BARK CLOTH IN AFRICA
A Problem in Origins and Dispersal

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

by

Jason Douglas Clark

January, 1972
The thesis of Jason Douglas Clark is approved:

________________________________________
Committee Chairman

San Fernando Valley State College

January, 1972
Dedicated to the students

of

St. Leo's College, Fort Portal, Uganda

and

Makerere University College, Kampala, Uganda

in memory of their friendship

and to

my family for their patience
ACKNOWLEDGMENTS

Without the assistance of many people and institutions, this work would not have been possible. Therefore, the author wishes to thank the following people and institutions which contributed in varying ways directly or indirectly to the thesis. My thanks are extended to the Teachers for East Africa Project, which enabled me to go to Uganda, and to the people of Uganda who provided some of the information in this thesis. I am indebted to Dr. William Emboden, of the Biology Department of San Fernando Valley State College, and Dr. Charles Good, formerly of the Valley State Geography Department, for indirectly getting me started on serious study of this topic.

I wish to express my appreciation to the staffs of the libraries of the University of California at Los Angeles and at Berkeley and the University of Southern California, as well as our own library staff. From our own library staff, I owe a debt of gratitude to Charlotte Oyer in particular for her work on interlibrary loans.

For assistance in translation and in checking my translations, I wish to thank Raymonde Motil and
Helen Robinson for help with the French, Jutta Heyne and Rudolph Meyer for help with the German, and David Smith for help with the Portuguese.

For assistance with typing the rough draft, I wish to thank my wife, Julia. For the typing of the final draft, my thanks go to Ann Welling. I am also grateful to the cartographic services of this department for their criticism and advice and for the reproduction of my maps and photographs.

Last, but not least, I wish to thank my committee, Dr. Elliot McIntire, Dr. Gordon Lewthwaite, and Dr. James Allen for their criticism, suggestions and encouragement.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedication</td>
<td>iii</td>
</tr>
<tr>
<td>Acknowledgments</td>
<td>iv</td>
</tr>
<tr>
<td>List of Tables</td>
<td>vii</td>
</tr>
<tr>
<td>List of Photographs</td>
<td>viii</td>
</tr>
<tr>
<td>List of Maps</td>
<td>ix</td>
</tr>
<tr>
<td>List of Illustrations</td>
<td>x</td>
</tr>
<tr>
<td>Abstract</td>
<td>xvii</td>
</tr>
<tr>
<td><strong>CHAPTER</strong></td>
<td></td>
</tr>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>II. PAST THOUGHTS ON ORIGIN</td>
<td>10</td>
</tr>
<tr>
<td>III. ON THE NEBULOUS DISTRIBUTION OF THE ART IN AFRICA</td>
<td>23</td>
</tr>
<tr>
<td>IV. THE TECHNIQUE OF MANUFACTURE</td>
<td>44</td>
</tr>
<tr>
<td>V. THE SOURCE PLANTS: CULTIVATED AND UNCULTIVATED</td>
<td>62</td>
</tr>
<tr>
<td>VI. TOOLS: PAST AND PRESENT</td>
<td>77</td>
</tr>
<tr>
<td>VII. CONCLUSION</td>
<td>87</td>
</tr>
<tr>
<td>LIST OF REFERENCES</td>
<td>91</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>114</td>
</tr>
</tbody>
</table>
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Summary of Source Plants for the Old World and Oceania</td>
<td>66</td>
</tr>
<tr>
<td>2. Taxonomic Relationships of Members of Genus Ficus Used for Bark Cloth in Africa</td>
<td>67</td>
</tr>
<tr>
<td>3. Taxonomic Relationships of Members of Genus Ficus Used for Bark Cloth in Asia and Oceania</td>
<td>68</td>
</tr>
</tbody>
</table>
## LIST OF PHOTOGRAPHS

<table>
<thead>
<tr>
<th>Photograph</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Scraping off the outer bark.</td>
<td>47</td>
</tr>
<tr>
<td>2. Removing the inner bark.</td>
<td>47</td>
</tr>
<tr>
<td>3. Initial Pounding</td>
<td>50</td>
</tr>
<tr>
<td>4. Second Pounding</td>
<td>50</td>
</tr>
</tbody>
</table>
# LIST OF MAPS

<table>
<thead>
<tr>
<th>Map</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Distribution of Bark Cloth Clothing in Africa after Schurtz, 1891</td>
<td>11</td>
</tr>
<tr>
<td>2. Distribution of Bark Cloth Clothing in Africa after Frobenius, 1897</td>
<td>11</td>
</tr>
<tr>
<td>3. Distribution of Bark Cloth Clothing in Africa after von Boeckmann, 1921</td>
<td>28</td>
</tr>
<tr>
<td>4. Distribution of Bark Cloth Clothing in Africa after Jünger, 1926</td>
<td>28</td>
</tr>
<tr>
<td>5. Distribution of Bark Cloth Clothing in Africa after Frobenius, circa 1929</td>
<td>29</td>
</tr>
<tr>
<td>6. Distribution of Bark Cloth Clothing in Africa in 1949 after Holas, 1949</td>
<td>29</td>
</tr>
<tr>
<td>7. Bark Cloth in Africa</td>
<td>Pocket</td>
</tr>
<tr>
<td>8. Actual and Hypothetical Areas of the Use of Bark Cloth in Africa</td>
<td>32</td>
</tr>
</tbody>
</table>
# LIST OF ILLUSTRATIONS

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Bark Cloth hammer similar to that used by the craftsman in photographs 3 and 4.</td>
<td>49</td>
</tr>
<tr>
<td>2.</td>
<td>Bark cloth fumigator.</td>
<td>49</td>
</tr>
<tr>
<td>3.</td>
<td>Method of holding a club type instrument.</td>
<td>80</td>
</tr>
<tr>
<td>4.</td>
<td>Method of holding a hand axe or stone pounder.</td>
<td>80</td>
</tr>
<tr>
<td>5.</td>
<td>Stone beater from Beyla, Guinée. After Hubert, 1925.</td>
<td>115</td>
</tr>
<tr>
<td>10.</td>
<td>Stone beater from Peté Lalia, Guinée. Dimensions: 96 millimeters by 43 millimeters by 30 millimeters. After Bequaert, 1947, which is based on Hue, 1913.</td>
<td>116</td>
</tr>
</tbody>
</table>


15. Ivory beater from Njoro River Cave, Kenya. Length 15 centimeters. After Leakey and Leakey, 1950 ....................... 118


17. "Ancient" stone beater from N. Pahang, Malay Peninsula. After Evans, 1930 ............. 119

