San Fernando Valley State College

A GEOGRAPHY OF THE LONGHOUSE
Distribution, Origin, Diffusion

A thesis submitted in partial satisfaction of the requirements for the degree of Master of Arts in Geography

by

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Committee Chairman

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# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENT</td>
<td>iii</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>ix</td>
</tr>
<tr>
<td>CHAPTER I. INTRODUCTORY</td>
<td>1</td>
</tr>
<tr>
<td>THE PROBLEM</td>
<td>1</td>
</tr>
<tr>
<td>TOWARD A DEFINITION</td>
<td>3</td>
</tr>
<tr>
<td>CHRONOLOGICAL PERSPECTIVE IN DWELLING TYPE</td>
<td>6</td>
</tr>
<tr>
<td>RAISON D' ETRE</td>
<td>8</td>
</tr>
<tr>
<td>CHAPTER II. THE DISTRIBUTION</td>
<td>14</td>
</tr>
<tr>
<td>EASTERN AND SOUTHEASTERN ASIA</td>
<td>16</td>
</tr>
<tr>
<td>INDONESIA AND MELANESIA</td>
<td>20</td>
</tr>
<tr>
<td>NORTH AMERICA</td>
<td>23</td>
</tr>
<tr>
<td>SOUTH AMERICA</td>
<td>27</td>
</tr>
<tr>
<td>THE PACIFIC</td>
<td>27</td>
</tr>
<tr>
<td>NEOLITHIC EUROPE</td>
<td>30</td>
</tr>
<tr>
<td>SOME MARGINAL CASES</td>
<td>32</td>
</tr>
<tr>
<td>CHAPTER III. THE PHYSICAL HOUSE</td>
<td>40</td>
</tr>
<tr>
<td>DIMENSIONS</td>
<td>40</td>
</tr>
<tr>
<td>MATERIALS</td>
<td>42</td>
</tr>
<tr>
<td>METHODS OF CONSTRUCTION</td>
<td>46</td>
</tr>
<tr>
<td>ROOF TYPE</td>
<td>58</td>
</tr>
<tr>
<td>GROUND PLAN</td>
<td>66</td>
</tr>
<tr>
<td>MISCELLANEOUS FEATURES</td>
<td>80</td>
</tr>
<tr>
<td>Chapter IV. The House and Society</td>
<td>87</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>----</td>
</tr>
<tr>
<td>Village Structure</td>
<td>87</td>
</tr>
<tr>
<td>Social Organization</td>
<td>90</td>
</tr>
<tr>
<td>Ceremonial Practice and House Construction</td>
<td>98</td>
</tr>
<tr>
<td>Chapter V. Origin and Diffusion</td>
<td>102</td>
</tr>
<tr>
<td>The Longhouse in Culture Complex</td>
<td>104</td>
</tr>
<tr>
<td>A Proposal of Origin</td>
<td>106</td>
</tr>
<tr>
<td>To the East of Sumatra</td>
<td>111</td>
</tr>
<tr>
<td>The Pacific Bugaboo</td>
<td>114</td>
</tr>
<tr>
<td>North and South in the Americas</td>
<td>117</td>
</tr>
<tr>
<td>Chapter VI. Conclusion and Overview</td>
<td>124</td>
</tr>
<tr>
<td>Plates</td>
<td>126</td>
</tr>
<tr>
<td>Bibliography</td>
<td>160</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Generalized Longhouse Distribution</td>
</tr>
<tr>
<td>2</td>
<td>Longhouse Distribution - Southeast Asia</td>
</tr>
<tr>
<td>3</td>
<td>Longhouse Distribution - Indonesia, Melanesia</td>
</tr>
<tr>
<td>4</td>
<td>Longhouse Distribution - Americas</td>
</tr>
<tr>
<td>5</td>
<td>Framework Construction</td>
</tr>
<tr>
<td>6</td>
<td>Framework Construction</td>
</tr>
<tr>
<td>7</td>
<td>Floor Construction</td>
</tr>
<tr>
<td>8</td>
<td>Roof Construction</td>
</tr>
<tr>
<td>9</td>
<td>Roof Types</td>
</tr>
<tr>
<td>10</td>
<td>Roof Type - Southeast Asia</td>
</tr>
<tr>
<td>11</td>
<td>Roof Type - Indonesia</td>
</tr>
<tr>
<td>12</td>
<td>Roof Type - Americas</td>
</tr>
<tr>
<td>13</td>
<td>Ground Plan - Southeast Asia</td>
</tr>
<tr>
<td>14</td>
<td>Ground Plan - Indonesia</td>
</tr>
<tr>
<td>15</td>
<td>Ground Plan - Americas</td>
</tr>
<tr>
<td>16</td>
<td>Ground Plan</td>
</tr>
<tr>
<td>17</td>
<td>Ground Plan</td>
</tr>
<tr>
<td>18</td>
<td>Ground Plan</td>
</tr>
<tr>
<td>19</td>
<td>Ground Plan</td>
</tr>
<tr>
<td>20</td>
<td>Ground Plan</td>
</tr>
<tr>
<td>21</td>
<td>Ground Plan</td>
</tr>
<tr>
<td>22</td>
<td>Ground Plan</td>
</tr>
<tr>
<td>23</td>
<td>Social Organization - Southeast Asia</td>
</tr>
<tr>
<td>24</td>
<td>Social Organization - Indonesia</td>
</tr>
<tr>
<td>25</td>
<td>Social Organization - Americas</td>
</tr>
</tbody>
</table>
26. Suggested Longhouse Dispersal ............... 107

LIST OF TABLES

1. House Dimensions .................................. 41
2. House Materials .................................... 43
3. House Materials .................................... 45
4. Inmates Per Single Dwelling ....................... 88

LIST OF PLATES

I. North America - Iroquois ......................... 127
II. North America - Iroquois ....................... 128
III. North America - Iroquois ..................... 129
IV. South America - Tupinamba ..................... 130
V. Burma - Kachin .................................... 131
VI. Burma - Kachin ................................... 132
VII. Burma - Palaung .................................. 133
VIII. Burma - Palaung ................................. 134
IX. Assam - Garo ..................................... 135
X. Assam - Garo ...................................... 136
XI. Assam - Dafla .................................... 137
XII. Assam - Garo .................................... 138
XIII. Indochina - Moi .................................. 139
XIV. Indochina - Moi .................................. 140
XV. Indochina - Moi .................................. 141

vii
<table>
<thead>
<tr>
<th>Volume</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>XVI.</td>
<td>Mentawei Islands</td>
</tr>
<tr>
<td>XVII.</td>
<td>Sumatra - Minangkabau</td>
</tr>
<tr>
<td>XVIII.</td>
<td>Flores - Manggarai</td>
</tr>
<tr>
<td>XIX.</td>
<td>Borneo - Iban</td>
</tr>
<tr>
<td>XX.</td>
<td>Borneo - Iban</td>
</tr>
<tr>
<td>XXI.</td>
<td>Borneo - Iban</td>
</tr>
<tr>
<td>XXII.</td>
<td>Borneo - Iban</td>
</tr>
<tr>
<td>XXIII.</td>
<td>Borneo - Kayan</td>
</tr>
<tr>
<td>XXIV.</td>
<td>Borneo - Land Dayak</td>
</tr>
<tr>
<td>XXV.</td>
<td>Borneo - Kayan</td>
</tr>
<tr>
<td>XXVI.</td>
<td>New Guinea - Kiwai</td>
</tr>
<tr>
<td>XXVII.</td>
<td>New Guinea - Kiwai</td>
</tr>
<tr>
<td>XXVIII.</td>
<td>New Guinea - Kiwai</td>
</tr>
<tr>
<td>XXIX.</td>
<td>Gilbert Islands</td>
</tr>
<tr>
<td>XXX.</td>
<td>China</td>
</tr>
<tr>
<td>XXXI.</td>
<td>Neolithic Europe</td>
</tr>
<tr>
<td>XXXII.</td>
<td>Neolithic Europe</td>
</tr>
<tr>
<td>XXXIII.</td>
<td>Iron Age Europe</td>
</tr>
</tbody>
</table>
ABSTRACT

A GEOGRAPHY OF THE LONGHOUSE
Distribution, Origin, Diffusion

by

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Master of Arts in Geography
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The key to the analysis of the disjunct distribution of the longhouse is based on form and function. These two aspects are viewed in the light of their relationship to the distributional pattern. Although the longhouse is best understood within an overall societal-cultural setting, specifics concerning structural and social features are considered. The possibility is presented that a neolithic agricultural civilization in Southeastern Asia developed a technological innovation comprising a long, rectangular communal dwelling. This "longhouse" represented an institution which served not only as the living quarters of related families or extended households, but likewise as a means of socio-cultural integration. The spread of this society was responsible for the dispersal of the longhouse and of longhouse culture throughout parts of Southeast Asia and Indonesia, and perhaps indirectly, across the Pacific to the Americas. Regardless of how the general problem is approached, the "geographical" validity of disclosing
likenesses and variations within a form of land occupancy is suggested.
CHAPTER I

INTRODUCTORY

The Problem

Among the premises upon which the following study is based is the proposition that the role of the geographer should be not only to map distributions, but to explain them. The distribution itself may be taken as the first step; the "why?" or the "how?" as the second.

In order to explain the distribution of the longhouse it will be necessary to analyze the salient features which determine its unique character. The problem of investigation thus revolves around an exposition of the nature of the longhouse, its similarities and variations; not with the avowed purpose of solving the problems of its origin and dispersal, but rather of suggesting some likelihoods and possibilities. As with all diffusion studies the crux of the issue takes the form of the old dichotomy between diffusion and independent invention.

Among the many approaches to the study of cultural diffusion, the most popular have included the study of skeletal remains or physical type, linguistics, folklore and material culture. The longhouse should be viewed as a form of the latter.

Few geographers have attempted diffusion studies of
house types - one notable exception being Kniffen\(^1\) - expending their efforts on problems of distribution and classification. The combined distribution-dispersal study in geography has been handled in other areas however. Hagerstrand believed that changes in the spatial distribution of culture elements occur in conformity to certain undiscovered principles and postulated the spread of automobiles in Sweden as a function of ratios and gradients. Numerous diffusion problems have been investigated by non-geographers, many, understandably, taking on a "geographic" perspective.

A 19th century investigator was Ratzel, who mapped distributions of culture traits and published on the distribution of the bow and spear in what he termed the "Indo-African Volkerkreis." He used resemblances between similar culture traits in widely separated areas to demonstrate historical connection, showing that there is no limit to the distance that such traits may traverse. The diffusion of culture hypothesis came to the forefront through the work of the German diffusionists, notably Graebner and Schmidt, and their "Kulturkreis" school of ethnology.

Graebner, Schmidt and others placed the longhouse within a diffused complex of traits focusing on Southeast Asia and Indonesia. Yet no study, to this author's knowledge, has attempted a comprehensive investigation of the longhouse, combining function and form, and certainly none
has involved an origin-dispersal approach. It will be seen that to even delimit a definition could well occupy the efforts of the most ambitious.

Toward a Definition

Perhaps the most obvious point of contention posed by this study is the answer to the question—What is a "longhouse?" The term was originally coined for use in American anthropology, but its meaning has usually remained unclear, carrying different connotations for different people. Bishop suggests the following definition: "... a very elongated but proportionally narrow structure of wood or bamboo, raised (often considerably) above the ground on piles, and with a gable roof." From a structural point of view this definition approaches universality. However, due to the use or communal nature of the longhouse, a definition based upon function as well as form would seem more appropriate.

Loeb and Broek distinguish between a "multiple-dwelling house" and a "multiple-family house." The former are suggested as being true longhouses. They are characterized by containing separate quarters for each family. Multiple-family houses are said to be intermediary between the multiple-dwelling and the single-family house, and lack separate quarters for individual families. They are of no specialized shape.

The Form:
The term "longhouse" becomes an elusive concept when we consider the possibility of determining at what point a house ceases to be "long." A structure 500 feet in length would certainly be considered long, yet if the width measured 475 feet, it would approach squareness. Thus it is not merely the length, but more critically, the length in proportion to the width, that must be accounted for. As generally defined, a longhouse is longer than it is wide. It is likely, then, that a longhouse represents a particular form of rectangular dwelling. A rectangular house would thus comprise two sets of equal sides, one set longer than the other. The term may also refer to a four-cornered structure. A review of the data on longhouse dimensions suggests that a length-width ratio of 3 to 1 approximates the point where a longhouse becomes "long." Such proportions represent the lower limit as most longhouses exhibit a ratio of 5 to 1 or greater. Since the length to width proportions are a function of the number of occupants, a house of 3 to 1 may be as much a longhouse as a house proportioned 7 to 1.

To these requirements may be added - a continuous structure, above the ground, under a single roof, and partitioned along its length to form the rooms or quarters of separate families. The presence of piles as house supports, a gabled roof, or the type of building materials, while characteristic, are to be viewed as incidental to the
The Function:

The longhouse as defined in this study refers solely to a structure which serves as the permanent living quarters of a varying number of nuclear families. It is a type of communal dwelling that may house an entire village, portions of a village, or an extended household or clan.

As a communal family dwelling it is to be distinguished from other types of houses which are sometimes considered longhouses, but which exhibit a difference in function. These would include bachelor or men's houses, houses for unmarried girls, council houses, or houses of chiefs. Many resemble the longhouse in general appearance but are rarely used as living quarters, serving as public buildings at ceremonial functions or as club-houses. According to Malinowski the club-house or men's house (sometimes termed "head-house"), is a function of age grouping, secret societies, or sexual abstinence or laxity, rather than the grouping of families. Among the Kiwai Papuans of New Guinea, two types of communal house exist - the "moto" or communal family dwelling and the "darimo" or combined men's house, club-house. This pattern is common in many widely scattered portions of the globe.

Another interesting definitional problem is pointed out by Geddes, who suggests that the Borneo Dayak longhouse is in reality not a longhouse at all, but rather a series
of separately built houses joined together. The argument concerning this definition would more than likely depend upon which side of the fence one views the fence from.

Likewise, as the longhouse comprises an important focus of social life, the accompanying level of culture should be distinguished. There are many forms of building one might well term "longhouses," even in a contemporary industrialized society. These, obviously, are not related to a communal dwelling used among primitive peoples. To cite one example, Peate studied a type of rectangular house which he called a Long House, a house form from an early period in Welsh history. It was anywhere up to 90 feet in length, and was a combination house-barn in which a man and his cattle were accommodated under one roof. A central passage led from kitchen to cow stalls. This meaning differs considerably from the anthropological definition which represents the subject of investigation.

