *minka* features. The first step in identifying the pattern is the determination of the associations between features and concepts.

Analysis of interviewee responses disclosed relationships between the concepts of space, religion, aesthetics, utility, and status and the various features. These associations are discussed in the following paragraphs.

With respect to the house, the Japanese concept of space is centuries old in its origins, but the interviews demonstrated that it is applicable to the AJAH today.
The concept involves multiple uses for a given amount of floor space, such as social gatherings, eating, sleeping, and accomplishing household tasks. This intensive use reduces the amount of space needed but requires light-weight, storable furniture and sliding partitions. Among the interviewees, this concept is deep seated and explains their positive feelings for sliding partitions (shōji and fusuma), and compact tables, beds (futon), and seat cushions (zabuton).

That the concept of religion as expressed in Shintoism and Zen Buddhism has been transported to Hawaii is not surprising. Nor is it surprising that these religions have flourished among the AJAH, in view of freedom to practice the faith of one's choice. The pluralism in religions that permits the practice of Shintoism and Buddhism in Japan reconciles the presence of Buddhist altar, Shinto shrine and Christian statue when they appear together in the AJAH home. Unquestionably the concept of religion is influential among the AJAH. As a group the interviewees are quite responsive to the religious impulse of Buddhism and Shintoism and its expression in the home in the form of miniature altars and shrines.

According to Japanese scholars, during the Heian Period (794-1191) there were concepts of aesthetic awareness in Japanese culture, and in ancient Japan there were prototypes of beauty. During the succeeding periods the scholars have
tabulated modal types of beauty representative to the various periods of history. Because this culture has such a lengthy sensitivity to aesthetics, and because this sensitivity has been promulgated by successive generations through traditional patterns, it would be unusual if aesthetic features were not to be found in the AJAH house.

The importance of aesthetics to the AJAH is clear once it is accepted that the concept and the standards for judging are in the mind of the observer. Thus, the same garden in Hawaii could be criticized by a visitor from Japan and praised by the creator or a Hawaii observer. In this light, the AJAH desire for an aesthetic center (tokonoma) and for a decorative garden (niwa) matched with a verandah is encompassed in their concept of aesthetics. Although these features are primarily aesthetic in nature, I have pointed out the religious implications involved in the history of the tokonoma and garden. To the art center, verandah, and garden the AJAH house is now in the process of adding the ramma, fusuma, and chigai-dana as aesthetic features.

In recognition of the problem of definition, this study emphasizes the efficient and inexpensive solution to physical problems, such as ventilation, sleep, and protection from the elements, in its concept of utility. This is not to deny that a utilitarian feature may have an indirect relationship to a different concept. For example, it is
possible that the shoe storage cabinet at the entrance to the house may at one time have been viewed as related to the purification ritual in the concept of religion. However, as stated previously, this paper makes its distinctions among the primary purposes of household features.

Of all features whose original purpose was chiefly utility, the shoe storage facility is outstanding in its popularity with the interviewees. In contrast, the *hakomune* ridge cover is rated low.

The remaining utility features have strengths between these extremes, as rated by the interviewees. Straw floor mats are serving acceptably as floor coverings and may continue to be used extensively. The *ramma* and the art storage alcove are judged acceptable, according to the extent of usage between 1882 and 1976.

The hip-gable roof, lattice, and the functional ventilation opening in the gable are viewed as satisfactory, although it is evident that some interviewees have a faulty understanding of their utility.

Enduring in Japan, but fragile in Hawaii sums up the concept of status as expressed in the history of the *gegyo* pendant and the *umanori* ridge cover in the AJAH house. One would not really expect otherwise. The immigrants to Hawaii in the main were poor and had enjoyed little social status in Japan where the pendant and ridge cover were
status symbols. Moreover, the larger society in Hawaii which received the immigrants had no understanding of the significance of these symbols. Thus, the immigrants had little incentive to perpetuate a practice they had not exercised in their homeland. The fact that any AJAH would include these features in their houses in itself is unusual and is testimony to the persistence of traditions.

The response of one small group of interviewees is called to attention because it represents a reaction to the pressures for acculturation. Ethnic identification is the key to their sustained interest in the distinctively Japanese garden, verandah, hip-gable roof, **furo**, and guest entrance. This force for continuity is disclosed in their declaration "I like them because they are Japanese." These responses were so few in number that ethnic identification is not used as a prevailing concept.

Preceding the discussion of concepts and associated features, this chapter presented the relative strengths of these features, grouped under the headings "most persistent", "moderately persistent", and "least persistent". In addition it was stated that the pattern underlying the ratings could be described.

The pattern that explains the relative strengths of the different house features is revealed in Table 2. Within each of the two lists in Table 2, features are arranged in
TABLE 2. -- Features listed in decreasing order of frequency in houses 1882-1976; and in decreasing order of preference for inclusion in a new house. Concepts associated with retention of features are listed after each feature.

<table>
<thead>
<tr>
<th>1882-1976</th>
<th>Inclusion in a new house</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zabuton (space)</td>
<td>Zabuton (space)</td>
</tr>
<tr>
<td>Futon (space)</td>
<td>Getabako (space)</td>
</tr>
<tr>
<td>Altar/shrine (religion)</td>
<td>Furo (religion)</td>
</tr>
<tr>
<td>Getabako (utility)</td>
<td>Garden (aesthetics)</td>
</tr>
<tr>
<td>Tatami/goza (utility)</td>
<td>Shōji/fusuma (space)</td>
</tr>
<tr>
<td>Furo (religion)</td>
<td>Tokonoma (aesthetics)</td>
</tr>
<tr>
<td>Verandah (aesthetics)</td>
<td>Futon (space)</td>
</tr>
<tr>
<td>Genkan (status)</td>
<td>Altar/shrine (religion)</td>
</tr>
<tr>
<td>Garden (aesthetics)</td>
<td>Genkan (status)</td>
</tr>
<tr>
<td>Iri-moya (utility)</td>
<td>Verandah (aesthetics)</td>
</tr>
<tr>
<td>Chigai-dana (utility)</td>
<td>Chigai-dana (utility)</td>
</tr>
<tr>
<td>Vent/gegyo (utility; status)</td>
<td>Tatami/goza (utility)</td>
</tr>
<tr>
<td>Lattice (utility)</td>
<td>Ramma (utility)</td>
</tr>
<tr>
<td>Shōji/fusuma (space)</td>
<td>Iri-moya (utility)</td>
</tr>
<tr>
<td>Tokonoma (aesthetics)</td>
<td>Lattice (utility)</td>
</tr>
<tr>
<td>Ramma (utility)</td>
<td>Roofed fence (status)</td>
</tr>
<tr>
<td>Ridge cover (status)</td>
<td>Vent/gegyo (utility; status)</td>
</tr>
<tr>
<td>Roofed fence (status)</td>
<td>Ridge cover (status)</td>
</tr>
</tbody>
</table>
decreasing order of popularity and associated with the applicable concepts.

Inspection of the two lists suggests that in each list the features associated with religion and space tend to cluster near the top. Features associated with aesthetics and utility tend to group near the middle of each list, and those associated with the concept of status are near the bottom.

A more precise measurement of relative strengths among concepts is obtained by assigning position numbers from 1 through 18 to the features in each list and then computing an average for each concept. The following order of importance results:

<table>
<thead>
<tr>
<th>Past (1882-1976)</th>
<th>Future (Inclusion in a new house)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Religion</td>
<td>Space</td>
</tr>
<tr>
<td>Space</td>
<td>Religion</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>Aesthetics</td>
</tr>
<tr>
<td>Utility</td>
<td>Utility</td>
</tr>
<tr>
<td>Status</td>
<td>Status</td>
</tr>
</tbody>
</table>

Clearly, in the context of the Japanese experience in Hawaii, their concepts of space, religion, and aesthetics have been the most powerful forces for retention of house features. Utility has been less influential, status the least. The relative strength of each concept is the key to understanding the ranking among the features: those
associated with religion will be high; those associated with status will be low.