18. "Ancient" stone beater from Ampang, Selangor, Malay Peninsula. After Evans, 1930 ............. 119

19. Ancient (?) stone beater from Sungai Galas near Gua Musang, Kelantan, Malay Peninsula. Length approximately 75 millimeters. Long diameter about 65 millimeters. Short diameter about 50 millimeters. After Sieveking, 1956 .......................... 119
20-21-22 Stone beaters from Giua Cha, Kelanton, Malay Peninsula. The lower one is broken. After Sieveking, 1956 ............... 120

23-24-25 Stone beater heads with grooves on three sides for hafting from Lubaantun, British Honduras. After Joyce, et al, 1927. Similar stones found in Mexico ............... 121

26. Beater with shell head and rattan handle from Manus, Great Admiralty Island, Bismark Archipelago (Melanesian). After Naumann, 1940a ............... 122

27. Beater with stone head and rattan handle from Celebes (Toradja Tribe). After Kennedy, 1934, which is based on Adriani and Kruijt, 1901 ............... 122

28. Stone beater head with notches at corners for hafting from Celebes (Toradja Tribe). After Kennedy, 1934, which is based on Adriani and Kruijt, 1901 ............... 122

29. Cone shaped wooden beater from Sipora, Mentawi Islands (Indonesia) After Evans, 1930 ............... 123

30. Cylindrical wooden beater of the Tanala Tribe, Madagascar. After Linton, 1933 ............... 123


32. Semi-conical wooden beater from "British Central Africa" (Zambia and Malawi). After Johnston, 1897 ............... 124
33. Conical wooden beater of the Lamba Tribe, Zambia. Similar beaters with rhinoceros horn for the head were also reported as well as a metal headed one of slightly different design. After Doke, 1931. . . . 124

34. Conical wooden bark cloth (?) hammer of the Luba Tribe, Zaire Republic. The handle is 25 centimeters long and the head is 10 centimeters long. After Colle, 1913 . . . . . . . . 124

35. Wooden beater of the type used by the Tonga Tribe, Zambia and Rhodesia. Both ends scored. After personal communication from J. Desmond Clark, 1971 . . . . . . . . 125

36. Wooden beater of the type used by the Lamba and Lala Tribes, Zambia and Zaire Republic. One end scored. After personal communication from J. Desmond Clark, 1971. . . . . 125

37. Beater with iron head hafted in a stick with a split end. A type used by the Bemba and Bisa Tribes, Zambia. After personal communication from J. Desmond Clark, 1971. . . . . . . . 125

38. Semi-conical beater from Newala, Southeast Tanzania. (Scoring hypothetical). After Weule, 1909 . . . 126


40. Conical ivory-headed beater of the Mbuti Pygmy Tribe, Epulu District, Central Ituri, Zaire Republic. A similar beater with wooden head was also shown. Three groove patterns for the heads are shown. After Turnbull, 1965. . . . . 126
41. Bone beater grooved on one side only.
   From Munsa Earthworks, Mubende District, Uganda. After Lanning, 1959. 127

42. Bone beater grooved laterally on one side and with rectangular cross-hatching on the other. From Munsa Earthworks, Mubende District, Uganda. Length approximately 300 millimeters. Width about 115 millimeters. After Lanning, 1959. 127

43-44 Wooden beaters, with four-sided beating surfaces, from Whangarei Harbour, North Island, New Zealand. After Buck, 1966. 128

45. Wooden beater from Mexico. After Heyerdahl, 1953. 129

46. Wooden beater from Tahiti. After Ellis, 1967. 129

47. Wooden beater from Celebes. After Heyerdahl, 1953. 129

48-49 Wooden beaters of square, rectangular, oval and triangular cross-section with longitudinal grooving from Fiji Islands. After description and minute one in a photograph in Roth, 1934. 130

52. Wooden beater from Fiji Islands.
    Possibly square in cross-section.
    After Cranstone, 1961. 130

53. Wooden beater from Loyalty Islands.
    After Cranstone, 1961. 130

54-55 Wooden beaters from New Caledonia.
    After Naumann, 1940a. 131

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>57.</td>
<td>Wooden beater from Papua, New Guinea. After Cranstone, 1961</td>
</tr>
<tr>
<td>58.</td>
<td>Unscored wooden beater from Celebes. After Kennedy, 1934, which is based on Adriani and Kruijt, 1901</td>
</tr>
<tr>
<td>59.</td>
<td>Wooden, four-sided beater from Borneo. After Kennedy, 1934, which is based on Adriani and Kruijt, 1901</td>
</tr>
<tr>
<td>60.</td>
<td>Wooden, two-sided beater from Borneo. After Kennedy, 1934, which is based on Adriani and Kruijt, 1901</td>
</tr>
<tr>
<td>61.</td>
<td>Wooden beater from Sumatra. After Kennedy, 1934, which is based on Adriani and Kruijt, 1901</td>
</tr>
<tr>
<td>62.</td>
<td>Wooden beater from Garo Tribe, Assam. After Walker, 1927</td>
</tr>
<tr>
<td>63.</td>
<td>Wooden beater from Rundi Tribe, Burundi. Length approximately 25 centimeters. After Czakanowski, 1917</td>
</tr>
<tr>
<td>64.</td>
<td>Wooden beater from Bete Tribe, Ivory Coast. After Holas, 1949</td>
</tr>
<tr>
<td>65.</td>
<td>Wooden beater from Bete Tribe, Ivory Coast. After Holas, 1949</td>
</tr>
<tr>
<td>66.</td>
<td>Ivory beater from Amba Tribe, Uganda. After Stuhlmann, 1894</td>
</tr>
<tr>
<td>67.</td>
<td>Ivory beater from Bwaka Tribe, Congo Republic. After Poutrin, 1910</td>
</tr>
<tr>
<td>68.</td>
<td>Ivory beater from Baya Tribe, Cameroon, Congo and Central African Republic. After Passarge, 1895</td>
</tr>
</tbody>
</table>

xv
69. Wooden beater from Fang Tribe, Cameroon, Equatorial Guinea, and Gabon. After Tessman, 1913 . . . . . 135

70. Beater made from elephant's rib, from Fang Tribe. After Tessmann, 1913. . . . . . . . . . . 135

71. Ivory beater from Fang Tribe. After Tessmann, 1913. . . . . . . . . . . . . . . . . 135

72. Wooden beater from Ashanti Tribe, Ghana. After Rattray, 1927. . . . . . . . . 136

73. Wooden beater from Baule Tribe, Ivory Coast. After Holas, 1949. . . . . 136

74. Wooden beater from Dida Tribe, Ivory Coast. After Holas, 1949 . . . . . 136

75. Wooden beater from Dida Tribe. After Holas, 1949 . . . . . . . . . . . . . . . . . 136

76. Wooden beater from Rundi Tribe, Burundi. Length 32 centimeters. After Meyer, 1916 . . . . . . . . . . . 137

77-78 Two sizes of wooden beaters from Bukoba District, Tanzania. The smaller one has finer ridges for finish work. After Kimwani, 1951 . . . . . 137