Chronological Perspective in Dwelling Type

At the dawn of evolution man perhaps dwelt in the trunks or the tops of trees, sometime later taking residence in natural caverns and pit dwellings. Primitive leaf shelters possibly preceded substantial architectural design, which is believed to have begun during the Neolithic. When the earliest forms of buildings appeared, the circular structure was employed before quadrangular forms, wood prior to stone. Heine-Geldern regards the round
house as the oldest type in Indonesia, the most ancient form built level to the ground.

Most would agree that the longhouse preceded the single-family dwelling, but little can be derived with certainty as to its place in the communal dwelling syndrome. That the longhouse antedates the round and oval forms of communal dwelling is a possibility. At any rate, Asian and Indonesian history seems to indicate a gradual transition from the communal to the single-family house. Likewise, Peal presents a strong argument in favor of the men's house being a survival of the true communal house in which the whole community originally lived.

Bobek has proposed that the earliest stage in man's socio-economic evolution was the food-gathering stage, followed by the stage of specialized collectors, hunters, and fisherman (Mesolithic); the latter in turn being followed by the state of clan-peasantry, linked archaeologically with the Neolithic. The stage of clan-peasantry was a period of cultivation, animal husbandry, extended or large households, and a rise in the status of women, all features closely associated with longhouse culture. Further evidence is suggested by Hoebel who claims that:

Joint family long houses of the Iroquois, Jivaro, and Indonesian type, as great as 120 feet long and 25 feet wide, and with gabled roofs, were common in the Lower Neolithic. This means that clanlike lineages had developed as the dominant form of social organization and that the unilateral principle had come into being in
early Neolithic times. (20)

Raison d' Etre

Among the many unanswered questions concerning long-house distribution is the reason for origin and existence. The most popular suggestions have ranged from the scarcity of land on hillsides to ease of defense from enemies. House occupants would be effectively protected from surprise attacks due to the height above the ground and the close grouping of the community or clan. Perhaps a more plausible explanation for the original idea was that the long-house resulted from the mode of social organization. This would depend on whether or not a clan society originally developed the idea of inhabiting a single dwelling. In cases where an entire village occupied a single house, social organization would seem less critical than use as a means of defense. The fact that erection of a single house may be more economical than constructing separate houses is another possibility. It may be that several factors operated in conjunction. Regardless, one can point to cultural survival as the reason for persistence of the longhouse and of longhouse culture.

In recent times the communal house has given way to the single-family dwelling, the two often coexisting among the same peoples. In other cases, less common, the long-house is completely abandoned in favor of other forms of habitation. Such has been the pattern in Burma, where
contact with the Burmese, and in Borneo, where contact with Malays, has influenced changes in traditional living habits of the more "primitive" societies. The disappearance of the longhouse is particularly characteristic in South America. Of the modern Guarani (Paraguay and southern Brazil) only a few Caingua still lived in communal houses fifty years ago. These, interestingly, were of a considerably reduced length from those first encountered by the Spanish. Similarly, among the Chiriguano (eastern slopes of Bolivian Andes), small rectangular houses took the place of long, communal houses following the 17th century.

In North America the Iroquois exhibit the pattern to even a higher degree. The Iroquois longhouse went completely out of existence by the end of the 18th century, due to the breakdown of longhouse organization resulting from European colonization. In its place occurred log houses of smaller dimensions.

The reasons for the disappearance of the longhouse would in itself be an interesting problem of investigation. According to Loeb and Broek, such an occurrence takes place with the contact of more "advanced" civilizations, the disappearance being more rapid in accessible coastal areas and river valleys. Their suggestion seems to be well founded, two examples being the coastal Muruts of Borneo and the Karens of the Irrawaddy valley in Burma. An exception are the Iban (Sea Dyak) of Sarawak. The influence of
outside culture can be responsible for damaging the traditional social system. . . . "It seems clear that the break-up of the big family, be it patriarchal, matriarchal, or a mixture of the two, involves that of the house." In this regard, contact with Christianity has at times led to the abandonment of the longhouse in favor of single-family units.

In Borneo the change from the longhouse to other forms of domicile has been partially attributed to the establishment of strong administration, which, by abolishing head-hunting, has removed the necessity of the longhouse as a means of community defense. Rutter speculates that the family house displaces the communal house in Borneo in direct proportion to increase in culture and that . . . . "The practice of herding together in long houses prevents mental and moral improvement and hinders advance in gardening and planting and agricultural development generally." Ironically enough, however, the original longhouse dwellers may have been among the first of the world's agriculturists.
Footnotes


5. The data on longhouses is limited to comments among studies concerned with more general subjects, such as house types, or works devoted to the total material culture on various peoples. E.M. Loeb and J.O.M. Broek, "Social Organization and the Long House in Southeast Asia," American Anthropologist, 49 (1947), pp. 414-25, come the closest to the study presented here. Their paper revolves around the diffusion problem, yet is limited to the aspect of function only.

6. Among various writers, Long House, Long-House, or Longhouse. It could well be contended on a purely terminological basis that the real question should be - Is there a longhouse?


9. For discussions on the nature and distribution of the men's house see S.E. Peal, "The Communal Barracks of Primitive Races," Journal of the Asiatic Society of Bengal, 61 (1892), pp. 246-69; C. von Furer-Haimendorf,


13. Among some Dyak tribes portions are added to the house as more families take up residence. One could well argue on the other side that if separate family quarters are joined together in a continuous structure, then they are no longer separate, but part of a single dwelling.


16. Ibid.


21. In Borneo the height of the piles elevating the house is often a function of the intensity of tribal warfare. In some cases ladders leading from the ground to the house are pulled up at night to prevent enemies or animals from entering.
22. Although the longhouse may be viewed as a type of communal pavilion, it is important to realize that the individual family usually maintains ownership and maintenance of its separate rooms.


24. Ibid., p. 472.

25. As late as the 1930's three Seneca Iroquois longhouses existed in New York and one in Canada, but served only for ceremonial purposes on special occasions. See W.N. Fenton, "An Outline of Seneca Ceremonies at Coldspring Longhouse," Yale University Publications in Anthropology, Number 9, 1936.


CHAPTER II

THE DISTRIBUTION

Figures 1-4 represent the distributional pattern of the longhouse, which requires some reservation and explanation. That the suggested distribution is based primarily upon the definition should be obvious. Loeb and Broek, for example, have provided an invaluable distribution map for Indonesia and Southeast Asia; devoted to communal housing patterns in general, rather than the longhouse, exclusively. The author has attempted to separate longhouses from other forms of communal dwelling. The line of separation is at times unstable. Doubt as to either the definition or the actual presence of the longhouse has been incorporated within the maps presented. In several instances the reliability of references is to be trusted, in most cases the consideration of readily available data permits a more certain conclusion.

The distribution depicted is not to be taken as necessarily representative of a "present longhouse distribution." Rather, the location has been mapped whether or not the longhouse was in existence at one time but is no longer encountered or whether it has remained up to this time. In all likelihood there are some tribes not depicted who formerly had longhouses, and conversely, some who maintain them at
FIGURE 1
GENERALIZED LONGHOUSE DISTRIBUTION

APPROX. SCALE IN MILES
0  2400  4800
present but are not reported due to a lack of data. The
latter situations are suspect by the author as possible in
portions of South America and Indonesia, in particular.
Then too, one may argue the presence or absence depending
upon his definition.

A preliminary, generalized representation of the pattern of
distribution is introduced in Figure 1, while
Figures 2-4 furnish a more specific depiction.

Eastern and Southeastern Asia

In Southeast Asia the longhouse exhibits a trend toward
locations in and near the river valleys of Assam,
Burma, and Yunnan. Characteristic also is a general pre-
ference to upland areas, as among the Moi of the Darlac
plateau and the tribes of the Himalayan foothills in Assam.
Figure 2 indicates an apparent focus in Assam and northern
Burma.

While the picture on the mainland remains at least
relatively clear, the same is not true concerning the Philip-
ippines and Japan. That a type of longhouse was once pre-
sent in Japan is likely, and it may be that they are still
utilized among some of the poorer country people. The
nature of a supposed Japanese longhouse will be discussed
later in relation to the general definition.

Conflicting evidence exists concerning the Philippine
Islands. Cole relates that a noteworthy cultural differ-
ence between Philippine tribes and the Kayan of Borneo is
<table>
<thead>
<tr>
<th></th>
<th>Longhouse Distribution Southeast Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Abor (Assam)</td>
</tr>
<tr>
<td>2</td>
<td>Garo (Assam)</td>
</tr>
<tr>
<td>3</td>
<td>Sentang (Assam)</td>
</tr>
<tr>
<td>4</td>
<td>Dafla (Assam)</td>
</tr>
<tr>
<td>5</td>
<td>Mishmir (Assam)</td>
</tr>
<tr>
<td>6</td>
<td>Kachin (Burma, Yunnan)</td>
</tr>
<tr>
<td>7</td>
<td>Palaung (Burma)</td>
</tr>
<tr>
<td>8</td>
<td>Karen (Burma)</td>
</tr>
<tr>
<td>9</td>
<td>Black and White Thai (Vietnam)</td>
</tr>
<tr>
<td>10</td>
<td>Moi (Vietnam)</td>
</tr>
<tr>
<td>11</td>
<td>Cham (Vietnam)</td>
</tr>
<tr>
<td>12</td>
<td>Andaman Islands</td>
</tr>
</tbody>
</table>
FIGURE 2

△ LONG SHELTER

APPROX. SCALE IN MILES
0 300 600
the longhouse of the latter. Conversely, Krieger points out that communal village houses are characteristic of the Bontoc and Ifugao. Investigation for this study has uncovered curious types of communal dwellings among some of the Philippine peoples, but the form differs from that characteristic of the typical longhouse.

A house form similar to that of the Bontoc has been reported among some Formosan aborigines. The house in question is built on a platform of stone or clay and is high and spacious. The platform is five to six feet high, fifty feet wide and one hundred feet in length. Even considering that the platform extends beyond the house to serve as a corridor, it can be speculated that the house is a communal dwelling, longer than it is wide. On the other hand, the platform house, which was distributed widely throughout the Pacific region, contrasts with the construction on piles characteristic of the longhouses of Southeast Asia and the Indies. Unfortunately, a description of the Formosan platform house and its functional significance is not provided in the English summary of the article in question. It is possible that reports of the "longhouse" on Formosa refer to the men's house, head-house encountered on the island. These structures are basically long and narrow in form.

Another problem area is the far northeastern portion of the continent where many aspects of material culture
have been contrasted with those of northwestern North America. Olson refers to gable-roofed, rectangular plank or pole houses built on the ground or on piles, noted among the Mangun, Goldi, and Orochi of the Amur region or among the Gilyak and Ainu of Sakhalin. Driver and Massey report semi-subterranean communal dwellings of the early Upper Paleolithic which may have been related to similar structures in northwestern America. Again, investigation of the descriptions of such dwellings indicates the likelihood of a difference in either form or function from the true long, communal house delimited here.

Indonesia and Melanesia

The many islands dotting the East Indian Archipelago demonstrate perhaps the most varied housing pattern of any area on the globe, ranging from unique forms of single-family dwelling to every possible type of communal habitation. In the midst of the milieu is the longhouse, spread from the western portions of Sumatra to the Celebes and into New Guinea. The island of Borneo has in the past been linked almost inseparably with longhouse culture, providing some of the most exotic forms in terms of sheer length. The longhouse is found throughout most of New Guinea, being characteristic of Papuan culture.

The literature on Indonesian tribal groupings and their houses is often confusing. Some studies have referred to the Bataks of Sumatra as possessing longhouses, when
FIGURE 3
Longhouse Distribution
Indonesia-Melanesia

1. Semang and Sakai (Malaya)  13. Ngadju (Borneo)
2. Atjehnese (Sumatra)  14. Punan (Borneo)
3. Gajo (Sumatra)  15. Tenggerese (Java)
4. Karo-Batak (Sumatra)  16. Manggarai (Flores)
5. Minangkabau (Sumatra)  17. Toradja (Celebes)
7. Mentawei Islands  19. Mindanao
8. Land Dayak (Borneo)  20. Formosa
9. Iban (Borneo)  21. Palau Islands
10. Kayan and Kenych (Borneo)  22. Tanimbar
11. Murut (Borneo)  23. New Guinea
12. Dusun (Borneo)  Discontinuous
                           Distribution
24. New Britain
in reality it is the Karo-Batak and not the Toba who inhabit them. Other reports mention the presence of communal houses without specifying the type. The distributions shown in Figure 3 are well representative, yet on some of the smaller islands where communal dwellings of variant forms exist, the absence of the longhouse is open to doubt.

In Melanesia the determination of longhouse presence becomes more difficult. In New Britain, New Ireland, and the Solomons, the men’s house dominates the literature, leading one to suspect the absence of a communal family house.

North America

In the New World the longhouse is best known among the Iroquois Indians of New York state. Elsewhere the distribution is in need of considerable investigation. The Powhatattan tribes of Virginia occupied dwellings that were long and narrow and tenanted by several families. They are known primarily from drawings made by John White in 1585. That these resembled the Iroquois longhouse will be seen later.

In the "Journal of a Voyage to New York" (1679-80) by Jasper Dankers and Peter Sluyter there is a description of a house of the Nyack Indians of Long Island, an Algonquin tribe affiliated with the Virginia Indians. The Nyack house resembled the houses of the Iroquois and Powhatattan, being a communal habitation for seven or eight families.
Further south the possibility remains that a longhouse existed among the Georgia-Florida Indians, whose houses were often arranged in circular village groups and surrounded by palisades. Cabeza de Vaca reported communal houses so large they could contain more than 300 persons; yet the form may not necessarily have been long and rectangular.

And in the Great Plains Wedel has cited "long-rectangular-house" cultures in the Middle Missouri region, carrying radiocarbon dates from A.D. 710 to A.D. 1300; and in the north extending as far as the Little Missouri River of North Dakota. Whether or not these were multi-family habitations, the presence of excavated floors with entrance ramps may indicate an important structural difference not seen in other portions of North America.