This chapter has emphasized the past course of minka features in Hawaii, and their relative popularity. Although useful to an understanding of the AJAH and their traditional house in Hawaii, the method used did not associate the course of the minka with the historical settings out of which that course grew. To give greater depth to our understanding of this house, Chapter IV will examine this area.
CHAPTER IV
The Hypotheses

Chapter III described quantitatively the persistence in traditional house features among the interviewees. In addition it established that the reasons for this phenomenon are consistent with the theory of continuity in material culture formulated in this study. In so doing, Chapter III only summarized the history of the minka in Hawaii during the period 1882-1974. The reactions of the interviewees were not seen in the context of the social and economic conditions that prevailed.

This Chapter examines the behavior of the interviewees in four social and economic settings for these purposes: to better our understanding of their behavior; and to see if hypotheses derived from the theory of continuity would predict their behavior. The evidence critical to testing the hypotheses is drawn from interviews; therefore, the conclusions pertain to the interviewees and not necessarily to all persons of Japanese ancestry in Hawaii.

Hypothesis 1. The first Japanese immigrants to Hawaii, accustomed to a house that they considered superior to the one supplied by the plantation, would tend to build one resembling the minka.

Large scale Japanese migration to Hawaii began in 1885 after the Japanese Government had agreed to voluntary
plantation labor contracts between her citizens and the Hawaiian Government. The terms of the contract should be interpreted in light of the desire of the plantations for inexpensive Japanese labor rather than the more costly labor from Europe or the United States. Of greater significance to this study is the fact that the contract would limit the ability of the immigrants to improve their housing conditions.

The contract stipulated that the immigrants were to work 26 days a month, 10 hours per day at field labor or 12 hours per day in sugar mills. Wages were $9 a month for males and $6 for females, plus a monthly subsistence allowance of $6 and $4 respectively. Living quarters, medical care, and firewood for cooking were free, and rice was guaranteed at less than 5¢ a pound. However, there was compulsory savings of 25% of gross wages earned, and return passage to Japan was at the worker's expense.¹

One interviewee has translated the contract terms into the realities of the typical day for herself and her husband. She arose at 4:00 a.m. to prepare breakfast and a lunch to take to the sugar cane field for their 10 hour work day. Then, upon their return at 6:00 p.m., a fire was built for the community furo and she cooked the evening meal. After dinner she cleaned the house and mended and washed clothing, for water was furnished only between 4:00 and 8:00 in the morning and evening. Between 11:00 p.m. and midnight she
and her husband went to bed. The wife who became pregnant was expected to work until the day before she gave birth, whereupon she had a 70 day rest period with pay at 10¢ per day before she returned to work.

The rigors of the typical day were made somewhat more tolerable by one provision in the contract. Living quarters furnished by the plantation were free. But how did they compare with what the immigrants had known in Japan?

Five of the interviewees in this study arrived in Hawaii prior to 1900. All had known the minka described and pictured in Chapter II.

Four of these minka had from half to two-thirds of the features in Chapter II, but were also noteworthy because of their size. One home was on a residential lot one acre in size. The main house had two ten mat rooms, two eight mat, one six mat, a kitchen, entry room, and a laundry room. It was connected to a second structure containing a large storage area, bath, and toilet. Facing a decorative garden was a verandah the full length of the main building. A former samurai's house combined a shop in front with large family quarters in the rear.

A third minka, one century old, had a kitchen, six additional rooms, outside toilet, bath, a large upper floor for sericulture and a separate storehouse for safekeeping of family valuables against fire. The fourth dwelling was similar, lacking only the valuables storehouse.
In the fifth instance, the interviewee had been born in a two-room house of 240 square feet. Despite family poverty and limited house size, the minka features that space permitted had been included.

The housing these five individuals had known is also representative of that experienced by interviewees who migrated to Hawaii after 1900. These five have been singled out to form a basis of comparison between their houses in Japan and the houses these individuals encountered in Hawaii.

The early immigrants thus appreciated a spacious house which was well constructed and durable. They were accustomed to its sliding interior panels, its ventilation system, protected walkways, sturdy ridge cover, and shōji panels for natural light. Moreover, as owners of community-built houses, they had learned carpentry skills, as would their sons at a later time in Hawaii. (Three-fourths of all male interviewees have had practice in building fences, the furo, sliding panels, lattice, household altar, art alcove, and art storage alcove; some were skilled carpenters.)

The New England type house the immigrants observed in Hawaii was vastly different from the minka (Figure 52). Weight bearing walls, clapboard siding, swinging doors, sash windows, negligible eaves, dormers, central hallway—these features, to mention a few, differed radically from those of the minka. Not that the immigrants would be furnished these houses on the plantation; this house is mentioned because at
Figure 52. Western Style House in Hawaii. The Japanese immigrants in 1885 encountered a style house whose cost was outside their means, and whose architectural features differed radically from those of the minka. Pictured is a Japanese couple outside the Gartly house. Courtesy of Bishop Museum. Photographed about 1885.
a later time the Western style house would win friends among their descendants in Hawaii.

The living quarters the plantation offered to immigrant families was space in the dormitory or long house. This wooden rectangular dormitory had no interior partitions and was intended to house 20 to 30 bachelors who had to use a community bath, kitchen, and toilet facilities. Some families moved into long houses despite the presence of bachelors, and suspended improvised partitions from ropes to obtain a degree of privacy. Interior minka features were maintained as best limited space permitted.

There was an alternative to the long house, the Hawaiian grass shelter, if the immigrants were willing to build it themselves (Figure 53). But this shelter usually had only one source for natural light to enter, the door, and had no interior partitions. Woven mats were spread directly on a platform of crushed coral. Further, there was no ventilation opening in the roof and no cover to protect the thatch ridge.

Some of the early immigrants decided against the long house and the Hawaiian grass shelter. Lacking the money to replicate the minka by 1885 they began to build houses as shown in Figures 54-57. Limited in resources, they incorporated as many traditional features as they could, but the number varied from house to house. As ascertained by this survey the dwellings usually included a hip-gable
Figure 53. Hawaiian Grass Shelter. In 1880 the Hawaiian grass shelter was prevalent. The Japanese immigrants regarded it as inferior to their minka. Some, therefore, chose to build their minka within the limitations of money and time. Kalihi Valley, Oahu. Courtesy of Honolulu Academy of Arts.
Figure 54. Immigrant Housing in Hawaii. Seen are models of minka built about 1885 by Japanese immigrants who rejected the plantation long house and the Hawaiian grass shelter. The hip-gable roof, overhanging eaves, and securing of thatch with bamboo were characteristics of the minka the immigrants included in these dwellings. Photographed by Charles Furneaux, Bishop Museum Collection.
Figure 55. Immigrant Housing in Hawaii. In preference to the long house and Hawaiian grass shelter, the 1885 immigrants replicated as much of the minka as their funds and time permitted. The hip-gable roof, ventilation opening in the gable, bamboo strips to secure thatch, extended eaves, and wooden furo are duplicated in these houses. Photograph by Charles Furneaux, Bishop Museum Collection.
Figure 56. Immigrant Housing in Hawaii. Rejecting the plantation long house and the Hawaiian grass shelter, the 1885 immigrants built a model as similar to the minka as time and funds allowed. The iri-moya roof, wooden furo, and bamboo lattice are apparent in this Charles Furneaux photograph in the Bishop Museum Collection.
Figure 57. Immigrant Housing in Hawaii. As their alternative to the plantation long house and the Hawaiian grass shelter, the immigrants in 1885 duplicated as much of the minka as time and money permitted. The house on the left uses thatched roofs secured by bamboo strips, extended eaves, and lattice over the ventilation opening in the gable. Photograph by Charles Furneaux, Bishop Museum Collection.
roof with ventilation opening protected by lattice, extended eaves, windows with lattice for natural light, bindings or strips of wood to secure the thatch, and such kind of furo as could be improvised.