79. Wooden beater from Ganda Tribe, Uganda. After Stuhlmann, 1894. . . . . . 137
ABSTRACT

Past hypotheses have suggested three areas as the source of the process of bark cloth making in Africa: southern or southeastern Asia with entrance through East Africa; Egypt or Southwestern Asia with entrance through Egypt; and indigenous origin in subsaharan Africa. None of these ideas has been adequately supported by the presentation of sufficient evidence. An examination of the distribution of the process and the archaeological finds, the techniques used, the source plants, and the tools, leads to a conclusion that the basic process is too simple and too old to determine its source region. However, since refinements in the process appear to have followed distinctly different directions in subsaharan Africa from those outside of Africa, it seems probable that the process was indigenous in subsaharan Africa.

In addition, it was discovered that previous maps showing bark cloth distribution in Africa were concerned with the distribution of the use of bark cloth for clothing and not with purposes other than clothing such as, blankets, sacking, curtains, mats, and were generally
quite incomplete. Therefore, a new map showing distribution of the use of bark cloth for all purposes is presented.
CHAPTER I

INTRODUCTION

The distribution of the art of making bark cloth in the world arouses interest in how and where it originated. This thesis focuses not on the worldwide problem so much as on a regional one. What were the origins of the process in Africa? Were they indigenous? Were they foreign? If the latter, from where did the art come and by what path did it enter Africa?

The term bark cloth (the prevailing spelling) usually refers to a "natural textile" material which is obtained by removing the inner bark, or bast, of a tree and pounding the bark with a club or mallet. The maceration of the bark increases its size and flexibility; thus, a usable material can be had in a relatively short time. This material is not woven and therefore is not a textile in the true sense of the word. Other materials have been labeled as bark cloth in the literature and rightly so in the sense that they are made from bark. These other materials are made by either plaiting strips of bark or weaving threads or strings spun, often between the palms.
of the hands, from bast fibers. More often materials such as these are not referred to as bark cloth or they are distinguished by a qualifier, such as "woven", preceding the term bark cloth. The first type mentioned must be considered bark cloth proper because the term as used in the literature overwhelmingly means this type and because most cloth made from bark is of this type. In many cases it is possible that the woven and plaited fabrics are products of the amalgamation of two processes which has come about through the contact of bark cloth makers with the process of plaiting or weaving. This paper is concerned with bark cloth proper and distinctions will be made when there is cause to mention the other varieties.

The making of bark cloth is an activity which formerly had a pan-tropic distribution including the West Indies, Mexico, Central and South America, Oceania, Southeast Asia, India, Ceylon, Madagascar, and East, Southern, Central and West Africa. However, it was not restricted to the tropics. This activity was carried on in subtropical areas of southeastern Africa, Asia Minor, southern and eastern Asia, and even in New Zealand and the temperate parts of Europe (main sources: Brigham, 1911, pp. 5-72; Bühler, 1940, pp. 1170-1174; Mason, 1895, pp. 225-228; Ratzel, 1896, 1898, 1904, pp. various).
Probably the art of making bark cloth was widespread before the beginning of agriculture. Certainly it is an ancient art in most places. It was present in Peru by the latter half of the third millennium B.C. (Steward and Faron, 1959, p. 42; Towie, 1961, pp. 8 and 104). In the third century B.C., Theophrastus mentioned bark cloth in his writings (Hough, 1894, p. 152), as did Strabo at about the time of Christ (XI:8,7:XVI:1.60). It appears in the Jataka of Buddha (Hough, 1894, p. 152), ca. 500 B.C., and in ancient Hindu literature as well (Hough, 1894, p. 152; Crooke, 1919, p. 240). Links between the making of bark cloth and the early manufacture of paper in Egypt have been suggested (Beals and Hoijer, 1959, p. 378 and Brigham, 1911, p. 5). It is connected with paper making in Java and possibly Japan (Bühler, 1940, p. 1171), China (Brigham, 1911, p. 5; Bühler, 1940, p. 1171), and Mexico (Brigham, 1911, p. 201; Condit, 1969, p. 47).

It is well known that the peoples of the Pacific used bark cloth. At one time it was well known that bark cloth was used over much of Africa as well, but as the practice of making it has declined or been abandoned over much of Africa, the knowledge of its widespread use seems to have become less well known. So much is this the case
that when I would mention the fact of its former widespread use in Africa to fellow students, including Africans, and to professors, they often replied that it was the first time that they had heard of it or in the case of Africans, that it was the first time they had heard of it being as widely used. Yet this material was one of the dominant materials for clothing in Africa before the advent of woven materials, particularly cotton cloth and raphia cloth (a cloth woven from the fibers of raphia palm leaves). Its dominance may have retarded the advance of weaving in subsaharan Africa. Certainly, it was still the dominant clothing material in much of Africa from the southeastern coast to the northern part of Central Africa when European exploration penetrated that area in the latter half of the nineteenth century. This was hundreds, if not thousands, of years after weaving started its spread over Africa. As European and Arab influence increased during the nineteenth century, the replacement of bark cloth by woven materials accelerated, until by the end of the first quarter of this century its complete abandonment seemed certain. While this demise has largely come about, there are some areas where the art lingers on and at least one where it even seems to be making a modest comeback. According to Joseph Muwonga,
Ugandan graduate student at UCLA, and others, the use of bark cloth for a shroud has been reviving in central and western Uganda, for example.

Early culture in subsaharan Africa, where bark cloth was so important, has had three main sources: indigenous; Northeast Africa - Southwest Asia, including among others the Egyptian and "Hamitic" elements; and Southern Asia, including both Indian and Malayan elements. The preponderance of arguments in the past has been towards Egyptian, "Hamitic", or Southern Asian origin of phenomena in the African cultural complex from divine kingship to cultivated plants. Yet, in 1959, George Murdock (pp. 64-77) presented an argument for an independent center of plant domestication in Negro Africa, specifically in the western Sudan. It was one of the first theories that indigenous contributions were of significant value. It was attacked in some of its details by some leading scholars in African history and in botany. However, recent archaeological evidence and phytogeographical evidence (some of it done before Murdock's book but unknown to him) support him at least to the extent of a center or possible centers in subsaharan Africa (Harris, 1967, pp. 98-99). Taken together this evidence led to the realization that more of African culture might be indigenous than formerly
acknowledged. Murdock's thesis and the supporting evidence are an example of the reexamination of old theories about Africa's past which has been initiated in recent years. Many scholars are now expanding our knowledge of elements of the Negro cultural complex which have developed in, not outside of, subsaharan Africa.