Along the Pacific Northwest Coast from northern California to southeastern Alaska a peculiar type of longhouse was discontinuously distributed. The houses of the coastal strip represent two forms of communal dwelling - a house type approximating a square shape, often with an excavated floor and a longhouse, sometimes of considerable length. The former were characteristic of the Kwakiutl and the Tlingit, the latter of the Nootka and Salish. The longest examples have been reported on Vancouver Island, coastal British Columbia, along the Columbia and Fraser Rivers, and in Puget Sound.
FIGURE 4

Longhouse Distribution
South America and North America

1. Tupinamba (eastern Brazil)
2. Guarani (Paraguay and southern Brazil)
3. Asurini (central and southern Brazil)
4. Mundurucu (southwest Para and southeast Amazonas)
5. Apiaca (central Brazil)
6. Aranaa (eastern Bolivia)
7. Chiriguano (eastern Bolivian Andes)
8. Zaparoan (Peruvian and Ecuadorian Montaña)
9. Guayupe (Venezuelan-Columbian Llanos)
10. Betoi, Jirara, Airico (eastern Columbia)
11. Guiana Indians
12. Georgia-Florida Indians
13. Virginia Indians
14. Nyack (Long Island)
15. Iroquois (New York, Canada)
16. Plains Indians
17. Pacific Northwest Coast - Discontinuous Distribution
No long, communal dwellings have been reported in either Mexico or Central America, although an absence from the latter remains open to speculation. From the Tarahu-mar south, to the Mixe of Oaxaca, highland tribes of Mexico made rectangular plank and log houses, but . . . "the evidence is almost conclusive that such wooden structures resulted from Spanish influence with the introduction of the steel ax and certain architectural details."  

South America

The most characteristic feature of the South American distribution is an emphasis on location within the Amazon Basins and Paraguay. Such a circumstance may or may not have any real significance if we consider the areal extent of the basins themselves. At any rate we can say that the longhouse is clearly within the forest cultures. Characteristic also is a close relationship between the distribution and an interrelated group of tribes, the Tupi-Guarani. The latter, in fact, almost wholly dominate the South American distribution. The likelihood of the longhouse among tribes not depicted in Figure 4 was mentioned previously.

The Pacific

The absence of the longhouse from the Pacific may raise a question to proponents favoring trans-Pacific diffusion of material culture. Only in the Palau Islands of the western Pacific has a lineage or family longhouse been
reported. Interestingly, the Palau group is nearest Indonesia; while in Yap, farther to the north, the Indonesian influence begins to fade and the family longhouse is replaced by the men's communal dwelling. The same trend has been observed in areas eastward from New Guinea in Melanesia.

An excellent review of the early exploration literature on Pacific architecture has been provided by Brigham. Several types of structures resemble the longhouse in appearance including the men's house, the council or community house used during festive occasions, and the widely distributed canoe shed. These however do not serve as permanent living quarters; nor is there an example of a house partitioned along the length of its interior, providing separate living space for a number of families.

In the Marianas, Thompson has suggested that latte sites (ruins) showing clearings in the forest containing upright pillars were used to support "longhouses." Individual family houses were not longhouses however, but the pillars are believed to have supported men's houses, store houses and canoe sheds. Handy and Handy mention a "longhouse" in Samoa but they do not explain the nature of its function. Other sources have claimed the presence of extended families on Samoa but make no attempt at connecting them with communal dwellings. Hence, a problem situation arises. A link between the house and society is
difficult to determine. In this regard it may or may not be the case that the mention of "extended households" refers partially to an actual dwelling. At any rate, the form of the Samoan house is not particularly similar to longhouses in Indonesia or the Americas; i.e., it was constructed on a stone platform, was oval rather than right-angle ended, possessed an open interior and was open on the sides. 

The Bishop Museum possesses a carefully constructed model of a house from Maiana in the Gilbert Islands (See Plate XXIX). It is evident that this structure resembles, at least in general form, longhouses in Southeast Asia and the Indies. Again there is no mention of the house's function. Its size may indicate that it served as a communal house. As to form, the foundation of four corner posts as opposed to many, the presence of a storage loft, the double ridge pole along the roof crest and the open end, indicate both similarity to and difference from known longhouse structure.

It should be emphasized that the absence of the longhouse in the Pacific is only a general feature. It is not to say that isolated instances did not exist in the past; only that they have not been determined in this study. Houses of large proportions were widespread in the Pacific; but it is unknown whether or not these were once related to the longhouse in its original circumstance, or more criti-
cally, if the longhouse entered the Pacific and was abandoned.

Maude's analysis of the Gilbertese Boti points out certain features characteristic of the longhouse, although arranged in a different order or context. The "Boti" area was considered totemic and patrilineal and was the sitting place of a clan in the local community meeting house. A relation between the latter and a structure for the permanent residence of related families, is suggested.

Neolithic Europe

The possibility that longhouses were widespread throughout parts of central Europe in Neolithic times has been given support by Childe, who exposed this relatively unknown phenomenon over a decade ago. "The first farmers to colonize the forested lands of Central and Northern Europe built wooden houses that at least in dimensions and external plan resemble those still built in the East Indies and formerly built by the pre-Columbian Indians of the woodland zone of North America."

The houses in question were distributed on the central European loess lands in Holland, Belgium, West Germany, Czechoslovakia, Poland, and at a later date, parts of Denmark. They were rectangular buildings up to 32 meters in length (Plate XXXI). That these were likely of a communal nature will be seen later. The best examples are from the first phase of Danubian culture at Koln-
Lindenthal in the Rhineland (Plate XXXII). Early excavators thought that the occupants of this village inhabited semi-subterranean dwellings of irregular shape; but the belief is now that the long, rectangular buildings formerly interpreted as barns, served as the true dwellings.

At a later time in the Iron Age (between 700 and 400 B.C.), a Polish lake village northeast of Poznan contained structures which from all appearances can be considered longhouses (Plate XXXIII). The latter comprised uniform wooden huts standing end to end and frequently with a common end-wall.

It will be seen that the various forms of European longhouse demonstrate several curious structural similarities to the longhouse distributed throughout Southeastern Asia and in the New World.

** * *

Concerning Africa, no dwelling type generally resembling a longhouse has been discovered, although communal houses of different forms are spread throughout the continent. Among the Hova on Madagascar structural details in housing resembled counterparts in Indonesia. But here it is the single-family house, not the multiple-family habitation, which prevails. Apparently, none of the several movements of Indonesian migration to the island and East Africa carried the longhouse with them.
Some Marginal Cases

Several forms of communal dwelling demonstrate structural or functional characteristics approximating those of the longhouse. Whether or not these are to be considered longhouses depends upon definition and personal interpretation. The following is a summary of the most critical of these marginal instances. It should be realized that the presence of seemingly unexplainable variations in structure does not necessarily imply the absence of a clash between supposedly differentiated cultures and the accompanying exchange of technology.

The Long Shelter:

Among some clanless peoples is found a form of communal habitation that in reality is little more than an enlarged leaf shelter. This "long shelter" agrees generally with a true longhouse in its length-width proportions, but is of a quite less solid construction and possesses rounded or oval ends. It is closer to being a simple windbreak than to a substantial frame construction. Such dwellings are not considered to be part of the Malay culture sphere to which the longhouse belongs.

The long shelter is best known among the Semang and Sakai of the Malay Peninsula. Their communal hut consists of two opposite rows of saplings, bent together at the top and fitted horizontally with light poles, thus forming the walls, which are covered with leaves. The two slopes of
the roof do not unite in a ridge pole, but a longitudinal aperture is left the entire length of the roof. Around the walls range sleeping platforms with hearths placed between them. Though this interior arrangement bears a general resemblance to a longhouse interior, it remains more likely that the Malayan long or oval shelter represents a transition from a rounded form in order to accommodate more people. Or perhaps the diffusion of longhouses had an effect on such primitive leaf shelters.

The same type of dwelling occurred sporadically in the past in the Andaman Islands. It was rectangular, 40 feet long and 12 feet wide. The roof was supported by three rows of small posts ranging in height from three feet at the back to six at the front. The interior resembled closely the Malayan long shelter.

Similar constructions occur among the Punan of Borneo and the Batak of Palawan. The long shelter appears to be a feature of Negrito culture.

The Jivaría:

The joint-family house of the Jivaro Indians of the Peruvian and Ecuadorian Montaña was characterized by an interior arrangement unique to communal family habitations in which the men and women occupied opposite ends of the house. Unlike the general longhouse pattern, separation is based upon sex rather than the individual family. This Jivaría was not rectangular, but elliptical in shape,
roughly with a 2 to 1 length-width ratio or 80x40 feet. The side walls were parallel and the ends rounded.

The author has not considered this type of communal dwelling to be a longhouse, the argument being based first-ly, upon the interior arrangement and its functional implications, and secondly, the shape of the house itself. The principle of separation can be better understood by comparing some longhouse ground plans with Figure 16C.

The Maloka:

Another borderline case is present in the Guianas where tribes of the Uaupes River construct the maloka, an abode of numerous families, sometimes an entire tribe. The plan is a parallelogram with a semicircle or oval end at the back. The dimensions of a maloka at Juarite, which contained a dozen families and 100 persons, were 115 x75 feet and 30 feet in height. Thus the proportions represent a transitional 2 to 1 ratio. Nevertheless, the dwelling in question demonstrates an important similarity encountered among longhouses distributed elsewhere - partitions dividing off the rooms for the separate families along the sides of the interior. The significance of this will be discussed later.

The term maloka is used as the name for many communal houses encountered throughout South America. Some are similar to those of the Guiana Indians, while others are obviously not longhouses.
Among the Maori of New Zealand fairly elongated houses were constructed for ceremonial and social meetings, but the actual dwellings more closely approximated a square shape. The latter were the "whare puni" or family sleeping houses. "Whare whakairo" or carved houses served as assembly houses and for ceremonial purposes. According to Firth the usual pattern was for each house to be occupied by a single family; and sometimes, to be shared by a larger group of relatives. But the fact that rectangular extended family houses were in evidence might still lead one to suspect a connection, however vague, with longhouses farther to the west, and possibly with the plank houses of the Pacific Northwest Coast. The existence of a central passage along the interior flanked by sleeping places for separate families, may likewise be of some suggestive value.

Unfortunately, data concerning the presence of the longhouse in Japan and China are relatively non-existent. Bishop has proposed that a direct descendant of Southeast Asian longhouses occurs commonly in central, southern, and especially coastal China:

This form of house is regularly long and narrow, with a gable roof and two storeys, one above the other and each comprising a single row of rooms. About half way up, at the level of the upper floor and extending the entire length of the house-front, is a narrow and slightly projecting veranda or gallery provided with a hand-rail and covered by the overhanging edge of the roof above; on this veranda open the rooms of
the upper tier. At both ends of the house and sometimes inside the individual chambers also are steep flights of stairs. (43)

In principle these features are similar to longhouses south of China, except for one important feature - the lower story is composed of chambers rather than piles supporting the house. Bishop fails to mention the house's function, causing speculation as to whether the dwelling may be a house for related families, a "hotel," or another type of habitation. A comparison of Plate XXX with the others indicates the likelihood that the structure is not the longhouse defined in this study. Note, for example, the extension on the right and the fact that the setting appears to be "urban." On the other hand, one cannot conclude with certainty that the similarities pointed out are not the result of a borrowing of the basic longhouse idea.

A building of identical type occurs in Japan also, being called nagaya - literally, "long house." This too possesses a long narrow veranda along the front and is enclosed below to form two tiers of rooms.

The distinctions made between what may or may not be considered a true longhouse, will hopefully become clearer in the following discussions of form and function.
Footnotes

1. Loeb and Broek, reference.

2. Personal communication with J.O.M. Broek, Department of Geography, University of Minnesota, summer, 1967.

3. Loeb and Broek, op. cit., p. 419.


6. For example, A.E. Jenks, The Bontoc Igorot, Manila, 1905.


8. Ibid., p. 142.


14. Ibid.

15. The palisaded village was characteristic of many long-house cultures in North and South America, including the Iroquois.


18. Ibid., p. 206.


20. The Handbook of South American Indians served as the sole source for mapping the longhouse in South America. While invaluable for the purposes of this study, the descriptions of native housing are often sketchy, due primarily to a lack of data available from early post-Columbian sources.


22. Ibid.

23. W.T. Brigham, The Ancient Hawaiian House, Memoirs of the Bernice P. Bishop Museum, 2 (1903). Many reports, including the Museum monographs, have been reviewed in search of any indication of a Pacific longhouse but have not been incorporated within the bibliography.


25. Ibid., p. 461.


27. Ibid.


33. Ibid., p. 323.
34. Loeb and Broek, loc. cit.
36. Ibid., p. 178.
38. Ibid.
40. Ibid.
41. R. Firth, Economics of the New Zealand Maori, Wellington, 1959, p. 105.
42. For a discussion of the latter problem see T. Heyerdahl, American Indians in the Pacific, Chicago, 1953, pp. 112-13. Heyerdahl's theory on this issue is frowned upon by many scholars, as much of the evidence indicates the improbability of migrations between New Zealand and Northwestern America.
43. Bishop, op. cit., p. 414.
44. Ibid., p. 415.
CHAPTER III

THE PHYSICAL HOUSE

Dimensions

The length of longhouses may vary anywhere from 50 to 1000 feet, sometimes considerably among the same people. This variation can best be explained by the fact that house length is a function of the number of occupants. The more the members, the longer the house. Proportions in width appear to be less significant, although some variation is evident. Most longhouse dwellers retain width proportions that are similar regardless of how long the house may be. Table 1 summarizes the length-width dimensions reported in the literature. The longest houses are characteristic of southern Vietnam and Borneo, which may be due to respective societal customs.