One interviewee described as much as she could remember of their thatch house built by the family before 1900. Estimated to have been at most 18 feet by 27 feet, the rectangular frame consisted of posts and beams of unfinished lumber and bamboo cross members, all lashed together with dried hau bark, for nails were used only in the flooring. Thatch of Hawaiian grass was tied to this structure. The family made multi-purpose use of the floor space, with mosquito netting substituting for the more expensive interior sliding partitions during the night. The one entrance doubled in purpose as family and guest entrance. It led to the dirt floor area which had steps to the raised floor section used for eating and sleeping. The door to the house consisted of bamboo rods tied together with rope of hau bark. Cooking was done on a Japanese clay stove in a kitchen structure about 25 feet from the house.

The house the immigrants built was considerably short of being a minka. But judgment about the quality of this house should take into account the long work week and the low pay given the immigrants. With little time to devote to construction and even less money, they produced a house that they considered superior to the long house and the
Hawaiian grass shelter. Within this house they sat on zabuton, slept on futon, and installed their family altar. Close at hand, using materials they had to improvise it, was a furo.

CONCLUSION. The early immigrants regarded the long house offered by the plantations and the Hawaiian grass shelters as inferior to the minka. They had the incentive and skills to build a house resembling the minka within the resources available to them and did so. The number who built these houses could not be determined.

Hypothesis 2. Sharing architectural features with the minka, the temple would tend to sustain interest in the traditional house during a period when immigrants did not include its external features in their dwellings.

The thatched house the immigrants built to resemble the minka appeared on the plantations prior to 1900. It virtually disappeared in Hawaii between 1900 and 1920. Interviews support the conclusion that for this later period house interiors and living style remained Japanese, but most exteriors lost their distinctive Japanese appearance. Yet the "Japanese look" somehow survived and is seen frequently in Hawaii today. The interaction of several social and economic forces helps explain this direction taken in housing.

The aspirations the immigrants shared to accumulate wealth and retire in Japan were frustrated by the low wages
the plantations offered in comparison with the cost of living. Discontent led to an exodus from the plantations when the opportunity presented itself. Between 1902 and 1922 the Japanese plantation population dropped from 31,000 to 17,000 despite an increase of 62,000 immigrants between 1908 and 1924.³

Some Japanese who moved to the city started small businesses and lived in the rear of the structure (Figure 58). Others sold their services as servants in Caucasian households, as clerks and carpenters, and as ordinary labor. It was common practice for servants to live where they worked, in which case their dwellings had no Japanese features (Figure 59). Those who rented living quarters normally were not permitted to modify the external features of the house, which were Western in design.

Not all who moved to the city remained low on the economic scale. Initially capital resources were devoted almost exclusively to expanding their businesses and educating their children. Families tolerated overcrowding, lack of privacy, and inconvenient kitchen and sanitation facilities as the price for a better future. By 1912, some families had managed to improve their housing. Available evidence shows that a few among these families chose houses that were Western in appearance at the expense of exterior minka features (Figures 60 and 61).

Some workers who left the plantation were not
Figure 58. Immigrant Housing in the City. Some of the Japanese immigrants who left the plantations for the city started small businesses and lived in the rear of the structure. Courtesy Archives of Hawaii. About 1905.
Figure 59. Immigrant Housing in the City. Some of the Japanese immigrants who left the plantations for the city became servants. It was common practice for household servants to live where they worked, in which case their houses had no minka features. Shown are the S.N. Castle home and Japanese servants, Manoa Valley, Honolulu. About 1910.
Figure 60. Immigrant Housing in the City. The Western style house of Dr. Katsuri had no external minka features. This house was built in 1899 and purchased by Dr. Katsuri in 1912.
Figure 61. Immigrant Housing in the City. A few of the immigrant families had enough money to build houses in the city. As seen in this Figure and Figure 60, some chose the Western style with no external minka features. Courtesy Honpa Hongwanji Collection. Period 1900-1910.
interested in the city. Having tilled the land in Japan, they became independent farmers in Hawaii. Of these some accumulated enough money to build farm houses. One such house, in the Western style of the time, is shown in Figure 62. It is devoid of external minka features.

The Japanese who remained on the plantations gradually were furnished replacements for their long house or dormitory. The type and quality of the replacement dwellings were decisions made by each plantation, which accounts for the differences reported by the interviewees.

Whether it was a one, two, or four room structure, the single family wooden plantation house was quite dissimilar in its appearance to the minka (Figure 63). Plantation rules prohibited any major modifications, and occupants who complained were told to accept it or to "get out". Practical interior features like the zabuton and the futon, of course, persisted.

The multiple-family wooden plantation house resembled a rectangular box. Although the occupants maintained as many Japanese interior features as income and space permitted, the exterior was strictly Western. Regardless of size of family, the space allocation normally was one bedroom and one living room, with a community kitchen, laundry area, bath, and toilet for each multi-family dwelling. The size of these buildings varied; the largest reported in this study housed 15 families, with only one
Figure 62. Immigrant Housing in Rural Areas. In some cases immigrants who left the plantations chose to become independent farmers. Of these, some earned enough money to build farm houses. One such house built in 1908 is shown; it is devoid of external minka features. Courtesy Iris Sakamoto. Waimalu, Oahu.
Figure 63. The Plantation House. The building shown now serves as a single family unit. Originally it was a part of a long house, constructed in 1900 and sectioned into three separate units about 1915. As a long house it served three families despite the lack of internal partitions. Photographed in 1968. Archives of Hawaii.
room, 9 feet by 12 feet, assigned to a family.

Another dwelling of the period 1900-1920 was the camp house. A camp was an ethnic community. In some cases the members of the camp worked on plantations and lived in plantation houses. In other instances, camp members bought land on which they built their own houses, and leased land on which they grew sugar to sell to the plantations. Camp houses built by the immigrants of necessity were made of inexpensive scrap materials. Although the builders favored the minka, the most they could afford to include in exterior features were the ridge cover, extended eaves in some cases, lattice, the iri-moya roof in some cases, and bamboo strips to secure thatch. Although these houses had minka features, they tended to look as much Western as Japanese (Figures 64-67).

The introduction of the Western style plantation house, the inability of most Japanese city dwellers to afford a house, and the desire of financially able city dwellers and farmers to imitate the house of the Caucasian were strong influences toward a Western domestic architecture. Had there been no offsetting forces there might be no image of the minka in Hawaii today.

The first Buddhist temple in Hawaii, shown in Figure 68, was completed in 1889. It appears to be a converted plantation structure and lacks the traditional features.
Figure 64. Japanese Houses at Camp Stable near Hilo, Hawaii, 1910. These houses are predominantly Western in form. The immigrants used such materials as they could acquire. Thatch, ridge covers, and bamboo to secure the thatch are the links to the minka.
Figure 65. Japanese Houses at Camp Stable, near Hilo, Hawaii, 1910. Thatch, lattice, ridge cover, and iri-moya roof are Japanese in origin but these are insufficient to label it a Japanese style house.
Figure 66. Japanese Houses at Camp Stable, near Hilo, Hawaii, '910. Only the ridge covers suggest that these houses were built and lived in by Japanese immigrants.
Figure 67. Japanese Houses at Camp Stable, near Hilo, Hawaii, 1910. The ridge cover, window lattice, and hisashi roof in these houses are carry-overs from the minka.
Figure 68. First Buddhist Temple in Hawaii. The first temple was completed in 1889. It appears to be a converted plantation house and lacks the traditional features that the temple shares with the *minka*. Courtesy of Honpa Hongwanji Collection.
However, by 1900 the model familiar to the immigrants had begun to appear in Hawaii. The desire to retain their Japanese employees had prompted planters to donate land on the plantations and in the villages to Buddhist religious orders. By the end of 1906 more than 30 temples had appeared throughout the territory.\(^4\)

Temples brought not only the comfort of religion; they were a daily reminder of Japanese architecture. The practical difficulties in constructing temples in Hawaii are revealed in Figures 69-71. Such compromises as a Western style roof, or windows, or siding usually meant insufficient funds or an insufficient number of carpenters trained in temple construction. One interviewee mentions receiving this specialized training before coming to Hawaii; another states that he returned to Japan long enough to learn it. The more significant observation from the point of view of this study is that temples made tangible such external features as the hip-gable roof, the extended eaves and covered walkway, the vented gable, the decorative ridge beam, and shōji.