In attempting to decipher the origin of bark cloth in Africa there are three possibilities that should be considered: indigenous invention in subsaharan Africa, diffusion from northeastern Africa and diffusion from southern Asia. Interestingly enough, all three sources have been suggested. In order to examine the case for each of these three possibilities, some background information is essential. Accordingly, the nature of the product, the process, the tools, the source plants, the distribution of the art and the historical and archaeological evidence that is available will be covered in the following chapters.

First, it would appear appropriate to briefly discuss the conflict between two schools of thought regarding cultural traits. When approaching the problem of the how and why behind the distribution of a cultural trait or assemblage, the controversy over dispersal versus independent invention always seems to arise.
From Friedrich Ratzel to Carl Sauer, geographers have expounded theories on the origin and dispersal of various cultural phenomena. In Ratzel's day it was common for explorers, traders, missionaries, and presumably even scientists, to credit a "natural race" with inventing everything in their culture from weapons to housing. Possibly in his first edition of Völkerkunde published in 1885-88, but certainly in the second edition of 1894-95 (1896, Vol. 1, pp. 80-81), Ratzel attacked this idea. He noted the inconsistency of people in considering the "natural races" as being mere brutes just above the level of animals yet attributing to them all sorts of difficult inventions. These inventions, such as the bow, he felt probably required a genius or near genius to accomplish. In addition, this genius would have had to have enough freedom from the physical demands of survival to be able to spend time reflecting and experimenting with his discovery. For survival of his discovery, it had to be accepted by his peers and transmitted from generation to generation.

From Ratzel's espousal of the view of diffusion, his work on the diffusion of certain cultural elements such as bows and arrows, and his delineation of cultural groups and the need to correlate them, grew a school of diffusion
which developed a viewpoint of the opposite extreme from that of independent invention. Fritz Graebner epitomized this extreme. His *Methode der Ethnologie* (1911) stated the theory and method which he had developed. These were summarized in a review by E. S. Hartland (1914). In brief, Graeber believed that a cultural trait never developed more than once. If there was a break in the distribution of the trait, this was because its practice or use had died out over the passing centuries. In the review Hartland attacked the Graebnerian method as being too dependent on the similarity of forms for establishing cultural relationships. Wilfrid Hambly (1934, pp. 320-325) also took exception to this and noted that Boas objected to the same point.

Today there is less tendency to discount the possibility of independent invention completely without a strong case to the contrary, and ethnologists recognize, as did H. S. Harrison, that the simpler the invention the greater the probability of independent origins (1925a, p. 118). Each process or implement that is studied must have its case argued individually as to which of these two views best fits the evidence.

Most of the evidence available for this thesis has come from published sources. The literature on bark cloth
in Africa is very scattered - a sentence here and there in works of exploration, ethnology, archaeology, or botany. Occasionally a few details are given. It is true that in some works of missionaries, explorers and administrators from the last half of the nineteenth century and the first quarter of the twentieth century, there are extensive passages, particularly in those works dealing with Uganda. These are the exception rather than the rule. Since that time mention of bark cloth in print has rarely been more than a passing comment in works dealing with other topics. Barely more than a handful of articles have been written dealing specifically with bark cloth in Africa. Conjectures as to its origin are found in about as many works, some of which are concerned with using bark cloth as evidence for backing up the origin of an African cultural complex in another region.

This thesis intends to examine what has been done, to draw conclusions where they can be made with reasonable certainty, to suggest alternative solutions, and to pose questions that might be answered only by further research, mainly through fieldwork in plant geography and archaeology. No presumption is made that any conclusions reached are definitive, but only that they seem to be the most reasonable ones at this time.
CHAPTER II

PAST THOUGHTS ON ORIGIN

The first speculations on the origin of bark cloth in Africa and the first map of the distribution of the use of bark cloth for clothing in Africa were presented by Heinrich Schurtz in 1891 in an article with the translated title of "The Geographic Distribution of Negro Dress" (Map 1). Schurtz commented on its wide distribution and the several areas of seemingly isolated use. He argued that each area was hardly one of independent origin but that more likely the process was used at one time in the intervening areas and since had been displaced by more advanced materials. The influx of better cloth completely erased all traces of the former use of bark cloth in some places and left just weak traces in others. Going on, he suggested that one could think of bark cloth as being a discovery of the Negroes because of its wide distribution in Negro lands and even wider distribution earlier. Yet, since it was formerly found in Europe among the ancient Germans and the classical Massagatae (a people who lived
Note: Areas where distribution was shown by bars rather than solid were areas where bark cloth was not the only material used for clothing.
near the Caspian Sea in Herodotus' time) and in his day
in Ceylon and Polynesia as well as other places, he
speculated that it might be part of the "universal heri-
tage of Mankind" and, therefore, he felt the question of
origin had to remain unanswered for a while.

Earlier, in 1870, Rev. James Sibree contrasted the
use by the Malagasy peoples of plant material either in
the form of woven cloth or of bark cloth for clothing with
the prevalent use of skins by the inhabitants of the near-
by continent (p. 220). This use of vegetable fibers was
for Sibree another argument that the people of Madagascar
were of a Malayo-Polynesian origin. This comment on the
prevalent use of skins in Africa was written, of course,
before the widespread use of bark cloth in Africa was
generally known.

Leo Frobenius may not have been familiar with
Sibree's comment, but he certainly extended the idea of
the Malayan origin of bark cloth to all of Africa (1897,
p. 264 and 1898, p. 644). Frobenius was an Austrian of
the Graebner school of diffusionists. He grew up at a
time when intelligent, educated people ranked races accord-
ing to their cultural attainments. On this scale of
rankings, Negroes were below almost everybody except
Australian aborigines. Therefore, it was only natural if
one disagreed with the "mysticism" of independent invention to assume that those elements in their culture considered to be of a higher level probably came from elsewhere. Schurz' position that the Negroes might possibly have developed something as 'difficult' as making bark cloth was exceptional in his time. Frobenius presented an explanation more acceptable to the sensibilities of the times, yet just as plausible based on the evidence available to him.