Houses of great proportions have likewise been reported in the Pacific Northwest. Gibbs (1855) mentioned a house at Fort Madison, Seattle that was 520 feet long, 60 feet wide and had 74 posts. Fraser (1808) reports a house on the Fraser River that was 646 feet by 60, while Hill-Tout (1907) saw one more than 1000 feet long. Among the Iroquois, communal houses of 150-250 feet are recorded, but the average dimensions appear to have been 60x18.
<table>
<thead>
<tr>
<th>Tribe</th>
<th>Length (feet)</th>
<th>Width (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Southeast Asia:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dafla</td>
<td>150</td>
<td>18-20</td>
</tr>
<tr>
<td>Garo</td>
<td>25-260</td>
<td>15-40</td>
</tr>
<tr>
<td>Mishmir</td>
<td>40-200</td>
<td>10-12</td>
</tr>
<tr>
<td>Kachin</td>
<td>100-200</td>
<td>20-40</td>
</tr>
<tr>
<td>Palaung</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Black Thai</td>
<td>240</td>
<td>80</td>
</tr>
<tr>
<td>Moi</td>
<td>260-1000</td>
<td></td>
</tr>
<tr>
<td><strong>Indonesia:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mentawei Islands</td>
<td>180-200</td>
<td>30-40</td>
</tr>
<tr>
<td>Tenggerese</td>
<td>60-70</td>
<td>16-20</td>
</tr>
<tr>
<td>Kayan</td>
<td>200-1200</td>
<td>30-60</td>
</tr>
<tr>
<td>Murut</td>
<td>60-150</td>
<td>30-35</td>
</tr>
<tr>
<td>Iban (Sea Dyak)</td>
<td>200-770</td>
<td>20-60</td>
</tr>
<tr>
<td>Land Dayak</td>
<td>300</td>
<td>30-40</td>
</tr>
<tr>
<td>Dusun</td>
<td>240*</td>
<td>20*</td>
</tr>
<tr>
<td><strong>New Guinea:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Dutch</td>
<td>150-200</td>
<td>20-25</td>
</tr>
<tr>
<td>North Coast</td>
<td>60-70</td>
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</tr>
<tr>
<td>Purari Delta</td>
<td>50-100</td>
<td></td>
</tr>
<tr>
<td>Fly River</td>
<td>100-500</td>
<td></td>
</tr>
<tr>
<td>Kiwai</td>
<td>80-500</td>
<td>26-40</td>
</tr>
<tr>
<td><strong>North America:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iroquois</td>
<td>50-300</td>
<td>15-30</td>
</tr>
<tr>
<td>Nyack</td>
<td>60</td>
<td>14-15</td>
</tr>
<tr>
<td>Virginia Indians</td>
<td>50-150</td>
<td></td>
</tr>
<tr>
<td>Pacific Northwest</td>
<td>50-1000</td>
<td>25-60</td>
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<tr>
<td>Jirara &amp; Airico</td>
<td>200</td>
<td>30</td>
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<td>Mundurucu</td>
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<td>Tupinamba</td>
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<td>Zaparoan</td>
<td>300</td>
<td>75</td>
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<tr>
<td><strong>Neolithic Europe</strong></td>
<td>33-136</td>
<td>19-26</td>
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</table>

* Refers to single structure only. Where the Dusun long-house is still encountered, dimensions are considerably smaller.
Materials

Although the common materials, at least in Southeast Asia and the Indies, are bamboo, matting, and thatch; few if any universal rules can be effectively applied to the type of house material. The materials used in construction show a variance with locality. And as most longhouse dwellers congruently inhabit heavily forested areas, the dominance of bamboo longhouses can be said to correspond as much to the distribution of the bamboo plant itself. The argument is supported further by the fact that bamboo construction is characteristic of general housing patterns in Southeast Asia, whether the longhouse be present or not.

Besides bamboo, the use of wooden planks in house construction is found in parts of Indonesia and on the Pacific Northwest Coast of North America. The houses of the Borneo Kayan, for example, contrast with those of the Iban, who construct a framework of many light poles rather than heavy hardwood timbers, as do the Kayan. A floor of split bamboo takes the place of huge planks (Compare Plates XX and XXV). Among the Garo of Assam bamboo serves as the usual material for houses, yet the Atong, a Garo tribe of the Someswari Valley, build with heavy timbers. Again, the Iban construct bamboo flooring according to the usual pattern, but often use one of the many varieties of "ironwood" for the uncovered portion of the veranda so as to withstand exposure to weather.
<table>
<thead>
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<th>Tribe</th>
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<th>Roof</th>
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<tr>
<td>Dafla</td>
<td>flattened bamboo</td>
<td>thatched grass, banana or cane</td>
</tr>
<tr>
<td>Garo</td>
<td>bamboo matting</td>
<td>thatched grass, leaves or cane</td>
</tr>
<tr>
<td>Mishmir</td>
<td>bamboo</td>
<td>thatched grass</td>
</tr>
<tr>
<td>Kachin</td>
<td>split bamboo</td>
<td>thatched grass</td>
</tr>
<tr>
<td>Karen</td>
<td>split bamboo, round bamboo for corridor</td>
<td>bamboo</td>
</tr>
<tr>
<td>Palaung</td>
<td>bamboo poles</td>
<td>thatched grass</td>
</tr>
<tr>
<td>Cham</td>
<td>bamboo poles</td>
<td>thatched grass</td>
</tr>
<tr>
<td>Moi</td>
<td>split bamboo</td>
<td>thatched grass</td>
</tr>
<tr>
<td>Indonesia:</td>
<td></td>
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</tr>
<tr>
<td>Minangkabau</td>
<td>bamboo or wood(?)</td>
<td>leaves</td>
</tr>
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<td>Mentawai Is.</td>
<td>planks</td>
<td>sago leaves</td>
</tr>
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<td>Tenggerese</td>
<td>planks</td>
<td>thatched nipa palm, ironwood shingles</td>
</tr>
<tr>
<td>Iban</td>
<td>split bamboo, ironwood for veranda</td>
<td>nipa thatch</td>
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<td>Land Dayak</td>
<td>split bamboo, planks</td>
<td>ironwood shingles</td>
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<td>Kayan</td>
<td>planks</td>
<td>bamboo tiles or palm leaves</td>
</tr>
<tr>
<td>Murut</td>
<td>bamboo</td>
<td></td>
</tr>
<tr>
<td>Dusun</td>
<td>bamboo</td>
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<td>thatched palm</td>
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<td>Iroquois</td>
<td>earth covered with matting</td>
<td>bark</td>
</tr>
<tr>
<td>Nyack</td>
<td>earth covered with matting</td>
<td>reed &amp; bark</td>
</tr>
<tr>
<td>Virginia Indians</td>
<td>earth covered with matting</td>
<td>bark</td>
</tr>
<tr>
<td>Pacific N.W.</td>
<td>planks or earth</td>
<td>planks and bark</td>
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<td>Tribe</td>
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<td>Roof</td>
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<tr>
<td>South America:</td>
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<tr>
<td>Apiaca</td>
<td></td>
<td>thatched sape leaves</td>
</tr>
<tr>
<td>Araona</td>
<td></td>
<td>thatched grass</td>
</tr>
<tr>
<td>Betoí, Jirara &amp; Airico</td>
<td></td>
<td>or palm leaves</td>
</tr>
<tr>
<td>Guarani</td>
<td></td>
<td>thatched grass, palm leaves or bark</td>
</tr>
<tr>
<td>Mundurucu</td>
<td></td>
<td>thatched palm leaves</td>
</tr>
<tr>
<td>Tupinamba</td>
<td>earth covered with matting</td>
<td>thatched palm leaves</td>
</tr>
<tr>
<td>Neolithic Europe</td>
<td>wood</td>
<td>thatch</td>
</tr>
<tr>
<td>Tribe</td>
<td>Walls</td>
<td>Framework</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>Southeast Asia:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dafla</td>
<td>twilled matting</td>
<td>timber</td>
</tr>
<tr>
<td>Garo</td>
<td>bamboo matting</td>
<td>timber</td>
</tr>
<tr>
<td>Mishmir</td>
<td>bamboo</td>
<td>timber</td>
</tr>
<tr>
<td>Kachin</td>
<td>bamboo matting or poles</td>
<td>timber</td>
</tr>
<tr>
<td>Karen</td>
<td>bamboo</td>
<td>timber</td>
</tr>
<tr>
<td>Palaung</td>
<td>bamboo matting, planks</td>
<td>timber</td>
</tr>
<tr>
<td>Cham</td>
<td>bamboo poles</td>
<td>timber</td>
</tr>
<tr>
<td>Moi</td>
<td>woven bamboo or cane</td>
<td>timber</td>
</tr>
<tr>
<td><strong>Indonesia:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minangkabau</td>
<td>bamboo or wood(?)</td>
<td>timber</td>
</tr>
<tr>
<td>Mentawei Is.</td>
<td>planks</td>
<td>timber</td>
</tr>
<tr>
<td>Tenggerese</td>
<td>planks</td>
<td>timber</td>
</tr>
<tr>
<td>Iban</td>
<td>thatched nipa palm, planks</td>
<td>light poles</td>
</tr>
<tr>
<td>Land Dayak</td>
<td>planks</td>
<td>timber</td>
</tr>
<tr>
<td>Kayan</td>
<td>planks</td>
<td>timber</td>
</tr>
<tr>
<td>Murut</td>
<td>bamboo, bark (?)</td>
<td>timber</td>
</tr>
<tr>
<td>Dusun</td>
<td>bamboo</td>
<td></td>
</tr>
<tr>
<td><strong>New Guinea:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Coast</td>
<td>planks</td>
<td>timber</td>
</tr>
<tr>
<td>Purarari Delta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kiwai</td>
<td></td>
<td>timber</td>
</tr>
<tr>
<td><strong>North America:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iroquois</td>
<td>bark</td>
<td>light poles</td>
</tr>
<tr>
<td>Nyack</td>
<td>reed &amp; bark</td>
<td></td>
</tr>
<tr>
<td>Virginia Indians</td>
<td>bark</td>
<td></td>
</tr>
<tr>
<td>Pacific N.W.</td>
<td>planks</td>
<td>timber</td>
</tr>
<tr>
<td><strong>South America:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apica</td>
<td>wood</td>
<td></td>
</tr>
<tr>
<td>Guarani</td>
<td>wood, earth</td>
<td></td>
</tr>
<tr>
<td>Mundurucu</td>
<td>earth or bark</td>
<td></td>
</tr>
<tr>
<td>Tupinamba</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Neolithic Europe:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>split timber, wattle &amp; daub</td>
<td></td>
</tr>
</tbody>
</table>
A more likely indicator of genetic relation between widely distributed longhouse forms is the material nature of the house roof. With the exception of the Iroquois and the Northwest Coastal Indians, a thatched roof is universal, whether the thatch be of palm leaves or of grass. The Iroquois and Pacific Coast Indians commonly utilized tree bark as a roof covering.

The use of earthen walls appears to be a local development in South America only, being reported among the Guarani, Chiriguano, and Mundurucu.

Tables 2 and 3 record as closely as possible the main materials utilized in longhouse construction. An inspection of the data indicates that materials are not particularly critical as possible distribution-diffusion criteria. The apparent similarities become clouded by the similar material nature of other forms of housing, and certainly, by local variation.

Methods of Construction

Elevation on Piles:

The distribution of stilt or pile housing is in need of considerable investigation. Several writers have suggested a relationship between widely distributed forms, particularly where the nature of the terrain would seem inappropriate. As to the longhouse, there may be a close connection between its distribution and this peculiar practice. Some are of the opinion that the initial pile-
dwellings were in fact, longhouses:

The origin (of stilt housing) lies probably among the Neolithic peoples of mainland Southeast Asia, including what is now southern China. Around 2000 B.C., if not earlier, they moved east into the island world and north along the coast of China toward Japan. In the archipelago these peoples are usually identified as Malaysians or Indonesians. (8)

The pile-built longhouse is universal in Southeast Asia, Indonesia and in New Guinea, although the amount of elevation above the ground varies. In the New World, only some South American tribes built upon posts, as in Venezuela, the others constructing their houses entirely on the ground. The elevated longhouse was totally absent from North America, probably because of differences in physical habitat. In Neolithic Europe longhouses of the central loess lands possessed raised wooden floors, indicating at least in principle, the presence of elevation.

No general rule can be applied to the height of elevation, the latter varying with tradition, necessity, etc. The usual height approximates 4-10 feet. The pattern in Assam and Burma is for piles to be 2-4 feet in height, while some tribes in Borneo elevate their houses as much as 20, and sometimes 40 feet above the ground level. (See Plate XXIII).

The use of piles protects against dampness and sudden rising of rivers, entrance of insects or wild animals, odors of refuse below, storage of household paraphernalia,
and serves to raise the house in order to keep domestic animals below. Examples of extreme cases are likely representative of defensive measures taken to protect against enemies. In most cases the reason for building on stilts may no longer be considered rational, as the present distribution is representative of deeply ingrained custom. Observe, for example, Plate XI; where construction on a hill spur would seemingly exclude the necessity of stilts.

An unusual pattern found in parts of Burma and Assam is exemplified in Plate VII. In such cases the house extends over the spur of a hill, creating in effect, a "partial" pile-built dwelling.

The material utilized in piling is usually of the hardwood variety, although bamboo is occasionally employed. The diameter of the posts may vary from several inches to several feet. The Kayans constructed very thick posts in the past to minimize the chance of cutting during warfare. Implantation occurs in rows, but more generally the pattern is irregular. Longhouse piling can either support the platform upon which the house rests or in some cases it may extend through the flooring and continue to the roof.

There appears to be a widespread regularity in the manner of planting of piles in the ground. How much of this similarity may be due to technique diffusion and how much to common sense is problematical. The usual method is to ease the post into a hole using a flat or rounded
board as a lever or roller, respectively. Common throughout Borneo is the insertion of two flat planks at the base of the pile to secure the latter more firmly in the ground. The same technique is utilized in Assam and has been reported as formerly in existence on the Northwest Coast of America for the securing of house posts.

Framework:

The most obvious and universal framework components are a ridge pole running along the roof crest and large interior posts supporting the roof. One might suspect that the specifics concerning these and other framework principles should offer evidence on either side of the diffusion issue. The argument may contend that because the framework is so "fundamental" to longhouse construction, it is least likely to change over time; and if any dispersal of technique occurred, over place.

Unfortunately, few anthropologists or geographers concurrently possess either the interest in or the knowledge of basic architectural design; and not many longhouse chroniclers were actually present when the framework was being constructed. Consequently, the literature offers only a sketchy outline of the overall problem.

Evidence that dissimilarity in framework construction does not necessarily imply an absence of cultural borrowing is provided by Pollard and Banks. They point out that Kenyahs of the Baram district in Borneo originally came
from Batang; and that their efforts to remember what a real Batang house was like resulted in unusual variances. One of the newer houses possessed two cross beams instead of one, as in the old style; while several others had dispensed with the Batang practice of constructing a row of posts down the center of the veranda. Another innovation was that termed a "double-cantilever" principle in which the main cross beam is not supported on posts, thus receiving the downward pressure of the rafters. Both the Batang and Baram styles are represented in Figure 5. The above authors point out with other examples that the result of borrowing is often unsuccessful and is responsible for interesting framework imitations. Figure 6 shows two forms of Kaya' frame, both similar yet demonstrating evident variation.

Uniformity with slight variation is the case concerning interior postal arrangement. The general rule includes a row of posts along the middle of the interior and supporting the ridge pole, with rows of posts along the sides, supporting the rafters and outer walls. The central post pattern is reported among the Murut of Borneo, Kachin of Burma, Purari natives of New Guinea, in South America among the Guarani, the Northwest Coastal Nootka, and in Neolithic Europe. There are exceptions to this widespread regularity, however, as evidenced by the existence of longhouses without a central row of posts, as in the
FIGURE 5
Framework Construction

Kenyah
Batang District

Kenyah
Baram District

Source: F.H. Pollard and E. Banks, 1937.
FIGURE 6
Framework Construction

Source: F.H. Pollard and E. Banks, 1937.

case of the Salish of British Columbia, the Karewa and Kiwai of New Guinea. The variant pattern maintains the ridge pole, but house posts are arranged in rows, usually one or two, along the sides. Haddon remarks that the Cambridge Expedition observed the lateral post method of roof support in Kiwai and the Fly Delta only; and that the shorter houses of the eastern and central portions of New Guinea seemed better adapted to the median post method of construction.