Another development that helped to sustain the external features of the minka was the coffee farm built principally in the Kona area on the island of Hawaii. Interviewees who had lived on coffee farms reported that their houses had been built by Japanese carpenters who deviated from the minka in one significant respect. In order to dry coffee
Figure 69. Buddhist Temple in Hawaii. Although Hunter calls this building the first temple in Hawaii, the Hilo Honpa Hongwanji place of worship, the Honpa Hongwanji files accord this distinction to the structure in Figure 68. This temple helped sustain the hip-gable roof, the extended eaves and covered walkway, the ridge cover, and the vented gable when immigrants were not including them in their houses. About 1890.
Figure 70. Buddhist Temple in Hawaii. Ridge cover, hip-gable roof, extended eaves, elaborate geyko, and covered walkway are the minka features this temple helped to sustain when immigrant houses were largely Western in exterior appearance. About 1905.
Figure 71. Buddhist Temple in Hawaii. Because of limited funds and availability of component parts, this temple mixes Western windows, in the rear, and shōji panels, in the front. The hip-gable roof, carved gegyo, extended eaves, and ridge cover are other house features this temple helped to preserve in Hawaii. Pearl City Mission. About 1910.
beans, the farmers needed a flat surface exposed to the sun. Hence a part of the roof was made flat. In an ingenious arrangement, the roof was on wheels that moved on tracks supported on posts. In bad weather the roof remained in position to protect the house. In good weather the roof was rolled onto the elevated tracks beside the house to expose a flat surface to dry the beans.

The remaining source of support for the "minka look" that was revealed in this survey came from an unexpected quarter. Several well-to-do Caucasian families became interested in the Japanese house and reproduced it in Hawaii. One family paid passage for Japanese carpenters to insure that the building would be authentic. Figures 72-73 show the Damon and Adams houses, built about 1910, that include exterior and interior minka features.

CONCLUSION. The presence of many Buddhist temples scattered throughout the territory on plantations and in urban areas did help to keep alive those external features they shared with the minka. However, our understanding of the history of the minka is broadened more by the realization that there were complex social and economic factors operating. In some circumstances these factors channeled attention to the Western house; in others they preserved the external appearance of the minka.

Hypothesis 3. Despite repressive measures directed against them as an ethnic group, from 1920 through 1945,
Figure 72. The Japanese House in Hawaii. The S. M. Damon tea house, photographed in 1908, helped to maintain the image of the minka when few immigrants were able to do so. Courtesy Archives of Hawaii.
Figure 73. The Japanese House in Hawaii. The Adams house near Diamond Head displays both interior and exterior features of the *minka*. Courtesy of Eaton College Collection. About 1910.
the Japanese in Hawaii would tend to retain house features representing their traditional concepts of religion, aesthetics, and spatial organization of the house.

This discussion addresses the effects upon certain house features during the period 1920-1945, when discrimination against persons of Japanese ancestry was intense.

The history of the minka related in Chapter II establishes the traditional purpose of each feature. That information is reflected in the following associations between concepts and house features:

- Religion: altar and shrine, furo.
- Aesthetics: tokonoma, garden, verandah.
- Spatial organization: shōji/fusuma, futon, zabuton.

Although Chapter III noted a tendency for the furo, chigai-dana, and ramma to be used for aesthetic reasons, the survey demonstrated that this new purpose has not supplanted the original ones. Consequently these features are not associated with the aesthetic concept.

The radical discrimination experienced by persons of Japanese ancestry in Hawaii is well documented and the story has been told numerous times. For purposes of this study only a brief summary of discrimination during three historical periods is included. The period this hypothesis examines is 1920-1945. Data are also provided for the years 1900-1920 and 1945-1976 to supply a base line for interpreting the changes in statistics that occur in the
period 1920-1945. Assessment of the effects of discrimination will be based on a comparison of the amount of time the features listed above were included in interviewees' houses during these periods.

During the years 1900-1920 the immigrants suffered discrimination in pay and they were not accepted as social equals among the different ethnic groups. However, there was no sustained threat to their functioning as an ethnic group.

When the U.S. Census of 1920 tallied persons of Japanese ancestry as comprising 42.7% of the Hawaii population, fears arose that they would dominate government and industry in the territory. The years 1920-1945 saw measures intended to subordinate and weaken them as an ethnic force in Hawaiian life. This design was evident in such acts as these: regulation of the Japanese language press; the attempt to end the Japanese language school system; efforts to deny homestead lands to citizens of Japanese ancestry; the Territorial Governor's request to a U.S. Congressional Committee for authority to limit an alien nationality to 25% of the population; and internment of citizens of Japanese ancestry during World War II.

In sharp contrast, the period 1945-1976 was relatively free from discrimination. Certainly there were no measures of the type, and with the intent, of those from 1920-1945.

Survey data in Table 3 show the percentages of time
the interviewees had the features in their houses during the three periods described. The comparison intended is the presence of features during a relatively discrimination-free period (1900-1920) and their presence during a period of intense discrimination (1920-1945).

The data in Table 3 reveal only a part of the AJAH reaction to discrimination. Analysis of the interview records for each year in the period 1920-1945 shows a consistent response: the AJAH did not relinquish religious features at any time because of discrimination, or because of the inroads of Christianity cited by Hunter (see Chapter I).

The story is different with respect to aesthetic and space features. Many AJAH did alter or eliminate the tokonoma, garden, verandah, shōji, and fusuma during the war years, 1941-1945. The effect was great enough to place their statistics for the entire period 1920-1945 below the statistics for 1900-1920. Only the considerable popularity of the verandah prior to 1941 enabled it to place higher in the period 1920-1945 than in the period 1900-1920.

This concession to discrimination was a part of a general reaction of the AJAH to appease the strong anti-Japanese feeling that existed. Interviewees describe it as a time of surrendering, hiding, destroying or sending back to Japan such objects as samurai swords, pictures of the Japanese emperor, kakemono wall scrolls, Japanese art
TABLE 3. -- Effects of Discrimination. Comparative usage of religious, aesthetic, and space features during a period of intense discrimination 1920-1945, and the immediately preceding and succeeding periods. Usage expressed in percentages.

<table>
<thead>
<tr>
<th>Feature</th>
<th>1900-1920</th>
<th>1920-1945</th>
<th>1945-1976</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shrine/altar</td>
<td>78</td>
<td>83</td>
<td>70</td>
</tr>
<tr>
<td>Furo</td>
<td>70</td>
<td>70</td>
<td>68</td>
</tr>
<tr>
<td>Tokonoma</td>
<td>22</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Garden</td>
<td>26</td>
<td>19</td>
<td>37</td>
</tr>
<tr>
<td>Verandah</td>
<td>29</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td>Shōji/fusuma</td>
<td>19</td>
<td>6</td>
<td>15</td>
</tr>
<tr>
<td>Futon</td>
<td>93</td>
<td>97</td>
<td>77</td>
</tr>
<tr>
<td>Zabuton</td>
<td>93</td>
<td>94</td>
<td>84</td>
</tr>
</tbody>
</table>
objects, and kimonos.

Small wonder then that the interviewees would relinquish such obvious Japanese features as the tokonoma, fusuma, and the exterior, highly visible garden, verandah, and shōji. Some interviewees who had been interned carried the reaction one step further: they decided it prudent to adopt the "American house" when they resettled in Hawaii in 1945.

CONCLUSION. In the face of discrimination, persons of Japanese ancestry persisted in the use of house features related to religion. Only during the intense anti-Japanese atmosphere of World War II did they attempt to placate public suspicions of disloyalty by using less frequently the obvious and highly visible features associated with their concepts of aesthetics and space.

Hypothesis 4. The Japanese immigrants and their progeny, despite prolonged exposure to the Western house in Hawaii, would tend to desire traditional features in their houses.