What was his evidence? First, it should be made clear that Frobenius was using the distribution of bark cloth in conjunction with several other cultural characteristics with largely overlapping distributions such as bows, throwing knives, musical instruments, masks and structures to prove the influx of Malayo-Negrito elements into African culture and their spread as far as West Africa. Thus, the evidence for any of the features rests in part on the distribution patterns of all features. Secondly, there is the fact that the peoples both of Africa and of Oceania (including Indonesia) appear to have strains from more than one genetic pool. As Frobenius put it, "... the basis of population is composed of a fairly similar mixture of two races, the older black negritic [nigritischen] and the younger brown malaysian."
His third line of reasoning is based on the fact that there were reports of African "tribes" planting the source trees when they set up villages in new areas, and, therefore, the source trees must not be indigenous. If the source trees were indigenous, the bark could be obtained from local specimens and, therefore, there would be no need to plant them. Frobenius' concluding remark in 1897 on bark cloth itself was that "probably the bark materials must be considered to be of Malayo-Nigritic origin" (p. 264).

In 1898 he continued his case for the spread of Malayo-Negrito influences in the culture of subsaharan Africa. Again he pointed out "that certain culture elements appear together and are equally distributed" (p. 639). In reference to bark cloth he writes, "The path of diffusion . . . is still more evident. There can be no other explanation for the two broad strips of territory on which it occurs, extending from the east coast, the lake and forest region" (p. 644). Map 2, p. 11, illustrates the distribution of bark cloth as then known to him. His explanation evidently was that bark cloth first reached the African continent along that portion of the east coast opposite Madagascar, since Madagascar has strong Malayan elements in both its culture and its
population. From this beachhead on the coast the art advanced inland splitting into two lines of advance: one towards the west coast in Angola; the second north through East Africa and then west along the edges of the equatorial forest and through West Africa all the way to the Bissagos Islands (1897, Table 17 and 1898, p. 644). Finally, he stated, "The Malayo-Negrito affinity of the bark fabrics of Africa with the well-known tapa cloth of the natives of Oceania is favored by the fact that the trees yielding the raw material are planted and tended in great quantities in newly-founded villages" (1898, p. 644).

Almost four decades later in 1934, his theory and the Graebnerian method of determining cultural diffusions, for which Frobenius' work was an antecedent, were strongly attacked by Wilfrid Hambly. In speaking of Frobenius' theory in general, Hambly did admit that Indonesian influences had left their impact on the east coast. He also acknowledged that the proposed line of diffusion "up the Zambesi valley, thence along the Sankuru into the Congo basin and so to Cameroon and farther west Africa, presents no great obstacle." His main objections were that the theory relied too heavily on "the acceptance or rejection of cultural contacts on the ground of alleged resemblance of forms" and that the theory had no "historico-
psychological explanation." Concerning bark cloth he wrote, "Each of these elements . . . is of a non-specific kind. For example, there is nothing about the bark cloth, except that it is a bark cloth, to link it with similar material in any other part of the world. Stripping the tree, soaking the bark and beating it, are part of the general technique" (pp. 321-322).

Although Hambly's attack on the theory as a whole may be justified, it is strange that he selected bark cloth as the first example in arguing against the theory from among all those elements originally used by Frobenius to support his theory, because Frobenius had already changed his position on bark cloth and Hambly should have been aware of this. Hambly was familiar with the series known as Atlas Afikanus which was edited jointly by Frobenius and Ritter von Wilm. Hambly listed the part which appeared in 1922 among his references at the start of his attack on Frobenius' theory and the Graebnerian method. In that 1922 issue Frobenius did not include bark cloth in his evidence, and in part eight of Atlas Afikanus which appeared about five years before Hambly's monograph, he attributed bark cloth making to an Ethiopian, i.e., African, culture (ca. 1929, sheet 48). In this he was concurring with the opinion of
von Boeckmann expressed in the first part of *Atlas Afikanus* which appeared in 1921 (Pt. 1, sheet 1). However, neither von Boeckmann nor Frobenius seem to have presented any arguments for the African origins of this art.

Others besides Frobenius suggested Asiatic origins for bark cloth. Contemporaneous with him, Felix von Luschan stated emphatically that bark cloth making was brought from India to Africa via the coast opposite Zanzibar (1898a, p. 349 and 1898b, p. 722). His grounds for this opinion were based on signs of other actual and supposed Indian influences along the coast and in the interior. Von Luschan was followed by Franz Stuhlmann in 1910 who agreed on a southern Asian origin but suggests that it was carried by the early "Nigritier" peoples (dark skinned with wool hair) to Indonesia and Melanesia and to Africa via Arabia and Ethiopia. These people were the earliest inhabitants of Africa according to him (pp. 36-37 and Table 1a). This idea is based in part on the then current belief that man originated in Asia, in part on a belief in a single origin for the process of making bark cloth (p. 36), and in part on the Old World distribution of black peoples and the use of bark cloth being found among most of these peoples. Stuhlmann
suggested that the distribution of its use might have originally coincided with that of the cylinder hut (p. 37). This appears to be a very shrewd guess to the present writer because the distribution he shows for the cylinder hut (p. 6), together with the places he mentions in the text (p. 36), would combine into a composite distribution which would be remarkably similar to my final map (Map 8, p. 32).

Stuhlmann was the only author to refer to the origin of the process except for references to legends. He stated, "Formerly Semper had presumed that this discovery [the pounding of bark to obtain material] originated from the preparing of leather, which is quite possible" (p. 36). This appears to be the only mention of Semper in the whole work and it is not footnoted nor is there a bibliography. Exactly what Semper's reasoning was is thus unknown but it may be based on the practice of skins being overlaid with bast and pounded upon as a part of the processing of the skins. Conceivably this was the basis of Semper's idea.

Alexander Junger, in his monograph on clothing in Africa (1926), did not commit himself to either an African or a Malayan origin for bark cloth in Africa, though there are hints that he may have favored an African origin.
He accepted the argument that because cuttings of the bark supplying trees were carried to new villages to be planted around them they were not indigenous to the region, but noted that this only means the trees were not native to some areas, not that they were not native to Africa (p. 43). Thus, he questioned the full validity of the case for non-African origin but declined to propose that the art had an African origin.

A year after his attack on the possibility of a Malayo-Negrito origin for bark cloth making in Africa, Hambly stated that "making bark cloth is a typical Negro industry" (1935, p. 450). Presumably he would thus have subscribed to a subsaharan origin of the process. H. Baumann in 1939 seemed to favor a subsaharan origin, but was uncertain whether to ascribe it to a paleonigritic or a pygmy origin (p. 39), although he favored the former (pp. 208, 237, 291). Again, as with the previous assertions of African origin, these seem to be unsupported statements of viewpoints. There is no elucidation of the specific reasons for holding such an opinion.