Only in the Iroquois longhouse and possibly in the case of some South American tribes is there an absence of the large, interior postal arrangement. The Iroquois framework consisted of forked-top poles set upright in the ground in the form of a rectangle and bound together with cross poles. Bending a series of saplings from one side to the other formed a rounded or arched roof. Unlike regular longhouse structure, no ridge pole or rafters were used, even in the case of an angled roof crest. Similar constructions occurred in the case of the Nyack and the Virginia Indians.

Flooring:

Except for those instances in the New World wherein houses may be built upon the ground, mats serving as the only protection; substantial floor construction corresponds with the distribution of the stilt or elevated longhouse.

In Indonesia and Southeast Asia a singular method of
FIGURE 7
Cross Section of
Floor Construction
(frontal view)
floor construction is widespread. The practice can be defined in two stages. Cross poles are attached to the house piling and the floor is constructed on top of these poles (See Figure 7). The distribution in Assam, Burma, Indochina, Borneo and New Guinea of identical techniques makes the probability of cultural connection likely.

Two examples, the first from Burma and the second from New Guinea, offer comparison:

Holes are chopped through these large uprights (piles) at a height of from six to eight feet above the ground, and pins are thrust through on which bamboo girders of the same size are fastened by means of withes. At right angles to these girders and resting on them, other bamboo poles, slightly smaller in size, are tied at regular intervals of about a cubit to form the floor joists. The floor is made of large bamboos, split, flattened out, and secured to the joists by means of withes of the same material. (29)

The top of each (pile) had been worked into a concave form so as to give support to longitudinal beams. Transverse joists crossed these at intervals of about two feet, more longitudinal poles were tied to these joists and upon them was laid transversely split nipa palm, the convex surface being uppermost. The floor was thus exceedingly compact and somewhat resilient. (30)

It would be of significance to determine whether or not the pile-built longhouse of South America possessed any similarity in detail to that noted above.

Roof Construction:

Whether the roof materials be of thatched palm, planks, or of bark, the general rule of construction entails the overlapping of sections to provide protection
against the elements. An Iban roof is composed of thatched leaves of the nipa palm made into "attap." The latter are made by doubling the leaves over a stick about six feet long, each leaf overlapping the other, and sewn down with split cane or reeds. These "attap" are arranged in rows, each overlapping the one beneath it. Similar methods are employed throughout New Guinea; and apparently were used in South America. . . "The structure (Tupinamba longhouse) was thatched with leaves of pindo palm, patiaba, or capara artfully sewn or woven together so as to be entirely waterproof."

In other cases bamboo tiles are applied rather than thatch. A common Murut roof consists of tiles made from the stems of bigger bamboos split in half and set in a double layer, the upper layer covering the crevices in the lower. The Karen of Burma construct their roofing in an identical manner.

The Iroquois house was covered with bark shingles, perforated and sewn on in overlap. Outside poles were lashed to the structure to permit tighter security, in a similar fashion to some Southeast Asian structures. On the sides the grain of the bark ran parallel to the ground and on the roof it was laid at right angles to the roof crest; an opposite manner to that involved in the laying of roof planks among the Salish and Nootka.

A certain amount of regularity is evident in the con-
FIGURE 8
Cross Section of Roof Construction

- Roof
- Ridge pole
- Rafters
- Transverse beam
- Longitudinal beam
- Post
- Floor
struction of interior roof support, at least as to the few
detailed descriptions available. Commonly, beams are
placed lengthwise atop the house posts; other beams run-
ning across the house-width (Figure 8). Rafters are con-
ected to or laid from the ridge pole. Not only in Burma,
Borneo, and New Guinea has this method been reported, but
it was used in the Pacific Northwest as well. As noted
earlier, however, the availability of technical construc-
tion data does not match the overall longhouse distribu-
tion. It is thus unfortunate that we can do no more than
admit to a likelihood of widespread similarity concerning
the above technique.

* * *

The joining of timbers may be accomplished in one of
two ways—binding by means of palm or cane strips, or
through the practice of notching and morticing. At times
both may be used in conjunction, whether to secure differ-
ent portions of the house or identical fixtures. In either
case there is probably no definite relationship to the
longhouse as such; both methods being employed in the
building of other house forms.

Roof Type

The several forms of longhouse roof type are demon-
strated in Figure 9 and delimited in Figures 10-12. The
European longhouses have not been mapped, but were of the
triangular gabled type. Five types have been suggested,
FIGURE 9

Roof Types

A

Triangular Gabled

B

Sloping Eaves

C

Barrel-Roof (1)

D

Barrel-Roof (2)

E

Shed Roof
Yet fundamentally, it is possible to distinguish only three - an angled roof (Figure 9A and 9B), a barrel-roof (Figure 9C and 9D), and a shed or flat roof (Figure 9E). The seemingly dramatic differences in principle between them may well be an argument against longhouse diffusion; or an indication of innovation. The two forms of angled (peaked) roof are not confined to the Indies and the Asian continent, but appear throughout scattered portions of the Americas as well. Conversely, the barrel (rounded or arched) roof would be a local development in the Americas.

It will be proposed that if diffusion of the longhouse occurred, it likely took place by means of a west to east movement. With this proposition in mind we note a significant pattern in roof type distribution. In Southeast Asia only the angled form occurs. In Indonesia and New Guinea, the angled roof is present, variant forms existing in Sumatra and possibly on other islands. The Americas present a pattern in which all forms are evident - angled, rounded, and flat. The suggestion is that the distribution seems to support a west-east diffusion theory, i.e., survival combined with innovation.

Furthermore, the least amount of variation occurs in Southeast Asia, giving support to a theory of origin somewhere in this area. At what point on the map innovation may have taken place must remain unanswered; although it is likely that the sloping eaves form of angled roof developed
out of the triangular gabled form. In principle it is essentially similar to the latter, but the eaves descend to within several feet of ground level.

A further argument favoring diffusion is the fact that all longhouses, excepting the shed roof houses of the coastal strip, are gabled structures. This factor alone may be enough to propose genetic similarity as several accounts have suggested.

Among the Iroquois both angled and rounded forms were utilized. This could mean that roof type differentiation is not significant as a diffusion criteria. Peet has argued that the peaked roof depicted by Morgan (Plate I), taken from the "Journal of a Voyage to New York" (1676) was less representative of prehistoric times than the rounded roofs shown in the picture of a fort (Plate III) from Champlain's time (1615).

As with several preceding issues concerning physical house character, South America offers a problem due to incomplete or uncertain data. In this respect, the dominant roof type was likely the barrel or rounded variety, particularly among the Tupian tribes of the Amazon; yet only three can be delimited with certainty.

Tocantins, in describing the Mundurucu village of Absenanti, refers to a thatched roof which consisted of a simple leaning wall slanting down. Stromer describes the house as having a roof sloping to the ends and sides, and
with rising peaks at each end of the roof crest (as with the Minangkabau of Sumatra); but in a later publication he speaks of the house as dome-shaped. In the 1850's Bates found that most of the houses had conical roofs with eaves extending halfway to the ground. Murphy reports steeply pitched roofs with eaves terminating five feet from the ground. Thus the Mundurucu pattern ranges anywhere from a barrel-roof to one with sloping eaves, perhaps with rising peaks at each end of the roof crest. Part of the problem consists of determining the earliest reported accounts and supposing that such represents most closely, pre-Columbian times. Plate IV demonstrates that the barrel-roof was present in South America at the time of early European contact.

Other accounts are even more confusing. The Apiaca roof is said to have rested on straight or arched rafters and to have descended to within five feet of the ground, while of the Guayupe it is known only that the roof sloped to ground level.

In conclusion, the wide distribution of the angular roof should again be emphasized, as should its dominance in Southeastern Asia. Many diffusion theorists have argued that the widest distribution of a particular form of cultural element is indicative of the most distant age for the element. And according to Childe, an item which differs in form from its counterparts and is concentrated in a
FIGURE 10
ROOF TYPE
S.E. ASIA

- TRIANGULAR GABLED
- SLOPING EAVES

APPROX. SCALE IN MILES
0 300 600
FIGURE II
ROOF TYPE
INDONESIA

- TRIANGULAR GABLED
- SLOPING EAVES
- V VARIANT FORM

APPROX. SCALE IN MILES
0  500  1000
particular area, can be safely inferred as originating there.

Ground Plan

If any aspect best indicates historical connection among longhouses, it is interior arrangement or subdivision (See Figures 13-15). There are reasons to believe that a relationship exists and is based upon two probabilities - firstly, the wide distribution of a limited ground plan pattern; and secondly, the supposition that a variety of floor arrangements should be possible.

The most widely distributed form, that posed as perhaps representing the original pattern, has been termed the "central corridor type." Commonly, a passage runs throughout the interior of the longhouse and down the center, family compartments opening to it and being arranged along the sides. The "side corridor" plan permits a single rather than double row of family chambers arranged along one side only. Compartments open into a passageway, which in some cases serves jointly as a communal gathering area. The space fronting the family cubicles is often divided into several defined functional portions.

In most instances family compartments are determined by partitions (Plate XIV). At other times the cubicles are completely walled in, doors being used for access (Plate XX). In either case the principle of ground plan separation remains the same. Family hearths usually occupy a
space within individual compartments, but arrangement along the passageway is not uncommon. The Iroquois house contained fires along the center of the common corridor, one fire serving the purposes of two opposite-facing families. An identical arrangement existed in the Pacific Northwest.

While common corridor and private compartments constitute the most obvious ground plan elements, the arrangement of verandas and platforms conforms to a general scheme, varying between frontal and lateral position.

The distribution of pile-built longhouses with platforms extending beyond the ends of the roof is considered by Peal as being indicative of survival rather than local spontaneity. His suggestion is given credence by the fact that such platforms, upon second glance, may represent more than simple wooden projections. In New Guinea the term "platform" applies to a social unit originating from a platform in the literal sense. To each platform there belongs a social group, composed of a number of men and their families.

Another similarity found in Assam, Vietnam, New Guinea and Borneo, is the construction of a loft directly below the roof in which tools and food are stored and occasionally used as a sleeping place for unmarried girls. Metraux mentions the presence of a loft in South America for the Chiriguano.
FIGURE 13
GROUND PLAN
S.E. ASIA

1 CENTRAL CORRIDOR, DOUBLE COMPARTMENT ROW
2 SIDE CORRIDOR, SINGLE COMPARTMENT ROW

APPROXIMATE SCALE IN MILES
0  300  600
FIGURE 15
GROUND PLAN
AMERICAS

CENTRAL CORRIDOR,
DOUBLE COMPARTMENT ROW

APPROX. SCALE IN MILES
0  1200  2400
Concerning ground plan distribution, the prevalence of only two basic forms and the dominance of the central corridor have already been noted. In the Americas, it is difficult to suggest just what the extensive occurrence of central-corridorred longhouses may indicate; particularly since one cannot conclude with certainty that the single row plan was never in evidence in South America. On the other hand, its presence demonstrates evidence of a connection with Indonesia and Southeast Asia.

The presence of two distinct forms of Iroquois longhouse (Plates I and II), both of which possess identical interior arrangements, may well suggest that exterior form can change while interior plan remains constant.

In Europe a certain amount of speculation is involved in determining how the interiors of these long-since extinct houses were arranged. Posts in the five axial rows formed a row across the house and might therefore have supported transverse walls, but reliable traces of such partitions have not been recovered. A row of four hearths was observed in a house at Postoloprty; these being arranged not down the center, but between the posts of an intermediate row.

The "longhouses" of a later period in Denmark (Childe suggests a thousand years) offer a more substantial representation. A village in Jutland consisted of two parallel rows of contiguous apartments on either side of an open
space. Both rows contained 29 apartments and were 85 meters long. The width, including the open space (likely a central corridor), approximated 16 meters.

Figures 16-22 demonstrate a variety of plans, many suggesting a considerable amount of similarity.

* * *
FIGURE 16

Ground Plan

A

\[ \begin{array}{c}
\text{b} \\
\text{a} \\
\text{b} \\
\end{array} \]

North America: Plan of Onandaga Iroquois longhouse, 80x17 feet. After Bartram (1743).
\text{a-common passage b-apartments c-shed}

B

North America: Ground plan of Ncerchokioo, under single roof, with central passage, 226x30.
Columbia River District. After Lewis & Clarke (1805-06).

C

South America: Jivaro communal house.
\text{a-women's portion b-men's portion}
Source: M.W. Stirling, 1938, p. 88.
Malay Peninsula: Semang long shelter at Siong, Kedah, showing sleeping places with hearth between each.

a-corridor b-compartment c-veranda
Dots represent hearths.
Source: N. Van Huyen, 1933, p. 59.

Sumatra: Minangkabau house. a-corridor
b-compartment c-communal room (subdivision by author)
Source: N. Van Huyen, 1933, p. 66.
FIGURE 18
Ground Plan

A

Sumatra: House of the Karo-Batak.
a-verandas b-corridor c-compartment
Source: N. Van Huyen, 1933, p. 63.

B

Mentawai Islands: a-front platform b-communal
room c-compartment d-corridor e-back platform
(subdivision by author)
Source: N. Van Huyen, 1933, p. 152.

C

Borneo: Plan of a Murut house, 130x30.
a-compartment b-corridor c-dancing floor
d-common room e-guest chamber
Source: O. Rutter, 1929, p. 63.
FIGURE 19

Ground Plan

A

| a | b | c | d | e |

Borneo: Murut house, Kampong Mesapoh.
a - compartments b - general floor, passageway
c - dancing floor d - space for dancing, drinking
e - guest sleeping area

B

| a | y | c | d |

a - biliks or compartments b - tempuan or common passage
c - ruai or common covered veranda d - tanju or uncovered veranda, drying platform

C

| a | c | b |

Celebes: Toradja house. After A. C. Kruyt.
a - compartments b - corridor c - entrance in floor
Source: N. Van Huyen, 1933, p. 95.
FIGURE 20
Ground Plan

Tanimbar: a-compartments b-corridor
Source: N. Van Huyen, 1933, p. 117.

New Guinea: Kerewa longhouse or Dubu-Daimo.
a-verandas b-corridor, ceremonial hall
c-compartments d-exits and entrances
Source: R.A. Woodward, 1922, p. 44.
FIGURE 21

Ground Plan

A

Indo-China: Moi house. a-compartments b-corridor c-platform
Source: N. Van Huyen, 1933, p. 39.

B

Indo-China: Variant, oval ended form of the Moi longhouse. a-partitioned sleeping places b-corridor c-verandas
Source: N. Van Huyen, 1933, p. 130.