This hypothesis is concerned with the persistence of traditions in 1976 and their likely strength in the future among three successive generations of Japanese ancestry whose members have had prolonged exposure to the Western style house in Hawaii. The statistics in Chapter III combine the responses of all interviewees; the statistics in this discussion will present responses by generations.
The testing of this hypothesis is based upon responses to questions on the features in the present houses of the interviewees, and those features desired enough to be included in a new house.

Of the 153 participants in this study, the 45 who were involved in the Fall, 1975 survey were not asked these two questions. They responded to an open-ended request to describe their houses and any aspects they considered interesting or unusual. All of the 108 interviewees in the Spring and Fall, 1976 surveys were asked the questions. Their responses are the basis for Tables 4 and 5. The 41 issei in the 1976 surveys range in age from 52 to 94. The nisei number 43, ages 43 to 77. The 24 sansei who participated range from 33 to 60 years of age.

Residency in Hawaii for these three generations spans the period 1882-1976. The progeny, that is the nisei and the sansei, have lived in Hawaii from 1899 through 1976. All interviewees have had years to react to the Western house and to decide upon the kind of house they desire.

Within the scope of this hypothesis, one measure of the strength of traditions is the percentage of each generation who have each feature in their present houses. The measure is imperfect because it does not allow for persons who want a feature but cannot afford it, or for persons who acquire a feature they do not want as part of a house they buy. Nevertheless, the statistics are relevant
to the hypothesis and provide some insight about the three generations.

Table 4 reports the percentages of each generation having minka features in their 1976 houses. According to the data, no generation has completely rejected any feature. Features associated with religion, aesthetics, and spatial organization are quite popular with each generation. It seems warranted to conclude that despite the pervasive influence of acculturation, traditional features have persisted among all generations.

The similarities among responses by the three generations are pronounced. The highly popular features are the same. One cannot conclude that either the nisei or sansei have rejected the house traditions of the immigrants.

Another measure is available to assess the persistence of traditions, particularly as persistence applies to the future. The assessment is based on the desires of interviewees for features and their intention to include them in a new house.

Table 5 records the percentage of each generation who desire traditional features and would include them in a new house.

Of these 23 features, 15 are desired by 50% or more of the issei; 8, by 50% or more of the nisei; and 9, by 50% or more of the sansei. If the criterion is set at 20%, the issei desire all features; the nisei, 21; and the sansei, 19.
TABLE 4. -- Effects of Acculturation. Percentages of the issei, nisei, and sansei generations having minka features in their present houses.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Issei</th>
<th>Nisei</th>
<th>Sansei</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shōji/fusuma</td>
<td>18</td>
<td>26</td>
<td>28</td>
</tr>
<tr>
<td>Ramma</td>
<td>5</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>Tokonoma</td>
<td>17</td>
<td>12</td>
<td>25</td>
</tr>
<tr>
<td>Chigai-dana</td>
<td>20</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>Futon</td>
<td>86</td>
<td>69</td>
<td>77</td>
</tr>
<tr>
<td>Altar/shrine</td>
<td>86</td>
<td>55</td>
<td>50</td>
</tr>
<tr>
<td>Zabuton</td>
<td>90</td>
<td>79</td>
<td>81</td>
</tr>
<tr>
<td>Tatami/goza</td>
<td>47</td>
<td>41</td>
<td>24</td>
</tr>
<tr>
<td>Furo</td>
<td>71</td>
<td>65</td>
<td>59</td>
</tr>
<tr>
<td>Genkan</td>
<td>30</td>
<td>22</td>
<td>58</td>
</tr>
<tr>
<td>Getabako</td>
<td>71</td>
<td>71</td>
<td>78</td>
</tr>
<tr>
<td>Vent/gegyo</td>
<td>10</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>Iri-moya</td>
<td>10</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>Lattice</td>
<td>7</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>Verandah</td>
<td>22</td>
<td>36</td>
<td>33</td>
</tr>
<tr>
<td>Ridge cover</td>
<td>17</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>Roofed fence</td>
<td>8</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Garden</td>
<td>37</td>
<td>40</td>
<td>33</td>
</tr>
</tbody>
</table>
TABLE 5. -- Effects of Acculturation. Percentages of the issei, nisei, and sansei generations who would include minka features in a new house.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Issei</th>
<th>Nisei</th>
<th>Sansei</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shōji/fusuma</td>
<td>67</td>
<td>55</td>
<td>66</td>
</tr>
<tr>
<td>Ramma</td>
<td>43</td>
<td>34</td>
<td>35</td>
</tr>
<tr>
<td>Tokonoma</td>
<td>69</td>
<td>52</td>
<td>65</td>
</tr>
<tr>
<td>Chigai-dana</td>
<td>60</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>Futon</td>
<td>86</td>
<td>44</td>
<td>57</td>
</tr>
<tr>
<td>Altar/shrine</td>
<td>74</td>
<td>55</td>
<td>51</td>
</tr>
<tr>
<td>Zabuton</td>
<td>88</td>
<td>64</td>
<td>87</td>
</tr>
<tr>
<td>Tatami/goza</td>
<td>54</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Furo</td>
<td>89</td>
<td>70</td>
<td>69</td>
</tr>
<tr>
<td>Genkan</td>
<td>76</td>
<td>42</td>
<td>45</td>
</tr>
<tr>
<td>Getabako</td>
<td>78</td>
<td>67</td>
<td>87</td>
</tr>
<tr>
<td>Vent/gyogyo</td>
<td>29</td>
<td>27</td>
<td>16</td>
</tr>
<tr>
<td>Hip-gable roof</td>
<td>22</td>
<td>22</td>
<td>40</td>
</tr>
<tr>
<td>Lattice</td>
<td>27</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>Verandah</td>
<td>62</td>
<td>39</td>
<td>57</td>
</tr>
<tr>
<td>Ridge cover</td>
<td>24</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Roofed fence</td>
<td>36</td>
<td>22</td>
<td>21</td>
</tr>
<tr>
<td>Garden</td>
<td>76</td>
<td>70</td>
<td>66</td>
</tr>
</tbody>
</table>
The percentages in Table 5 are strikingly higher than those in Table 4. They indicate the high probability that all three generations will continue to include traditional features in their houses when the opportunity presents itself. Features associated with religion, aesthetics, and spatial organization are quite popular with all generations. As might be anticipated from the experience of other immigrant groups in the United States, the percentages for the issei are higher than those for either the nisei or sansei.

No clear pattern emerges in comparing the responses of nisei and sansei. In some instances the differences in percentages for nisei and sansei in choosing a feature are minimal. In other instances the percentage of nisei choosing a feature is notably higher than the percentage of sansei; in other instances this is reversed. More notable is the consistently higher percentage of issei desiring a feature than that of either nisei or sansei.

CONCLUSION. Other than the functional ventilation opening in the roof, the ridge cover, and the roofed fence, minka features appear to be desired enough by all generations to justify predicting that they will continue to be seen in AJAH houses. In this study, the "third generation" thesis does not hold for traditional house features. The nisei have not abandoned their traditions, and the sansei, in contrast, have not returned to them. Rather, both
generations desire features of their traditional house, although in smaller numbers than the issei.
CHAPTER V
Conclusion

To facilitate interpreting the findings of this study, this final chapter will open with a restatement of purpose and a summary of the applicability of theory to the Japanese experience in Hawaii. The concluding section will present subjects for further research and implications for housing in Hawaii.

The literature search led to my commitment to investigate dwelling features and the place of the minka in the ethnic history of Hawaii. The search suggested that a systematic investigation could contribute to our understanding of the dwelling as material culture. I could find no theoretical model comprehensive enough at once to interpret dwelling features in terms of the concepts of a society; to discern the relative strengths of these concepts in the frequency with which features are included in dwellings; and to relate change to the process of continuity. In short, the opportunity was present to formulate and validate a theory on the persistence of house features as material culture. In so doing, a study could also add insights to the psychology of migration in the state and provide a theory and a measuring instrument for use with other ethnic groups in Hawaii.
The empirical data obtained during this study establish that the interviewees have maintained their traditional dwelling features, although in varying degrees, since the senior member arrived in Hawaii in 1882. According to their statements, they would have had these features more often had family budgets permitted. When judged by their intention to include features in a new house, the interviewees clearly will not reject any of the 23 minka features studied in this research.