A year after Baumann's book was published, A. Bühler published an article on the worldwide distribution of bark cloth. In it he asserted that the manufacture of bark cloth in Southeast Asia, Oceania, and the Americas
are probably all connected. However he declared,

In the case of Africa it is less easy to establish possible contacts with other bark-using districts, though bast fabrics are known practically throughout Central Africa. Such materials are found in use by tribes living in a very low state of civilization (e.g. the Pigmy tribes of the Congo), and by more advanced peoples who are acquainted with the use of the loom... Similarity of tools and technique have led to the assumption that the more advanced methods are a result of the influence of Asiatic contacts which might easily have been established by way of the sea route from Southern Asia (1940, pp. 1172-1173).

It is, however, advisable to proceed with caution when construing such influences and relations, as the production of bast fabrics requires a very simple technique. No great skill is needed, and, therefore, similar methods may have been evolved by primitive peoples entirely independent of each other. ... As stated above it is not easy to find a connecting link between the primitive tribes of the Western part of Central Africa and other areas where bast materials prevail. It is, therefore, admissible to assume that the technique originated in Africa, without being influenced by methods practiced in Asia (1940, p. 1174).

These, then, are the two main lines of thought on the beginnings of this craft in Africa: Southeast Asian origin with entrance into Africa through eastern Africa versus an African origin south of the Sahara. However, there is a third possibility which has passed unnoticed in all the discussion of the two main theories. It, too, deserves to be considered because it is linked with a
generally accepted major source of cultural heritage for subsaharan Africa, i.e. Egypt. R. P. H. Trilles, a missionary who worked for several years among the Fang, (or Fan, as he spells it) of northwestern Central Africa, published a book in 1912 in which he remarked on some of the similarities between the Fang culture and that of the Ancient Egyptians. Among other things he asserted that the fact that the Fang held the fig tree to be sacred was of great antiquity because

> Among the Egyptians, the fig tree was considered sacred and dedicated to the Egyptian Venus, Hathor. From this perhaps comes the word éthu, designating a garment made from the bast of the fig tree. The same word, éthu, has remained in the Fan language with the same meaning, 'garment', and inland Fan always make vegetable-fiber cloth from the fig tree, which they still dye red; this was formerly the color dedicated to Hathor, and it has remained the color of betrothal garments (p. 59).

Although his linguistics were probably shaky and the other things might all be purely coincidental, the possibility of such a connection is significant enough to be investigated and not discarded out of hand.

So now there are three possibilities to consider. From which of the three possible sources did the process come? To which does the evidence lend the greater weight? Certainly there has not been sufficient evidence
to support any of the three to the exclusion of the others. Hopefully, the analysis of the evidence which follows in the next chapters will lend support to one of them or narrow the choice to two.
CHAPTER III

ON THE NEBULOUS DISTRIBUTION
OF THE ART IN AFRICA

As will be remembered, part of Frobenius' reasoning for his theory on the dispersal of bark cloth was based on a distribution map (Map 2, p. 11). How accurate was that map? For that matter, how accurate have been the other maps which have appeared from time to time? Schurtz readily admitted his was an incomplete map based on the fact that not all of Africa, particularly that part in the northwest of the Congo Basin, had been explored. As a map for showing the distribution of the use of bark cloth in Africa, it and all the subsequent maps suffer from some of the same deficiencies.

The first of these deficiencies is that the maps are not maps of the distribution of the usage of bark cloth as known to their makers but are maps of the distribution of the use of clothing made from bark cloth. Bark cloth was far from being that restricted in its use. It served for blankets, curtains, mats, sacking, shrouds, money, ceremonial masks, and saddle pads among other things.
Many times some of these uses survived where cotton cloth or raphia cloth had displaced its use for everyday clothing.

Even as maps of the use of bark cloth for clothing, the first two in particular suffer from the problems of inadequate reporting. Many explorers' accounts would mention the most common type of dress or the dress of important people and neglect giving a complete picture. Sometimes the dress described would be that which was most familiar, i.e. the dress of the market place. John Barbot, who spent many years in West Africa as a French trading agent in the seventeenth century, described how the people put on their best clothes for market and then changed to cheaper wear when they returned home (1746a, p. 237).

As cloth penetrated a bark cloth area, the trade cloth became fashionable and bark cloth would be relegated to working wear if not abandoned. In some areas, then, bark cloth was worn only when one was too poor to obtain trade cloth, or enough trade cloth. In addition, some survivals of bark cloth for clothing were not something with which an explorer or trader in his casual passage through an area would necessarily come into contact; for example, initiation ceremonies were not held every day. In some tribes these ceremonies might be held only once
every three years or so. Bark cloth was often still used as clothing by the initiates even though it had disappeared from the day to day clothing. Less frequent than initiations were coronations. It is likely that the coronation of the Ashanti ruler was not the only case where bark cloth entered into the ceremonies when it was almost completely missing in ordinary life. A more common survival of bark cloth was as mourning garments. It cropped up in the regalia of a witch doctor or was used in his cures. The Portuguese priest, Merolla, described such a use among the Songo in the 17th Century:

... when the women are with child, they clothe themselves from the loins to the knees, after the country-fashion, with a sort of rind taken off a tree, which is like a coarse cloth, and so neatly interwoven, that it rather seems the work of the loom, than the product of the earth. ... the women with child make those garments receiving them at the hands of the wizards, who tell them they ease the burden of the great belly, and cause them to be easily delivered (1814, p. 236).

Another survival was found in the costume of 'Mumbo Jumbo', the central figure in that venerable old West African tradition for the disciplining of disobedient wives. If a wife became too much of a problem by fighting with other wives, being lazy, talking back, or in some other manner, and would not listen to her husband's remonstrances, he resorted to 'Mumbo Jumbo'. That is,
he told one of his friends his problems. After enough complaints from husbands were received, one of the other men donned the costume and the strange apparition would appear in the village accompanied by strange noises and his attendants. The frightened women welcomed him in hopes that by appearing happy to see him they would be spared. The women who were to be punished were separated one at a time, tied to a pole, stripped and beaten, all the time being chided by the whole village for their disobedience (Park, 1816, p. 38 and Wood, 1870, pp. 603-604).

One possible relict of the former use of bark cloth should be treated with caution. In many parts of Africa where bark cloth was previously used, the source trees, such as fig species and baobab, are revered. But this reverence for the particular trees which are known to be capable of supplying bark cloth is not necessarily indicative of former use. The reverence could be based on entirely different causes (Von Sicard, 1946).