C

Peal's theory of historical connection between the central corridor plan and a village layout consisting of detached single-family huts.
co-communal area m-married quarters
Adapted from S.E. Peal, 1892, p. 269.
FIGURE 22
Ground Plan

Burma: Karen house, Tharrawaddy District.
a-compartment b-corridor c-back verandas

Assam: Dafla house, 150x20.
a-compartment b-corridor c-front platform
d-back platform
### Miscellaneous Features

Among the more curious parallels encountered regularly from Assam to New Guinea concerns the entrance facilities to the houses. Occasionally, rude wooden or bamboo steps serve occupants as a means of exit and entrance. Yet a more common pattern is created through the use of ladders formed of a single log or tree trunk in which notches are cut and used as steps. These notched-logs (Plates XVI and XIX) probably carry a definite relationship to the long-house, although they are possibly utilized with other types of habitation. Sloped at an angle, they attain a length of 10-20 feet, depending upon the height of the house piling; and in some instances, 100-200 (Plate XXIII).

According to Freeman these house connections are looked on by the people as a kind of portal connecting the long-house with the outside world. "By this route good and evil may come to the inhabitants, but by ritual it is possible to consecrate the tangga so that it carries good fortune into the house." This belief is perhaps useful in explaining the wide distribution of the notched-log, assuming that deep-rooted ritualism can be partly responsible for cultural survival. The presence of the notched-log is reported in use in South America by the Oyampi, a Tupian tribe who constructed stilt houses several feet above the ground.

Plates VII and XVIII demonstrate another similarity
encountered in Southeast Asia and the Indies, somewhat less widespread than the log ladder noted above. This phenomenon, pointed out by Evans, entails the crossing of two pieces of wood at each end of the roof crest, forming in essence a set of "horns." That these are due to diffusion seems likely. Lewis claims a functional implication for them in Burma, where at high elevations during strong winds, such projections may serve to strengthen the roof. A close examination of the houses at Koln-Lindenthal (Plate XXXII) reveals that house-horns may well have been in evidence. If such be the case, the fact of their presence in an area so far removed from Asia, is worthy of at least preliminary speculation.

The arrangement of entrances (doors) is the result of necessity more than anything else. The only regular pattern evident is a location at both ends of the house, in most cases corresponding to the common corridor. In longer houses a greater number of doors are provided along the sides. In some cases separate back entrances serve individual families.

Among other parallels include similar practices in house decoration - the carving and decorating of house posts with the horns or heads of deer, cattle or boar, the carving and painting of animals representing clans of the inmates on walls and doors. Several writers have suggested a comparison between frontal house posts encountered in
Southeast Asia and parts of the Indies, and the totem poles before the longhouses of the Pacific Coast of North America. Such pillars, termed "kapatong" in Borneo, may be carved in the form of a human, representing a deceased person.

The use of chimneys for expulsion of smoke is apparently confined to North America and Europe (Plates I and XXXIII). In Borneo, longhouses not open along one side, often employ a large flap cut in the roof and propped open by means of a long pole (Plate XXIII).

In conclusion, another practice found regularly is that of adding extensions to the structure in order to accommodate new occupants. This procedure is claimed for the 59 60 61 Ngadju (Borneo), Minangkabau and Karo-Batak (Sumatra), 62 Palaung (Burma) and the Iroquois, among others.
Footnotes

1. The tendency to occupation by many families perhaps relates to mode of social organization; perhaps to "culture" in general, as it may effect numbers of people.


6. E.H. Gomes, Seventeen Years Among the Sea Dyaks of Borneo, Philadelphia, 1911, p. 43.

7. A. Metraux, La Civilisation Matérielle Des Tribus Tupi-Guarani, Paris, 1928, table on p. 56. Metraux notes (p. 55), however, that the "ancient" or pre-Columbian Guarani probably did not construct earthen walls.


15. Ibid., p. 404.


18. F.E. Williams, The Natives of the Purari Delta, Port Moresby, 1924, p. 29.

19. Steward, op. cit., p. 82.


25. Ibid., p. 115.


27. Morgan, loc. cit.


30. Haddon, op. cit., p. 112.

31. Steward, op. cit., p. 103.

32. Rutter, loc. cit.


34. Drucker, op. cit., p. 70.


36. Cutting or grooving of beams to receive fitted pieces.

37. A gabled roof forms a triangular or semi-circular portion at each end, from the level of the eaves to the ridge of the roof.


40. A.M.C. Tocantins, "Estudos Sobre a Tribu 'Mundurucu'," Revista Tri-mensal do Instituto Historico Geografico e Ethnographico do Brazil, 40 (1877), p. 78.


42. Ibid., p. 275.


44. This particular form of roof, commonly referred to as curved or saddle-backed, has a wide distribution in Asia, Indonesia and the Pacific among variant housing patterns.


46. Ibid., Vol. 4, p. 386.


48. A relationship between the two forms is suggested. The single-row compartment type dispenses with cubicles along one side, in a sense becoming "opened" to permit lounging, working, ceremony, etc.


52. Metraux, op. cit., p. 55.


54. Ibid., p. 260.

56. Metraux, loc. cit.


59. Miles, op. cit., p. 54.


62. Loeb and Broek, op. cit., p. 418.
CHAPTER IV

THE HOUSE AND SOCIETY

Village Structure

As mentioned in previous discussion, the number of longhouse dwellers may be correlated with dwelling length and vice-versa. This general rule becomes slightly modified, depending upon whether the house is partitioned along one side only or along both. Information concerning number of families and number of occupants for those tribes reported is summarized in Table 4. The wide variation would appear to be a result of population amount; as well as the number of longhouses forming a particular village. Villages where the single house contains the entire population tend to create greater dimensions for the house in question.

A Borneo missionary has confirmed to the author a Kenyah longhouse at Long Nawang in west Borneo containing 500 doors (family compartments) with a population of over 4000. Considering that the Kenyah ground plan permits for the arrangement of family rooms along one side of the house, it is highly probable that the structure in question is the longest in existence.

Each longhouse community represents an autonomous entity not subject to control from without and presided over
<table>
<thead>
<tr>
<th>Tribe</th>
<th>Families</th>
<th>Occupants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southeast Asia:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dafla</td>
<td>10-16</td>
<td>50-80</td>
</tr>
<tr>
<td>Mishmir</td>
<td>16-32</td>
<td>80-160</td>
</tr>
<tr>
<td>Karen</td>
<td>20-30</td>
<td>100-150</td>
</tr>
<tr>
<td>Kachin</td>
<td>6-10</td>
<td>30-50</td>
</tr>
<tr>
<td>Palaung</td>
<td>6-8</td>
<td>30-40</td>
</tr>
<tr>
<td>Moi</td>
<td>20-40</td>
<td>100-200</td>
</tr>
<tr>
<td>Indonesia:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gajo</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Karo-Batak</td>
<td>4-12</td>
<td>20-100</td>
</tr>
<tr>
<td>Minangkabau</td>
<td>14-16</td>
<td>70-80</td>
</tr>
<tr>
<td>Mentawei Islands</td>
<td>12-40</td>
<td>60-200</td>
</tr>
<tr>
<td>Kayan</td>
<td>40-120</td>
<td>200-600</td>
</tr>
<tr>
<td>Kenya</td>
<td>500*</td>
<td>4000*</td>
</tr>
<tr>
<td>Land Dayak</td>
<td>30-40</td>
<td>150-200</td>
</tr>
<tr>
<td>Murut</td>
<td>8-20</td>
<td>40-100</td>
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<tr>
<td>Iban</td>
<td>4-70</td>
<td>20-350</td>
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<tr>
<td>Toradja</td>
<td>6-12</td>
<td>30-60</td>
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<tr>
<td>Manggarai</td>
<td>60</td>
<td>200</td>
</tr>
<tr>
<td>New Guinea:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kiwai</td>
<td>36**</td>
<td>180**</td>
</tr>
<tr>
<td>North America:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iroquois</td>
<td>5-22</td>
<td>25-110</td>
</tr>
<tr>
<td>Nyack</td>
<td>7-8</td>
<td>25-35</td>
</tr>
<tr>
<td>Pacific Northwest</td>
<td>6-50</td>
<td>30-500</td>
</tr>
<tr>
<td>South America:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Araona</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Chiriguano</td>
<td>30</td>
<td>150</td>
</tr>
<tr>
<td>Guarani</td>
<td>10-12</td>
<td>50-60</td>
</tr>
<tr>
<td>Guayupe</td>
<td>30</td>
<td>150</td>
</tr>
<tr>
<td>Jirara &amp; Airico</td>
<td>5</td>
<td>25-30</td>
</tr>
<tr>
<td>Tupinamba</td>
<td>30</td>
<td>100-200</td>
</tr>
</tbody>
</table>

* Refers to single structure only.
** Refers to single structure, but represents approximation of average.
by a ruling chief, in other words, an independent community of families. In Borneo the longhouse is on a specified tract of land with boundaries between each house, such as streams or ridges.

The fundamental "communal" nature of the longhouse community may become temporarily or permanently severed by the process of "community fission." In Borneo, for example, a group of rubber planters may insist that the longhouse be situated near rubber gardens. Such examples can effect the siting of longhouses and village layout; but more importantly, they are responsible for changes in family cohesiveness and social organization.

At times a sole longhouse forms the entire village. In other instances several houses (usually three to eight) comprise the population. Several Iroquoian sites contained close to 100 houses. The Danubian houses of Europe were grouped in villages, but it is difficult to determine how many were inhabited at the same time—since most sites were probably occupied at intervals. At the only village fully excavated, Koln-Lindenthal near Cologne, 21 houses were occupied conjointly.

In Borneo and the Pacific coastal area longhouses usually can or could be found facing a river or coastline. That this arrangement may be of significance is contended by Wirz, who points out that the position of the New Guinea longhouse in regard to water is responsible for an invar-
iable distinction between a riverside and a bushside . . . "In this division of the house in a water and a bushside the extremely old dualism between water and land expresses itself, a dualism which can be proved too a social direction along the whole South-coast and of which evidence can be found in the traditions of the population of northwestern New-Guinea."

That this "dualism" may well have spread with the long-house from Borneo to New Guinea is suggested; and possibly to the New World along the coastal strip, perhaps even to South America.

Another practice is the siting of longhouses on hill tops. Due to harassment from the Iban and Malays, the Land Dayaks of Borneo had been forced to leave the plains and inhabit hill tops for protection. Lee comments that their removal caused a reduction in the size of the longhouse, since they no longer were able to utilize larger houses requiring flat ground.

The use of palisades surrounding villages, though not universal, is encountered throughout widely separated parts of the distribution map. There is probably no specific connection with the longhouse, per se.

Social Organization

Perhaps no other aspect of longhouse culture is more difficult to unravel than the relation of the house to mode of social organization. The problem may be aptly stated:
Does a relation exist? That it does seems likely. Yet, a definitive solution becomes increasingly more difficult to discover as investigation proceeds.

The distribution map (Figures 23-25) demonstrates that if any primary criterion exists for delimiting the longhouse on a social basis, it is clan (sib or sept) organization, either matrilineal or patrilineal. On the other hand, lineages and clans do not always live in longhouses, while some clanless people do. The relationship is dominant, but not absolute.

The suggestion is, perhaps, that longhouse residence was originally a concomitant of clan organization, modifications occurring as a result of the diffusion process. As evidence we point to the global predominance of matrilineal and patrilineal societies associated with the longhouse and to the condition regarding mainland Southeast Asia, where strict clan organization is universal. The original proposition of Loeb and Broek, that the longhouse is a feature of patrilineal clans on the continent and of matrilineal clans in the Indies, remains open to some question.

In Borneo, a unique situation occurs, wherein descent is determined neither matrilineally (excepting some Ngadju tribes) nor patrilineally, strictly speaking. Rather, descent of longhouse inmates is bilateral, i.e., ancestry is determined by a relationship to both sexes rather than a predominant one. Iban social organization, for instance,
FIGURE 23
SOCIAL ORGANIZATION
S.E. ASIA

MAP

▲ MATRILINEAL
▼ PATRILINEAL

APPROX. SCALE IN MILES
0 300 600
FIGURE 25
SOCIAL ORGANIZATION
AMERICAS

APPROX. SCALE IN MILES
0  1200  2400

▲ MATRILINEAL
■ PATRILINEAL
is bilateral in nature, and a family is free to join any longhouse containing cognate kin of either the husband or wife. Regardless of this situation, the principle of clan organization is nevertheless in evidence, even if somewhat subdued. This lessening of the influence of direct clan descent is exemplified throughout much of Borneo, where matrilocal residence (as opposed to matrilineal descent) determines longhouse membership. In such cases a family may take up residence in the longhouse of the bride's mother.

As a rule, post-nuptial residence conforms to clan descent in Southeast Asia and Indonesia. Where there are patrilineal clans there is usually patrilocal residence; where clans are matrilineal, residence is usually matrilocal. There appears to be a close connection between residence and clan organization, despite the fine separation on a purely terminological basis.

Little is known about societal practice in New Guinea, excepting the general widespread presence of clan organization associated with the longhouse.

The eastern Papuo-Melanesians are grouped in exogamous totemic clans with matrilineal descent, each clan possessing a number of linked totems (objects representing blood relationship to specific kin groups), as among the Pacific Coastal Indians and the Iroquois. In Kiwai each communal house is supposedly inhabited by a single totemic clan,
but sometimes two or three clans occupy separate parts of the same house. According to Wirz the longhouse was originally a regular sept-house or individual residence of a certain social group or clan, which, through wanderings, acquired a slightly changed nature, i.e., the residence of several kin groups. Such might indicate a connection with the Indies, where longhouses as a rule comprise the residences of singular sibs.

The pattern in the New World indicates the predominance of patrilineal societies in South America and of matrilineal societies in North America. The influence of women, however, may have been more marked among the Tupi-Guarani than first supposed. The Mundurucu, for example, practiced patrilineal descent, but matrilocal residence. According to Sauer, undisturbed matrilineal societies were encountered by the Spaniards upon first contact with South American natives, partly out of which grew the myth of the Amazons. Whether or not these instances were congruent with the distribution of the longhouse is question-able. Likewise, such societies may not have been "matrilineal" in the exact sense of the term; rather, situations in which women possessed ritualistic ruling power or dominated the house's domestic economy. At any rate, the high esteem and influence of women in early South American social structure is not without significance, as will be seen later.
The social structure of Neolithic and Iron Age Europe is undetermined, although the dwellings were of a communal nature. Bradford suggests that the houses of the village depicted in Plate XXXIII possibly represent the matriarchal family in its later stages.

Exactly what the previous discussion indicates is somewhat confusing, due primarily to the many delicate relationships and exceptions of which the problem is comprised. If the social organization of two communities is essentially the same but the longhouse is a feature of one and not of the other, it may be that social organization is an insignificant factor in longhouse distribution. Conversely, some are of the opinion that throughout the world, exogamy and totemism, matrilineal and patrilineal societies, multiple and dual sibs, etc., etc., all show a strong association with one another. The latter appears to be the case with the longhouse.