The evidence in this study supports the theory of continuity as it applies to the AJAH. Concepts are associated with and are represented in the traditional dwelling features the interviewees continue to use and to desire. These concepts, listed in the order of influence they exert among the AJAH, pertain to religion, space, aesthetics, utility, and status.

During the century the AJAH have resided in Hawaii, events happened that they perceived as concerns. The AJAH reaction with respect to house features varied, as was seen in the discussion of the hypotheses.

Faced with limited income and housing they viewed as inferior to what they had known, the immigrants understandable were concerned with obtaining the quality and type of housing they had had in Japan. In replicating the limited number of minka features they could afford in the houses that they built for themselves, they involuntarily and
temporarily excluded features to which they later returned (Hypothesis 1).

When labor contracts with the plantations expired, the immigrants became concerned with improving their financial lot and adopting Hawaii as their home. These concerns established the priorities in the use of their funds, and construction of the dwelling with minka features had to be postponed. During this period, the Buddhist temple served to sustain the immigrants' interest in a later return to their traditional house, although some adopted the Western style house (Hypothesis 2).

The atmosphere of discrimination during the period 1920-1945 was an event of considerable concern, for it threatened the ethnic entity of the AJAH. Yet there was no adverse effect upon the prevalence of religious features in AJAH houses; discrimination may actually have reinforced the intentions of the AJAH to retain them. On the other hand, the intense anti-Japanese feeling from 1941-1945 inhibited the AJAH: they curtailed their use of obviously Japanese exterior features (Hypothesis 3).

Hypothesis 4 reveals that the AJAH traditions concerning the dwelling are strong. Acculturation has not induced the AJAH to completely reject any minka feature; nor has it influenced either the nisei or the sansei generation to substitute the Western house for the house the issei brought to Hawaii. Yet acculturation has modified permanently the
concepts of aesthetics and status as represented in house features, as has been seen.

Exploring the concept of change expressed in the statement of theory has revealed continuity to be a complex process guided by change as well as by conformity. Within the story of continuity is a story of change in rationale through acculturation which, when recognized, enhances our understanding of the house as material culture.

Historically, certain minka features had their utilitarian purposes. Although statistics have measured the extent to which features have been used, statistics overlook a point that was discovered: features are being used for purposes different from the original. For example, frequently the art storage alcove is serving as a display place to supplement or replace the tokonoma; ramma ventilation panels are being thought of as aesthetic objects; the pseudo-ventilation opening in the gable is decorative.

Not only utility features are changing in their purpose. Although the garden and verandah are desired primarily for aesthetic reasons, some interviewees want them because they regard these features as distinctively Japanese. The furo may become a status symbol, an interpretation quite different from its original religious symbolism.

Photographs reveal a trend that the interviewees themselves had not sensed: the concept of aesthetics is
undergoing considerable change. The tokonoma originally was an integral unit consisting of hanging scroll, one or two art objects, flower arrangement, and wooden column. Today the tokonoma may be crowded with objects, and the scroll and wooden column placed in other locations in the house. In the case of the verandah and garden, the former was intended as an open wall where indoors merged with outdoors, and the latter could be viewed from the interior of the house or the verandah. The garden itself was a part of the total house design and was at the back or side of the house. Contemporary verandahs may be filled with potted plants that deny a view outside and the use of the verandah as a walkway. The garden now may be in front of the house and visible only to the person standing at a window or door or outside, suggesting that it is intended as much for the passerby as the occupant.

With the major exception of the modular system, the imprint of technological change is on most minka features in Hawaii. Protective finishes, such as varnish and paint, coat most of the wooden components, and plastic and glass are taking the place of translucent paper made from natural materials, as in the shōji panel. Synthetic fibers are replacing cotton in seat cushions and the futon quilt. The thatch roof has disappeared in favor of treated wood shingles, and lattice may be made of artificial bamboo or metallic strips instead actual bamboo or wood.
Stepping stones in a garden or verandah may be of molded concrete. Overall, handicraft is giving way to machine manufacture, whether it be cushions and quilts or panels and furo.

The incongruous aspect of technology and its relationship to the minka in Hawaii is that the modular system of design has not been applied to houses in Hawaii with minka features. Why has a system with all the advantages described in Chapter II not been adopted?

The interviews produced no answer to the question. Only by extensive inspection of houses with minka features did I discover a consciousness among home builders that their minka houses call for the modular system. Interestingly enough, what has resulted is a pseudo-modular system using dimensions peculiar to a particular house rather than the classic 6 feet by 3 feet rectangle. Figure 74 illustrates the traditional modular design in Japan. Figure 75 shows a similar compartmentalization pattern in Hawaii, using dimensions particular to that house. Because so many AJ'H houses combine both Western and minka features, adoption of the authentic modular system is unlikely until manufacturers and builders are willing to apply it to both styles of features.

SUGGESTIONS FOR FURTHER RESEARCH

During the course of this research, topics for further
Figure 74. Modular System. An example of the traditional modular system present in the compartmentalization pattern on the wall of this minka. Magariya (combined dwelling and stable), Toyonaka Village, Osaka, Japan, 1972.
Figure 75. Modular System. An example in Hawaii of an improvised modular system with dimensions particular only to this one compartmentalization pattern. 1975.
study suggested themselves. Four of these would expand our knowledge of material culture and give more perspective to this study. They therefore are suggested for investigation.

1. The authors whose views on continuity were surveyed in this study are products of Western culture. With the exception of Rapoport, Fuchs, and Earhart, they are generalizing about the Western style house and Western values.

A theory of continuity with origins in Japanese culture might produce a different interpretation of the Japanese experience. Specifically, has the family of Japanese ancestry in Hawaii inculcated traditions of dwelling design in its children? If so, through what mechanisms in the day-to-day life of the family? Some possibilities come to mind.

The fundamental values of the Japanese family stress religion and four principles that flow from Buddhism. These are ethnic pride in Japanese things; a sense of obligation to meet the desires of family, superiors, and community; fear of failing to meet the responsibilities expected of them; and a desire to protect the honor of the family. These principles engender conformity and pride in Japanese traditions, including the house.

Within the family, the teaching of handicraft skills has a potential for inducing acceptance of housing traditions. The pride of accomplishment at building a shōji or
making a futon, especially when reinforced by parental compliments, suffuses the learning experience and the material object becomes associated with pleasure.

The teaching of traditions within the family circle can contribute to an enduring appreciation of house features. Religion has its expression in the altar, shrine, and furo. Instruction in the concept of beauty can consist of applied learning in the care and arrangement of the tokonoma, verandah, and garden. These features thus can become associated with the satisfaction of self-expression.

The influence the wife exerts toward acceptance of house features has already been noted in this study. An analysis of the functioning of the family in inculcating traditions would be incomplete without an assessment of her role.

2. An investigation to determine the role of agents other than the family in preserving house traditions is in order.

According to the 1970 United States Census, 28% of the population in the Hawaii Kai section of Honolulu were of Japanese ancestry. Yet an inspection of the area showed that approximately 60% of the family dwellings had one or more external features of the minka. Today persons trained to identify these external features can see them in many houses throughout the state. Such houses outnumber the families of Japanese ancestry. What accounts for
this difference?

In 1976 approximately 50% of all general contractors on the island of Oahu were of Japanese ancestry. The role of these contractors in preserving both external and internal minka features should be studied, especially as the features proliferate in major housing developments.

Interviews with contractors of Japanese ancestry could determine the process whereby these features have been included in the design of houses in Hawaii. Is it the expression of Japanese carpenters become contractors who repeat features they have known all their lives? Or is it a commercial decision solely for profit, aided by house plans imported from Japan, as is true of one contractor interviewed during this study?