Although many such survivals of bark cloth usage as those noted above have been recorded, probably just as many were never recorded. They were never recorded because they seemed too mundane or insignificant at the time. If we consider, in the light of the following comment made shortly after the start of this century, how
rarely certain topics graced the pages of exploration, we might surmise how numerous were the lost opportunities for enlightenment about more than one subject.

Probably not many generations have passed since such bark fabrics and kilts of skin were the only clothing. . . . Even to-day, large quantities of this bright-red or drab material are still to be found; but if we wish to see it, we must look in the granaries and on the drying-stages inside the native huts, where it serves less ambitious uses as wrappings for those seeds and fruits which require to be packed with special care. The salt produced at Masasi, too, is packed for transport to a distance in large sheets of bark-cloth (Weule, 1909, p. 274).

At any rate Schurz (Map 1, p. 11) and Frobenius, on his first map (Map 2, p. 11), did not include any of these. Nor did they search the historical records thoroughly for reports of the former use of bark cloth for clothing. Von Boeckmann (Map 3), Jünger (Map 4), and Frobenius, for his second map (Map 5), did at least attempt to include these residual uses and historical records when they were concerned with clothing. They did not include references to uses other than clothing. Besides the fact that they missed many references, at least one of these three, Jünger, did not include on his map all of the areas of usage with which he was familiar. For instance, he notes that "bast fabrics were still found along the Niger knee" (1926, p. 92) but this is not shown on his little map.

Likewise, Bohumil Holas (Map 6) did this. He
Map 5: Distribution of Bark Cloth Clothing in Africa After Frobenius, Circa 1929

Map 6: Distribution of Bark Cloth Clothing in Africa in 1949 After Holas, 1949
specifically mentions that he has omitted outliers of bark cloth usage from Wadai and Sennar and probably others as well which he did not specify (1949, pp. 79-80). But Holas' map is in a different category from the rest for two reasons: first, it is a sweeping generalization not intended to show detail, nor for that matter to be accurate in the location of its boundaries; and second, it is supposed to be a map indicating areas of recent use and not of the former areas of use.

Another problem from which the two earliest maps suffered more has to do with the location and extent of tribal areas. At the turn of the century the limits of tribal territory were unknown for the vast majority of tribes. On the original of Schurtz's map there is a small barred area for bark cloth with the name of the Banda people printed across it. The barred area is only about one-tenth the size of that shown for the Banda on George Murdock's map of tribal areas (1959, map in pocket at back of book). Likewise, a comparison of the location of rivers and lakes between the originals of these older maps and, to a much lesser extent, those of the 1920's with a modern map shows that the locations were wrong in several places. Since these features were not correct,
it follows that some tribal locations were wrong as well. Again these are problems which have lessened with increased knowledge.

Another deficiency is that these maps do not take into consideration the archaeological record. Admittedly, that would have been impossible for the first two because none existed at that time. Unfortunately, even for the maps done in the twenties, some of the more important finds had not yet been discovered.

Two maps of the distribution of the use of bark cloth in Africa have been compiled for this study. The first depicts, by tribal areas, those specific peoples for which this writer obtained a reference to the use of bark cloth as well as the locations of archaeological finds (Map 7, in pocket). A few exceptions to this are noted on the map, such as reference to political or geographical areas where a particular people is not mentioned. The second map (Map 8), combines findings shown in Map 7 with those of preceding writers, particularly Jünger and Frobenius' second map, for a composite picture. Moreover, it shows hypothetical additional areas of past usage.
Map 8: Actual And Hypothetical Areas Of The Use Of Bark Cloth In Africa

Legend
- Areas where the use or possible use of bark cloth has been reported
- Hypothetical areas of probable use
- Hypothetical area of possible use
- Archaeological finds of bark cloth or bark cloth hammers
- Northern and southern limits of baobab

Sources: Various

JDC, 1972
Since the author has been questioning the reliability of previous maps, something may need to be said about the reliability of his own. For plotting of data, the tribal map presented by Murdock with his *Africa: Its Peoples and their Culture History* has been redrawn on to an equal area projection (sinusoidal). All the maps were drawn on the same projection to facilitate comparison. There is a possibility for error in the redrawing, but any such errors should be negligible.

Other sources of error are more important. The first general category had to do with the location and extent of the area to which reference was made. Murdock, in drawing his boundaries, has had to rely mainly on data from the 1800's and 1900's. Obviously such boundaries do not show the situation 500, 1000, or 2000 years ago. Moreover, in labeling the tribal areas he had more often than not included more than one people in such a tribal area. The area label was that of the people he considered dominant in that area. Several instances were found where this writer had definite or probably references to a "minor" group or groups in an area. Since the exact distribution of the group or groups in question within the larger area usually could not be determined, the whole area has been indicated as being one of bark cloth use.
In the extreme case, it was found that some group such as the Binga and the Mbuti pygmies were spread over several of the tribal areas shown on Murdock's map. Should usage be indicated in all of these tribal areas? For the Mbuti the problem was solved by the fact that definite or probable information on the other peoples in almost all of the tribal areas in which they live was obtained. For the Binga, the situation was resolved by outlining the area within which they are found which was outside of the areas of group for which specific data was available. A similar solution was resorted to for one political and one geographical reference, i.e., Senegal and Wadai.

Other references to political divisions and references to tribal groups, such as Nyamwezi, created a problem in mapping as well. If there was information on several peoples within a political division itself, such a unit was ignored for Map 7. In the case of tribal groups, the areas within such a group for which a reference was not obtained, other than the one to the group itself, are shown as areas of possible use. General area references such as to the "equatorial forest" were ignored with the exception of the one to the bend of the Niger river.
Finally, within this category falls the problem of tribal names. Despite Murdock's great efforts in compilation, his list is far from exhaustive. In a few cases I recognized a name because the variation in spelling was slight and it applied to the area where the approximate location should be. In a few other cases I was able to resort to geographic coordinates. For one such problem, i.e., who were the Anzichi, it was assumed, based on old map and verbal descriptions of where they lived, that they might have been the ancestors, or the predecessors, of the modern Teke, so the Teke area is indicated as an area of possible use even though the reference was to a definite use. But some perfectly good references have been set aside because the identity of the group with that of one listed by Murdock could not be determined nor was the writer able to determine the group location by referring to other works.