In view of the foregoing, the most probable conclusion is that suggested by Loeb, that:

While, for example, all the long houses of Southeast Asia may have their differences, and this may hold true even for Borneo, or ultimately for a particular tribal division of Borneo, yet they also have their resemblances, and it is exactly these resemblances which give a clue to the essential function of the long house as such - the housing of a patrilineal or matrilineal lineage. (21)
Ceremonial Practice

A great amount of regularity can be demonstrated in religio-ceremonial customs surrounding the building of longhouses, a regularity indicating considerable antiquity for the practices in question and for cultural survival of diffused superstition.

Prior to the erection of a new house a large amount of consultation takes place. Favorable omens are sought, these consistently being indicated by the absence of certain bird calls. If the spot be considered suitable, site testing determines the physical nature of terrain. From the mainland to Borneo to New Guinea, a regular method is employed for this purpose. A piece of bamboo is placed in the ground and filled with water. If much evaporation occurs by morning, the place is considered unhealthy and abandoned.

During and after construction of the longhouse, sacrificial offerings play an important role in determination of success in occupancy. Human sacrifice was formerly required in New Guinea; however, such cases are rare. Rather, there is apparently a great deal of significance attached to the sacrifice of the pig.

Common in this regard, is the slaughter of pigs during and after construction, the blood being sprinkled on the house posts. Interesting to note is the choice of this particular animal over a wide area, i.e., from Southeast
Asia to Melanesia. Often, a long ceremony over a pig is conducted, and according to Landtman, the influence of this animal is so overwhelming among the Kiwai Papuans, that the entire longhouse suggests the idea of a gigantic pig. Perhaps the old relationship between the pig as a domestic animal, the people, and the longhouse, expresses itself through the pig's predominance in ceremonial rites.

Prominent also is the raising of the main or central house post which carries a special relationship to the entire house and tribe. Several minutes of loud singing and festivity occur tantamount to its erection, signifying the mystic powers it is believed to possess. Reported for Assam and Kiwai is the burial of various medicines in the hole in which the post is implanted.

Throughout construction a great deal of beating of gongs and drums can be heard, perhaps as a measure of preventing birds of ill omen from being heard.

In New Guinea and on the Pacific Northwest Coast each longhouse has a name associated with the totem of its inmates. In New Guinea and in Borneo the onset of sickness in a newly constructed dwelling usually results in its destruction and arrangement at a new site.
Footnotes


6. Perhaps elsewhere as well, but not reported.


8. Metraux, op. cit., p. 54, reports the distinction between a stream and forest side for the Tupi-Guarani long-houses.


10. Descent of the longhouse occupants is determined by either male or female ancestral ties. According to Loeb and Broek, the longhouse in actuality is an adaptation to post-nuptial residence (matrilineal or patrilineal), rather than to the presence of clans and lineages as such.

11. People with clans tend to have longhouses; clanless peoples almost always inhabit individual family houses.

12. Loeb and Broek, reference.


22. The Kachins of Burma vary somewhat by occasionally placing rice in the bamboo - C. Gilhodes, The Kachins, Calcutta, 1922, p. 163. The use of water is, however, the most common technique by far.


25. Landtman, op. cit., p. 17.
CHAPTER V

ORIGIN AND DIFFUSION

Theories on the origin and dispersal of a given cultural element must, by their nature, contain a certain amount of speculation. The adherents of parallel invention are representative of what might be termed the "conservative" viewpoint on the issue. The "diffusionists" have based their argument upon the gathering and analysis of evidence, the latter mounting with investigation to a point wherein cultural connection within two worlds appears more likely all the time, and far reaching relationships between Old World and New are approaching some degree of certainty. This study will question both sides of the problem.

The initial postulate of the German diffusionists, that man occupied a restricted territory at one time and upon spreading carried with him part of his cultural inventory, is acceptable. If we assume a singular place of origin for man or a few places, then the migration of men and races had to occur. The cultural customs and technologies of such early migrants must have diffused with their movement, variations taking place in original technologies and inventions being added to that which was already in use. After man had dispersed and settled in different
areas, second and subsequent movements likely took place, approximating in nature the character of the original. From all appearances the invention and dispersal of the longhouse took place within one of these subsequent movements.

The diffusion of innovation is characterized by the fact that a culture trait is either absorbed or rejected by the receiving culture and if absorbed, a high degree of selectivity takes place. Many traits become reinterpreted, implying restatement and change within the original innovation. Viewed in this context, a theory of diffusion for longhouses despite their variations over broad areas becomes more readily acceptable. Conversely, a great amount of similarity has been demonstrated in this study, despite geographical separation.

It is also critical to note the difference between the diffusion of an idea and the diffusion of people or actual migration. Was the longhouse spread as migrants wandered into new territories, in a sense constructing new houses at new sites? Or was the idea of a long, rectangular communal dwelling, in a sense "borrowed" by neighboring peoples coming in contact with an innovation they were unfamiliar with? Perhaps a certain amount of both processes occurred simultaneously. At any rate, it would seem that variation would be a natural result of either.

A meaningful argument for migration and diffusion can
be found in the fact that longhouse cultures are in the practice of inhabiting a house for a period of several years (two to ten or twelve), then abandoning and moving elsewhere.

Longhouse peoples commonly employ shifting cultivation, which, owing to the rapidity with which it exhausts the soil, necessitates the removal of villages to fresh sites. Removal to a new site may occur previous to soil exhaustion or forest destruction if an epidemic occurs, bad luck or evil omens are encountered, or if the house is destroyed by fire. Larger, more solidly built houses - for example, those of the Kayan and Kenyah - tend to shift less frequently.

The author's proposal of diffusion is depicted in Figure 26. The dispersal lines suggested are, of course, to be considered as general. If the longhouse diffused from a "hearth" area, it did so in a manner roughly similar to that illustrated on the map. The general trend in movement is based partly upon historical evidence of cultural migrations which originated in Southeastern Asia and spread toward New Guinea via the Indies; and partly upon the distribution of the longhouse. Theories of diffusion in the area must recognize the fact that major migrations occurred from west to east.

The Longhouse in Culture Complex

The idea of "culture complex" implies that the long-
house is not to be considered as existing in a vacuum, but rather as part of a distinct set of culture traits, which considered together, form a whole. Once this concept is realized, many questions concerning the diffusion process become clearer.

There are, for example, a myriad of other practices found in conjunction with longhouse distribution - the men's house, shifting cultivation, the keeping of domestic animals, blackening of the teeth, pile-built granaries and storehouses, the practice of headhunting (presently or formerly), a dog-progenitor myth, tattooing, dugout canoes - to mention only several. A complete investigation is beyond the scope of this study, but a few remarks may at least be suggestive. The fact of coincidence between these related features gives impetus to a dispersal theory, at least within Southeast Asia and Indonesia.

Those features most closely associated with longhouse culture include shifting cultivation, animal domestication, extended lineage, and gynecoaracy or mother-right.

Where longhouses are encountered, shifting cultivation coincides closely with their incidence. Not only in Asia and the Indies do longhouse peoples utilize this form of agriculture, but likewise in South America, and formerly in Neolithic Europe. In northern and central Sumatra (Gajo, Minangkabau, Karo-Batak) the forest clearing utilized in cultivation is termed juma, while Assamese longhouse
dwellers call it *jhum*.\(^5\)

In a different perspective, Lee has suggested that Iban longhouse settlement pattern is the result of the Iban system of shifting cultivation.

The almost universal keeping of domestic animals below the house, among the piling, is an indication of the close connection between the occupants and said animals. Notable are the dog, the pig, and the chicken, all believed to have been first domesticated in Southeastern Asia.

A Proposal of Origin

Exactly how old the longhouse may be in Southeast Asia will remain unanswered in this study. It has been maintained by several to be a product of early Neolithic times and of Neolithic culture strata; and as the peoples who utilize the longhouse at present are considered as living in the "neolithic" stage of human development, such an estimate is reasonable.

The German diffusionists had proposed the most likely original home of the mother-right agrarian culture circle which first inhabited this form of communal dwelling. Their conclusions pointed to the eastern slopes of the Himalayas, with the river valleys of the Ganges, Brahmaputra, Irrawaddy and other streams.

This view has been given support by Sauer who linked the earliest Neolithic farmers or Old Tropical Planting Culture, including the beginnings of agriculture and the
FIGURE 26
SUGGESTED LONG HOUSE DISPERSAL
domestication of the dog, pig and chicken, to Southeast Asia, notably Assam and northern Burma:

These societies were largely developed and organized by their women. It was through them, it is inferred, that descent was reckoned and membership in the household determined. Matrilineal and matriarchal societies arose. The Kulturkreis school seems to have a valid generalization in equating its 'Old Planter' complex with matrilineal societies, and in linking to them multi-family houses, large, rectangular, gabled structures, providing living and storage space for the extended household, and often built on platforms set on posts. (8)

Whether or not these societies were strictly matrilineal, may not be as significant as the fact that women for the first time came to a position which they formerly had not attained. In other words, a marked rise in the status of women took place. Perhaps this was due to their role as supervisors in the household's domestic economy, this in turn accentuated by the position of the longhouse in society and the gaining of power by anyone who might act as overseer.

Furer-Haimendorf, a knowledgeable student of communal housing patterns, is even more pronounced than Sauer:

Despite considerable local differences all these institutions (longhouses) have certain elements in common, and their present distribution in India and Southeast Asia can best be explained by the hypothesis that it was a neolithic agricultural civilization of Southeast Asiatic type which favored the development of community houses in the one or other form, and that the spread of this civilization was instrumental in carrying the dormitory institution into widely
separated areas on the Asiatic mainland as well as in Indonesia. (10)

Of those tribes who inhabit the longhouse today in Burma and Assam, legends exist which indicate the possibility of a common or at least, similar migration history. These are, however, legends, and must be interpreted in this light.

The Kachins, whose traditions indicate an acquaintance with the sources of the Irrawaddy, give a picture of a plateau or high tableland situated in the "center of the world" that is the threshold of what is beyond. When confronted with the question where this place is to be found, a Kachin replies, "up there," pointing to the north. This upland area perhaps refers to the Mongolian highlands and represents the ancestral home of the Kachins, at least in legend. Their removal from this area represented their first migration (we can only speculate where they may have come from previously), following which they apparently settled for some time, probably for centuries, in the area of the headwaters of the Irrawaddy. From here they advanced into Assam, Burma, and Yunnan.

Karen traditions tell of their coming from the north across a great river of sand and of having been driven out of the Irrawaddy basin at a later date. That they may have followed the Brahmaputra in its course north of the Himalayas at an early period of history, is not improbable.
There exists among the Garo a story of their migration from Tibet, of their arrival in the plains at the foot of the Himalayas; of their wanderings eastward up the Brahmaputra valley; and of the subsequent retracing of their steps until they came to the plains which lie between the Brahmaputra and the hills they now inhabit. Here they seem to have settled for a time before making the last move into the mountainous country that now forms their home, the latter migration occurring in relatively recent times.

A close similarity can be seen among these various traditions. If these peoples did penetrate from north of the Himalayas, the absence of the longhouse from inner China would seemingly exclude the latter as a possible source area. In other words, they developed or came in contact with the longhouse after they had settled in Assam, northern Burma, and possibly Yunnan, most likely during the long period of settlement in and near the Himalayan foothills.

From this center, it is proposed, the longhouse spread toward the south with the migrations of the Kachin and Karen in Burma and a culmination in southern Vietnam focusing on the Moi and Cham.

The latter tribes represent a link between mainland Southeast Asia and the East Indies. Culturally, they appear closely akin to the longhouse peoples of Assam and
are also considered "Indonesian" in many respects. This area of Indochina had served historically as a link connecting the continent with the southern seas:

... there is considerable evidence to support the contention of Benedict that the people who spoke Indonesian languages came through Champa (southern Indochina) to the Indies. Only one must qualify this theory to the extent that it was probably only one of several migrations - that one that carried the matrilineate, the long house, and possibly also the use of wet rice and an elaborate rice cult. Between Champa and Sumatra there is a linguistic affinity and a comparative lack of geographical barrier. Moreover, the Cham, like all Moi, are physically of the Indonesian racial type. In fact, the second part of the eighth century A.D. and ending with the beginning of the ninth, the Chams were under the rule of Shrivijaya, the Hindu kingdom of Sumatra. If the Sumatra people were capable of coming to Champa it is not impossible that previously, at some date preceding the Christian Era, the Chams could have migrated to Sumatra. (14)

To the East of Sumatra

Although suggested that the longhouse originated in the lower Neolithic on the Asian continent, there is little evidence to suggest when a movement into Indonesia took place. Conceivably the longhouse occupied Southeast Asia for a considerable time span before primary penetration from the mainland. At what period in history this may have occurred, one can only speculate. It is wholly probable that several migration movements as opposed to a single one were involved.

Historically, the Malay Peninsula land bridge served early migrants, and it is likely that the longhouse spread
by means of this route, the island of Sumatra representing first settlement.

At one period the Papuans are believed to have inhabited the Archipelagos, as far west as Borneo and possibly extended into Indochina and Burma. The Papuans were driven before the Malayo-Polynesian race (at which time they may have come in contact with longhouses) as the latter advanced toward the east.

The Negrito and/or Australoid peoples who penetrated Borneo after the Ice Age and who were followed by proto-Malay or Indonesian migrants, must have been displaced into the interior of the island. The long shelter-dwelling Punans possibly represent the descendants of such displaced groups. Lee suggests that the initial Indonesian influx to Borneo occurred 1000-2000 years before Christ, and that others followed who had introduced shifting cultivation during the period when Borneo was isolated. This estimate agrees generally with other accounts (See footnote 8, Chapter III). It is wholly probable that the longhouse diffused into the Indies through the migrations of these "Indonesian" peoples.

The Land Dayaks are considered to be a more anciently Bornean group than the Iban or the Kayan, both of whom are believed to have arrived several centuries ago. Hose and McDougall have postulated that the Kayan are surviving branches of the people who occupied a large area of South-
eastern Asia, more especially the Irrawaddy basin for a considerable period before the first Burmese and Shan invasions.

It would appear that such conclusions are the most likely, although a purely direct relationship is questionable.

What is even more uncertain is the direction in which a dispersal to Borneo took place. It could well have occurred by means of a Sumatra-Java-Borneo route, penetration thus taking place from the south. On the other hand a route across the South China Sea is another possibility. Charts compiled by Dale show that surface winds and currents move from the mainland toward Borneo throughout much of the year, a point to be considered in a supposed journey by primitive watercraft. The presence of the central corridor ground plan on the northwestern portion of the island, the only part of Borneo where it is encountered, is suggestive of the proximity to southern Vietnam.