3. The findings and insights gained from this study evolved from a setting in Hawaii; the time frame, 1882-1976, was determined by the year of arrival of the oldest immigrant who participated in the research. What effect has the passage of time had on the minka in Japan during these years?

A comparative study conducted in Japan could be most useful in disclosing the trend for each feature and the reasons therefore. This data would permit a feature-by-feature comparison of trend and causes for Hawaii and Japan. The comparison would refine or reinforce the insights gained in this study.
4. This study had examined the role of the Buddhist temple in sustaining minka features in Hawaii. Shintoism preceded Buddhism in Japan, and early Shinto shrines like those at Ise stressed simplicity, austerity, and the use of materials in their natural state.

Because these design criteria are of great importance in the history of the minka, research should be conducted to define the role of Shintoism in the original design of the minka and in the persistence of its features in Hawaii.

IMPLICATIONS FOR HOUSING IN HAWAII

As stated in Chapter I, one reason for undertaking this study is to open minds to the concept that each ethnic group is entitled to understanding, social acceptance, and tolerance of its distinctive ways. The observations that follow are made for that reason.

1. Contractors of Japanese ancestry are already building houses with exterior features of the minka. They might well study the market among the AJAH for these interior features: the aesthetic center, the family altar or shrine, shōji, fusuma, the furo, the guest entrance, and the shoe storage cabinet.

2. Shōji panels are suitable as an exterior wall in Hawaii's mild climate. Apart from the aesthetic considerations, shōji permit better ventilation and are less costly than solid walls.
3. The modular floor covering, whether of carpet or straw mats, is economical because it permits replacement of worn units without the need to discard the entire covering.

4. The verandah is a suitable exterior passageway for Hawaii's climate. It eliminates the need for interior hallways and that space can be used to increase the size of the rooms.

5. A house with the post and beam system of suspension is less expensive to modify than one with the weight bearing wall system. With primary posts carrying the weight, secondary posts, floor cover, and grooves for partitions can be moved to adjust to the requirements of a growing family or the needs of later generations.

6. Ventilation openings in the gables, when opposing and oriented with prevailing winds, can remove the warm air under the roof. This reduces the need for energy-consuming devices to cool the house.

7. Inclusion of a garden in a coordinated house plan will satisfy the many AJAH who desire one and will make the most effective use of the available space. The design principles used in the Japanese garden create the psychological effect of adequate space even when the actual space is small.

8. As residential lots become smaller, less space will separate dwellings and the goal of privacy will become more important. Lattice, when backed by louvered glass, is an
inexpensive and decorative way of obtaining privacy and light.

9. Features expressing aesthetics, religion, and spatial organization have been more popular and are desired more than features responding only to utility. They would seem to be a sound investment in house design for architects.

10. If the house in America becomes smaller, the Japanese intensive use of space can be considered as a compensatory measure.

11. The extended eaves of the hip-gable roof offer excellent protection against driving rain and assist in keeping the house cool by shading it from the sun.

12. Government and private industry could contribute to the effective functioning of a multi-ethnic society by satisfying ethnic desires in house features.
FOOTNOTES

CHAPTER I


CHAPTER II


4. Traditionalist Japanese have neither the desire nor the intention to heat rooms in our Western sense of the word. They wear layers of padded clothing to keep warm. Layering of clothing conserves body heat.


10 Heinrich Engel, *op. cit.*, p. 34.

11 Heinrich Engel, *op. cit.*, p. 35.

12 Ibid.


20 Heinrich Engel, *op. cit.*, p. 156.


23 Ibid.


28 Edward S. Morse, Japanese Homes and Their Surroundings, pp. 133, 137.

29 Heinrich Engel, op. cit., pp. 159, 163.


32 Heinrich Engel, op. cit., p. 228.


35 H. Byron Earhart, op. cit., p. 63.

36 H. Byron Earhart, op. cit., p. 6.

37 Heinrich Engel, op. cit., p. 371.


42 Heinrich Engel, op. cit., p. 40.

43 Edward S. Morse, Japanese Homes and Their Surroundings, pp. 203-205.

44 Ibid.


49 Heinrich Engel, op. cit., pp. 242, 382.


53 Heinrich Engel, op. cit., pp. 118-120.


58 William Alex, op. cit., p. 50.

59 Heinrich Engel, op. cit., p. 118.

60 Heinrich Engel, op. cit., p. 119.

61 Heinrich Engel, op. cit., p. 155.


64 Heinrich Engel, op. cit., p. 118.


69 Edward S. Morse, Japanese Homes and Their Surroundings, pp. 266, 272.

70 Kiyoko and Tatsuo Ishimoto, op. cit., p. xxx.


CHAPTER IV


2Photographs taken about 1888 by John Furneaux near Hilo, Hawaii.

3Lawrence H. Fuchs, Hawaii Pono: A Social History (New York: Harcourt, Brace & World, 1961), p. 120.


5Lawrence H. Fuchs, op. cit., p. 55.
APPENDIX A
Data Collection Procedures

The concluding paragraphs of Chapter I described three tasks requiring the collection of data. The purpose of this Appendix is to specify the procedures that were used to obtain valid information related to those tasks. The statement of tasks and procedures follows:

a. Define the minka.

The single most reliable authority on architecture during the troubled post-war years of 1948-1950 when I resided in Japan was the Japanese Government. The National Library was open to students and was a source of background material. To supplement this source I engaged as tutors an American missionary who had lived in Japan for 25 years and a Japanese teacher. They taught me Japanese culture and flower arrangement respectively, with emphasis on the Japanese house at my request. From these resources came the requisite background to initiate my research effort.

The minka was recognizable as a distinct type of house for a distinct class of people during my residence in Japan. There were variations in features from house to house, but the genre was not to be denied in comparison with the homes of the wealthy and the hovels of the poor. Among my visits to all types of housing, approximately 50 were to houses in the Tokyo, Yokohama, and Kyoto areas that were clearly minka.
Conversations with the home owners reassured me that I had the correct sense of direction in my research, but also disclosed that there were regional differences in the minka. By the time of my return to Japan for further study in the summers of 1965, 1972, and 1973 I had read the references on Japanese architecture cited in Chapter II. These writings reinforced my plan for fieldwork. To compensate for regional differences in the minka, my research was localized to the five prefectures which the United Japanese Society of Hawaii authenticates as the former homes of the majority of Japanese immigrants to Hawaii. Approximately 50 minka were inspected in Hiroshima, Kumamoto, Yamaguchi, Fukuoka, and Okinawa prefectures, in addition to the seven in the Government of Japan outdoor museum at Toyonaka in this same area.

Photographs illustrating the minka in Chapter II are representative of those taken during my summer fieldwork in the years and prefectures mentioned. They are a part of a collection portraying inns, combination shop-houses, homes of merchants, elegant residences of the wealthy, tea houses and temples, department stores selling minka furnishings, gardens, and the Imperial Katsura Detached Palace. Variety in subjects was intentional as a means to maintain relativity among the types of architecture encountered.

b. Establish the presence of minka features in Hawaii.

Photographs which show the resemblance between the
minka in Japan and counterpart features in houses in Hawaii are the immediate proof that minka features are present in the state. Photographs of contemporary houses on the islands of Oahu, Maui, Kauai, Molokai and Hawaii I took at intermittent times during the period 1973 through mid-1976. A sample of these is shown in Chapter III. Photographs of houses of earlier periods in Hawaii are included as evidence in the discussion of the hypotheses in this study. They are copies of photographs in the Honpa Hongwanji Collection, the Bishop Museum, the Archives of Hawaii and family files of University of Hawaii students of Japanese ancestry.

c. Determine the role of Japanese home owners over the years in maintaining minka features in Hawaii.

The task objective was to identify which minka features Japanese home owners retained from the outset of immigration to the present, which they had discontinued, and which they would desire were they to build a new house today.