A passage to New Guinea could have taken place from Borneo through Celebes or by means of the chain of southern islands including Java, Flores, Timor and Tanimbar. The approximate age of the longhouse in New Guinea is unknown. Papuan legends tell of accounts in which their forefathers inhabited trees or holes in the ground covered with leaves. The building of the first longhouse is attributed to a mythical hero, while the memory of the oldest living people
tells of dwellings being exactly like the longhouses at present.

So little is known about New Guinea's culture history and of that which is known, little in the way of certainty can be provided ... "Further researches will probably indicate whether the pile-houses were associated with a single culture, the bow-culture of Graebner, or whether there were several cultures, or perhaps phases of one general culture, which influenced New Guinea at various times! Nor can one easily unravel the large variety of house types encountered on the island.

The Pacific Bugaboo

No other issue in the diffusion controversy has caused more discussion than the possibility of trans-Pacific carriage of peoples and culture elements. Some have claimed independent invention of similarity between the Old and New World. Others argue that culture and people migrated across the Pacific from Asia, bringing their various technologies with them, and point to the same similarity as evidence. Others are of the opinion that voyagers from the New World spread part of their inventory into the island region. And finally, many have demonstrated that the safest position is no position at all.

Heyerdahl has purported three possible routes from Asia to the Americas - a direct route through Austro-Melanesia, a direct route through Micronesia, and an indirect
route sweeping in a broad arc from the Philippines to northwestern America. It is postulated that a straight line is not necessarily the shortest route in time for aboriginal migrants and that a following of the Kuro Sivo current from Southeast Asia to the Pacific Northwest could transport aboriginal watercraft across the Pacific in a much shorter time. The presence of the longhouse along the coastal strip is of critical importance in consideration of such a possibility:

Numerous resemblances in customs between the Indians of our Northwest coast and peoples of Indonesia are familiar. In Kamchatka, the Alaskan Peninsula, Kodiak, and on the coast of British Columbia, there were matrilineal societies, living in multifamily houses with notions of property, prestige, and art forms which are about what might be left of Southeast Asiatic culture from which an adverse environment had eliminated certain possibilities, in particular agriculture. (24)

If Heyerdahl's postulation is correct, it is helpful in explaining the distribution of the longhouse along the Northwest Coast. Concerning this problem, it is known that Japanese junks were carried across the Pacific to the Aleutians and to British Columbia in what have been termed in the literature, "drift voyages."

Hatt demonstrates several parallels in agricultural myths and rites between Indonesia and North America, concluding that a land route to Alaska across the Bering Straits could hardly have been used by agricultural peoples for climatic reasons and that such practices must have been
brought by agriculturalists across the Pacific. According to Sauer's theory, which is supported by all the evidence, domestic plants encountered in the Pacific, by they of Polynesian, Melanesian or Micronesian affinity, rarely are of island origin, but came from the Southeast Asiatic planting hearth.

A summary of Polynesian migrations from Asia into the Pacific is provided by Suggs, while Fraser comprehensively reviews all of the arguments and their philosophical ramifications. It is beyond the scope of this study to fully consider transpacific migration patterns, as many possibilities have been proposed, often at odds with each other.

If the longhouse diffused to the Americas from Asia it probably did so by means of an ocean route, rather than through the Bering Straits-Aleutian land bridge which formed the earliest means of passage from Asia.

The supposed absence of the longhouse from Pacific architecture forms a strong argument against Pacific diffusion. But parallels in roof type (excepting the barrel-roof variety), social organization, and ground plan, combined with minor features pointed out in discussion, contribute to speculation that the longhouse spread to the New World, by someone at an unknown time, rather than being independently invented on separate occasions.

We note also that longhouses most closely resembling those in Southeast Asia and Indonesia are encountered near
Venezuela in western South America; notable features including construction on piles and triangular gabled roofs. The absence of piles and the dominance of the rounded form of roof are confined to the interior and eastern portions of the continent. Perhaps important innovations in exterior form took place during an eastward tribal penetration.

North and South in the Americas

Since the longhouse had been widely distributed throughout the New World upon the arrival of the first Europeans, it is certain that it must have existed for a considerable period during pre-Columbian times. The Spaniards found natives dwelling in multifamily houses, many of them built on platforms set on posts, whence the name Venezuela.

Regardless of whether or not a trans-Pacific carriage took place at some unknown time, we must consider the possibility of two separate origins, one in the north and one in the south; or that a single movement resulted in dispersal throughout both continents. That the Iroquois may have been influenced from the south will be seen momentarily.

Both Koch-Grunenberg and Nordenskiold suggest that the pile dwellings of the interior of South America found on dry or hilly terrain (whether longhouses or otherwise) are survivals from a period when their builders inhabited swampy or coastal districts. This would indicate that a certain amount of general migration took place from coastal areas.

More specifically, the legends of the longhouse-dwelling
Tupi-Guarani peoples show that they sought a "land without evil" and that their wanderings brought them from western South America to the eastern coast, their course following the Amazon, with offshoot migrations along tributary streams. It is suggested that the longhouse spread throughout northern and central South America by means of these migrations. Schmidt places the beginnings of these movements in the general location of the eastern Andes and northwestern South America. To the Tupians also, might well be attributed the innovation of a rounded roof.

Driver and Massey have claimed a twofold origin and history for the rectangular houses of North America—those along the Northwest Coast being derived from Asia, while those in the East, South, Meso-America and the Circum-Caribbean area stemming from Meso-America or South America. If such be the case it corresponds generally to the author's proposal of longhouse diffusion, the longhouse considered as a type of rectangular dwelling.

Concerning early Iroquois migration history, the fact that beans, maize, and squash exist in their mythology and that they made use of the blowgun, as well as linguistic evidence, point to their having come from a southern home. Wingert believes that the longhouse itself is of southern origin and that houses of the Iroquois type were used in the south at the time of European contact. Parker suggests an earlier home in the middle Mississippi Valley,
while Bushnell traces the Iroquois linguistic stock from northern Arkansas to New York, by way of southern Missouri, Kentucky-Tennessee, and the Ohio River Valley. The latter would well place these supposed migrations in close proximity to the area occupied by the Virginia Indians.

At what period such movements took place can hardly be determined. It is known, however, that archeological remains of the longhouse in New York were present by at least ca. 1200 A.D.

The prevalence of the barrel-roof, along with ground plan pattern and other details is suggestive of penetration into the American south from South America, especially considering that many culture traits resemble each other in both areas.

* * *

Independent invention for the longhouses of the European loess lands, confined to the earliest phase of the New Stone Age, has been proposed primarily because of the distance from Southeastern Asia and the absence of evidence indicating any direct cultural connection.

Yet, the possibility of a dispersal, whether to or from the Assam-Burma hearth area, may well be in need of further consideration. The fact that both complexes are products of Neolithic times, that structural similarities in the houses themselves are evident, and that the European culture in question demonstrates likenesses to that of Southeast
Asia (including shifting cultivation and pile-built granaries); all signify parallels, that when considered together, are worthy of preliminary investigation.
Footnotes


2. As pointed out earlier, however, interpretation of the context in which similarity exists is needed. The distribution of bamboo as a main structural material may not necessarily be of telling significance.


4. This particular situation is reserved, however, by the presence of slash and burn among various cultures, including those who inhabit single-family dwellings. On the other hand, those agricultural practices in question may have been associated with longhouse culture, originally.


9. Matrilocal residence and matriarchal rule are common throughout much of the area in question.


12. Hanson, Ibid., suggests that the second migration took place two or three centuries ago placing them in their present location.


15. Y.L. Lee, "Historical Aspects of Settlement in British

16. Ibid., p. 188.


18. A theory of longhouse diffusion outwards from Borneo is dulled by the general migration movements within the area. One might be compelled toward such a possibility due to the wide distribution on the island, but time and density are not necessarily related. The isolation factor is also an argument against such a theory.


21. Ibid., p. 4.


25. G. Hatt, "The Corn Mother in America and Indonesia," Anthropos, 46 (1951), pp. 353-914. Interesting parallels are pointed out between longhouse peoples, including the Toradja and Iroquois.


32. Driver and Massey, op. cit., p. 304.


36. Griffin, loc. cit.
CHAPTER VI

CONCLUSION AND OVERVIEW

The choice and form of dwelling can be said to depend on three primary factors which account for chronological and geographical divergencies: physical surroundings, manner of living, and general state of civilization. Each has been indirectly referred to in conjunction with longhouse distribution. The nature of terrain, materials available to longhouse dwellers, domestic economy and means of subsistence, along with historical occurrences in manner of social organization all contribute to a further understanding of the nature of the longhouse.

A concomitant or unstated conclusion of this study has also been that the longhouse represents a physico-cultural phenomenon, around which the economic, social and spiritual pursuits of the occupants revolve.

The issues and arguments concerning the problem of investigation center on distribution, function and form, migration history, as well as assumptive speculation. The trend of these discussions indicates that much is yet to be discovered and studied.

It is of necessity, for instance, to arrive at a better understanding of the distribution map as related to time.
perspective. If this could be accomplished, any theory of longhouse dispersal would more closely approximate reality. Then too, a greater realization of any possible connection between the longhouse considered in its original circumstance, i.e., as a communal family habitation, and the men's house and council or community house, would prove fruitful. It is evident that the latter dwelling types, despite a marked difference in function, exhibit structural similarities on various occasions. One might also investigate the role of the longhouse in the distribution of communal housing, per se.

A certain amount of diffusion has been proposed in this study. But perhaps the key point of emphasis has been that the longhouse as a phenomenon spread out of Southeast Asia accompanied by some changes in technique accounting for variation in form, as well as function. Concurrently, those aspects which determine a high degree of survival, of which the most notable is ground plan, have been proposed as the critical arguments for dispersal.

It is purported above all that the preceding study is of value in analyzing the nature of the longhouse, in demonstrating both geographical similarity and variation, and finally, in exposing a specific medium through which man occupies the earth.
PLATE I

North America

PLATE II

North America

Rounded-roof Iroquois longhouse with ground plan.
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PLATE III

North America

Palisaded Onondaga (Iroquois) village. A grouping of houses at upper right appear to have triangular gabled roofs. Sketch by Champlain (1615).
PLATE IV

South America

Tupinamba village showing longhouses grouped in a square. Note arrangement of entrances on sides. After Staden (1557).
PLATE V

Burma

Kachin house demonstrating sloping eaves roof type.
Source: L. Scherman, 1915.
PLATE VI

Burma

Kachin house in the Hukong Valley.
Source: O. Hanson, 1913, p. 96.
PLATE VII

Burma

Palaung house of rough construction showing house-horns.
Source: L. Scherman, 1915.
PLATE VIII

Burma

Palaung interior. Open space serves as the communal gathering area and common corridor.
Source: L. Scherman, 1915.
PLATE IX

Assam

Source: L. Scherman, 1915.
PLATE X

Assam

Garo house of light bamboo construction. The space below floor houses domestic animals. Source: L. Scherman, 1915.
PLATE XI

Assam

A typical Dafla longhouse in Himalayan foothills. Note location on hill spur.
Source: B.K. Shukla, 1959, p. 45.
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PLATE XII

Assam

A group of Garo houses. Slight curve in roof crest has wide distribution.
Source: A. Playfair, 1909, p. 42.
PLATE XIII

Indo-China

Moi longhouse approximating 1000 feet in length. Piles and principal construction of heavy timber. Roof is triangular gabled.
Source: A. Maurice, 1942, facing p. 106.
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PLATE XIV

Indo-China

Interior of the house depicted in preceding plate looking down central corridor. Family cubicles separated by partitions are visible to the right. Hearths along corridor at left. Note beams running across the width of the interior, connected to ridge pole by vertical poles.

Source: A. Maurice, 1942, facing p. 106.
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PLATE XV

Indo-China

Rear portion of a Moli longhouse. Log ladder serves for access.
Source: A. Maurice, 1942, facing p. 106.
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PLATE XVI

Mentawei Islands

Rear portion of a Mentawei communal house with notched-log leading to back platform. Beam extending through roof is encountered in parts of Assam. Door corresponds to central corridor placement.
Source: E.M. Loeb, 1935, picture 44.
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PLATE XVII

Sumatra

Minangkabau longhouse and rice granary. Variant form of gabled roof permits high degree of curvature.
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PLATE XVIII
Flores

Manggarai communal dwelling exhibiting househorns and a massive sloping roof of thatch.
From a model in the Colonial Institute in Amsterdam.
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PLATE XIX

Borneo

Iban house built upon numerous thin piling. Uncovered veranda is commonly utilized as a drying platform. Notched-log depicted at the left and at right center. Roof is triangular gabled. After Hornaday.
PLATE XX

Borneo

Iban interior, from left to right - compartments, common passage, covered veranda, uncovered veranda. Note light bamboo construction. Compare with Figure 19B. After Everett.

PLATE XXI

Borneo

Iban longhouse of considerable length.
PLATE XXII
Borneo

Portion of a Iban house on the Rajang River. Light construction characteristic of Ibans is evident in the exposure of roof "ribbing."
PLATE XXIII

Borneo

PLATE XXIV
Borneo

Land Dayak village demonstrating how extensions are joined, forming a continuous structure.
Source: N. Van Huyen, 1933, facing p. 110.
PLATE XXV

Borneo

Kayan gallery-common passage. Family compartments to right. Note heavy plank construction.
PLATE XXVI

New Guinea

Kiwai longhouse on a "sea" of posts. Sloping eaves roof type.
Source: G. Landtman, 1920, p. 5.
PLATE XXVII

New Guinea

Elevation and plan of a Soko-korobe clan house at Iasa, Kiwai.
Source: A.C. Haddon (Ed.), 1912, p. 112.
PLATE XXVIII

New Guinea

Kiwai longhouse in the process of construction, showing lateral post technique. Ridge pole is flanked by two extra supports. Rafters extend from ridge pole to the edges of the roof.

PLATE XXIX

Gilbert Islands

Source: W.T. Brigham, 1908, p. 46.
PLATE XXX

China

A possible longhouse at Ichang, perhaps related to the typical structures of the mountains and forests of Southeastern Asia.
Source: C.W. Bishop, 1938.
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PLATE XXXII
Neolithic Europe

Reconstruction of the village of Koln-Lindenthal in its last stage. Long dwelling houses are at the right. Inside palisade are granaries on posts and irregular structures (fenced hollows) used as communal working places. Roofing for latter is hypothetical.
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Reconstruction of a Polish lake-village at Biskupin. Palisades enclose closely grouped structures. The presence of many fires indicates the communal nature of such "longhouses."

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