To obtain this information, University of Hawaii juniors and seniors interviewed 153 persons of Japanese ancestry, who described 631 of their residences in Hawaii from 1882 through 1976. In addition they indicated the Japanese features they desire and would include if they were to build a house today.

In the Fall of 1975, students interviewed 45 persons of Japanese ancestry and obtained detailed descriptions of 90 residences in Hawaii, and residences in Japan for those
who were immigrants. This information established the transfer of housing features from Japan to Hawaii over a span of years, and was a cross check on the answers obtained in the 1976 interviews.

The attached structured questionnaire, designed and pretested in accordance with Claire Selltiz's *Research Methods in Social Relations*, was used in the interviewing of home occupants of Japanese ancestry during the Spring and Fall of 1976. Descriptions of residences were obtained by students trained in interview procedures drawn from Selltiz. In addition each student interviewer had received a fifty minute refresher class on the minka illustrated with photographic slides included in Chapter II. Each student was enrolled in one or both of my classes in ethnic housing and costume, was of Japanese ancestry, and interviewed an elderly person of Japanese ancestry. In 75% of the cases, the interviewee was a close blood relative of the student, and in half of these instances the interviewee was grandparent to the student.

During the Spring and Fall of 1976, students interviewed 108 persons who had lived in 541 different residences in Hawaii. Of these interviewees, 41 were issei, ages 52 to 94, who had lived in 205 different houses; 43 were nisei, ages 43 to 77, who had lived in 215 different residences; and 24 were sansei, ages 33 to 60, who had lived in 121 different dwellings. Each issei provided a description of his
principal house in Japan. All interviewees designated the house features they desire and would include were they to build a house today.

The percentage of time the interviewees had had a feature in their houses in Hawaii was computed by dividing the number of years the feature had been in all houses by the total number of years the interviewees had lived in Hawaii.
APPENDIX B

Student Interview Form

Student's name ____________________________________________

Last     First

Date of interview ________________________________

Complete this interview form and attached to it any continuation sheets you used.

Priority for selection of interviewee:

1. Grandfather
2. Grandmother
3. Father
4. Uncle
5. Mother
6. Aunt
7. Neighbor

The interview questions refer to the interviewee. (If the interviewee is female, questions about occupation, experience in carpentry, and building of houses should be answered in terms of the interviewee's husband; or, as second choice, in terms of the interviewee's father. Indicate by checkmark if the answer is in terms of husband or father.)

1. Name of interviewee _______________________________ Sex ______

Last     First

Relationship of interviewee to student _________________

2. Year of birth _____ Country of birth ______

(If in Hawaii, include village/city, and island. If in Japan, include village/city, prefecture, and island)

3. Circle one:

a. immigrant to Hawaii in _____ at age _____ (issei)
b. first generation to be born in Hawaii (nisei)
c. second generation to be born in Hawaii (sansei)
4. If the interviewee is an immigrant from Japan, check those features that were in the house in which he lived for the greatest number of years while in Japan:

Sliding panels:
- Shōji (exterior sliding panels used as a wall)
- Fusuma (interior sliding panels to divide floor space into rooms)

Ramma (horizontal panel placed above the fusuma; may be of carved wood or lattice and permits free circulation of air)

Tokonoma (decorative alcove to display a scroll, a flower arrangement, and an art object)

Chigai-dana (alcove next to the tokonoma where objects are displayed or stored on shelves or in cupboards)

Futon (quilts for sleeping on the floor)

Place to worship:
- Kami-dana (miniature Shinto shrine)
- Butsu-dan (Buddhist altar)

Zabuton (cushion for sitting on the floor)

Floor covering:
- Tatami (tightly packed stiff rice-straw mat, approximately 6 feet x 3 feet x 2 inches)
- Goza (woven straw floor covering)

Furo (deep tub for a hot bath)

Genkan (entrance area where guests remove shoes and are greeted)

Getabako (shelves or a compartment for shoes at the entrance area)

Kirizuma and gegyo (functional ventilation opening and decorative wood pendant at the gable)

Iri-moya (hip-gable roof)

Koshi (lattice on windows or doors, or fence or gate or gables)

Engawa (broad overhanging eaves and verandah)

Umanori (ridge cover with ridge riders)
Hakomune (ridge cover)

Gaki (roofed fence, roof to protect fence materials)

Niwa (decorative outdoor garden, a combination of any two of these: stone lantern, pebbles, rocks, shrubs, flowers, grasses, water)

5. Fill out one sheet like this for each residence the interviewee has had in Hawaii. Use sheets as needed from the supply given you and include in report.

1st residence in Hawaii
From ______ to ______
(years)

Complete address ______
_____________________
_____________________
_____________________

Check if this is also interviewee's present residence ______

Check type of residence:
grass shelter
plantation house
farm house
village house
city house
other ______

Interviewee's occupation(s) during this period. Check if answer is for ( ) husband or ( ) father

_____________________

_____________________

In opposite column check features already in residence when first occupied

SHÔJI--exterior sliding panels
FUSUMA--interior sliding panels
RAMMA--ventilation panel
TOKONOMA--aesthetic alcove
CHIGAI-DANA--alcove with cupboard
FUTON--bed quilt
KAMI-DANA--miniature Shinto shrine
BUTSU-DANA--Buddhist altar
ZABUTON--cushion
TATAMI--straw floor mat
GOZA--straw floor covering
FURO--bath
GENKAN--guest entrance
GETABAKO--shoe shelf
KIRIZUMA--functional vent opening in gable
GEGYO--decorative pendant at gable
IRI-MOYA--hip-gable roof
KOSHI--lattice
ENGAWA--broad eaves, wooden verandah
ENGAWA--broad eaves, non-wood verandah
UMANORI--ridge cover with ridge riders
GAKI--roofed fence
In opposite column write letter "a" in front of features added to residence

6. If the interviewee were to build his or her own house today, are there any features in the opposite column the interviewee would include? If so, check which ones and state the reasons why the interviewee would include them.

(Use continuation sheet)

NIWA--decorative garden
HAKOMUNE--ridge cover

SHŌJI--exterior sliding panels
FUSUMA--interior sliding panels
RAMMA--ventilation panel
TOKONOMA--aesthetic alcove
CHIGAI-DANA--alcove with cupboard
FUTON--bed quilt
KAMI-DANA--miniature Shinto shrine
BUTSU-DAN--Buddhist altar
ZABUTON--cushion
TATAMI--straw floor mat
GOZA--straw floor covering
FURO--bath
GENKAN--guest entrance
GETABAKO--shoe shelf
KIRIZUMA--functional vent opening in gable
GEGYO--decorative pendant at gable
IRI-MOYA--hip-gable roof
KOSHI--lattice
ENGAWA--broad eaves, wooden verandah
ENGAWA--broad eaves, non-wood verandah
UMANORI--ridge cover with ridge riders
GAKI--roofed fence
NIWA--decorative garden
HAKOMUNE--ridge cover
7. If the interviewee lived on plantations, did the interviewee have any complaints about housing? If so, list the name of the plantation(s), describe the complaints in detail, state the dates the complaints existed and the dates the complaints were corrected, if known.

(use continuation sheet if needed)

8. If the interviewee was born in Japan, what was the interviewee's occupation in Japan? Check if answer describes ( ) husband or ( ) father.

(use continuation sheet if needed)

9. If interviewee was born in Japan, describe in detail any experience the interviewee had in carpentry and house building in Japan. Check if answer describes ( ) husband or ( ) father.

(use continuation sheet if needed)

10. Describe in detail any experience the interviewee had in carpentry and house building in Hawaii. In particular, was there any experience in Hawaii in building one's own house or the house of a relative or friend? Check if answer describes ( ) husband or ( ) father.

(use continuation sheet if needed)

11. Has the interviewee ever used the ezuita board? ( ) in Japan; ( ) in Hawaii. Check if answer describes ( ) husband or ( ) father.

12. Describe any incidents related by the interviewee about housing, housing customs, or building of houses that you consider unusual or interesting.

(use continuation sheet if needed)
BIBLIOGRAPHY