The second general category of problems was concerned with whether or not the reference was to bark cloth proper. Not all references to bark or bast fiber actually refer to felted bark cloth. In uncertain cases a judgment had to be made as to whether it was probable or it was possible that bark cloth proper was meant. The following example illustrated the resolution of one such case.
In a note on the baobab collected within the area of the Gogo, J. A. Grant states that baobab bark was made "into long fringes worn, like the Highland kilt" (1875, p. 38). Previously, Sir Richard Burton, in writing about neighboring peoples, the Sagara and the Luguru, had noted kilts of baobab bark fiber being worn (1961, Vol. 1, pp. 236-237). Grant's statement implies that the bark was separated into a series of strings and was not a piece of cloth. Burton's writings do not contradict this although they do not say anything about fringing. Are these references to real bark cloth? The author thinks so because J. J. Monteiro mentions that the baobab bark skirts of the Kisama women split "into a bundle of strings" with use (1876, p. 199). Therefore, all three areas are shown as areas of probable use. Similarly, a reference to the use of shredded bark for cloth among the Zigula, a nearby group, probably refers to the same sort of thing and therefore probable use is indicated.

Another example concerns woven versus non-woven bark cloth. There are references to woven bark cloth for both the Shona and the Tswana. For the Shona there are other references which made it plain that beaten bark cloth was made by some of the peoples within the group. Therefore the Shona peoples for which there were no
of production. *Brachystegia* species and *Ficus* species do extend beyond its southern limit along the east side of Africa and *Ficus sycomorus* is found along the Nile corridor beyond its northern limits. The line of the northern limit of baobab distribution lies just south of the 100 millimeter annual precipitation line. During the wetter phase of the Sahara about 6000 years ago, the limits of the baobab might have been two hundred miles farther north.

The Nile valley from subsaharan Africa to Egypt might also be shown as a hypothetical area of use for its entire length because of the spot location of ancient use in Egypt, and the areas of recent use between the Sudd and the convergence of the Blue Nile and the White Nile, and because of additional information to be discussed in later chapters. However, the evidence is probably not yet sufficient to justify such a connection. The spot location in Egypt represents a predynastic find as a shroud in graves of the Gerzean culture, ca. 3500-4000 B.C. The reference is not definite. The exact wording is, "Wrappings of bark fibre or woven rhamie fibre" (Murray, 1956, p. 93). Since the word "woven" is used only as an adjective for the rhamie fiber, it was assumed that the bark fiber was not woven and therefore
additional reference are indicated as being possible users. As for the Tswana, since there were no contradictory references and the reference was explicit as to the bark being chewed into threads and woven, they are not shown on the map as having used bark cloth.

After all things are considered, the author feels Map 7 is of sufficient accuracy to show that the distribution pattern was not like that shown on previous maps. Since undoubtedly information on some areas or peoples has been missed, a composite map based on this writer's information and the maps of von Boeckmann, Jünger, and Frobenius (his second map) is justifiable. These three maps are considered to be fairly accurate in as far as they were aware of the use of bark cloth for clothing. The composite (Map 8) still leaves gaps. Gaps which are completely or almost completely surrounded by areas of use are shown as hypothetical areas of use. Other hypothetical extensions are made to include archaeological finds and areas where suitable plants might reasonably be found.

The outer limits might be taken as just short of the limits of baobab distribution. Of all the source trees, this tree generally has the greatest dispersion into the drier regions of Africa and away from the core
probably bark cloth. Later the author states,

The Gerzean culture differs in almost every aspect from the Amratean [the preceding culture], and is clearly of a more advanced type. It probably began by peaceful penetration, but the great superiority of the Gerzean weapons in number and efficacy and the complete displacement of the Amratean culture suggest a military conquest, by which the Amrateans were either exterminated, or more probably reduced to a subordinate position. At no other period of Egypt's pre-history or history can there be found so complete a change in the continuity of her civilization. The invasion of the dynastic people was preceded by the acceptance of new ideas long before the actual conquest. The centuries of Hyksos rule eclipsed for a time but did not destroy the ancient culture. From the Gerzean period till the Roman conquest Egyptian civilization shows development and even decadence, but not drastic change (Murray, 1956, p. 94).

The preceding cultures wrapped the dead in goat skins and occasionally woven cloth. If this suggested invasion, peaceful or otherwise, brought the first introduction of bark cloth to Egypt, and that would be a matter of conjecture, it would seem to be a rather late date for the further penetration of the product down the Nile Valley. Not because there would not have been enough time for transmission south, but rather, if the superior technique of weaving cloth was available for transmission and competition why should this technique be accepted and become dominant? In addition, some authorities have
plausibly contended that cultivated cotton came out of subsaharan Africa before 3000 B.C. (Wrigley, 1960, p. 193). If this is correct, then bark cloth would have to be much older.

Now, let us return to the opening question of this chapter. How accurate was the map on which Frobenius saw his corridor of diffusion? A comparison of that map (Map 2, p. 11) with the composite map (Map 8, p. 32), readily shows the answer. It was not very accurate. Frobenius' corridor of diffusion was an area where wearing of bark cloth had persisted. There is no apparent diffusion corridor. The distribution of archaeological finds (which are discussed in Chapter 6 but plotted on Map 8) also fails to support Frobenius' view. If one disregards the Egyptian site (and the recent Zambian site) one can see two concentrations of finds, one in the western Sudan and one stretching across the northern part of the Congo basin into Equatoria Province of the Sudan and into Uganda and Kenya. (Dr. Desmond Clark in a letter to the author, 1971, stated that he has changed his opinion about some stones found in the Orange Free State and no longer considers that they might have been used as bark cloth hammers as reported by Lanning in 1959, p. 81). From these two concentrations an east-west band stretching
from Guinea to Kenya might be conjectured. There have been many excavations in areas along the supposed corridor of diffusion (as seen from maps in J. D. Clark, 1970), but there is no evidence of bark cloth at early levels. As for a contact through the Kenya or Tanzanian coast, Murdock placed the first Southeast Asian settlement in East Africa at shortly before 100 B.C. while most other authorities feel that between 600 and 900 A.D. is more likely (Wiedner, 1964, p. 18). In order for the process to reach Njoro River Cave, 300 miles inland, by 960 B.C. contact by southeast or southern Asian peoples would have to have been by about 1100 B.C. at the latest. Admittedly, in the future something may be uncovered, but based on the present distribution of archaeological finds, the core area in Africa should be somewhere in or near this east-west band.

Although it would be tempting to let this view stand, one difficulty must be pointed out. With the exception of the Njoro River Cave find from about 960 B.C. in Kenya (Leakey and Leakey, 1950, plate 7, and Cole, 1963, p. 286), and the much more recent find from Munsa Earthworks, Mubende District, Uganda (Lanning, 1957 and 1959, and Cole, 1963, pp. 317 and 319), none of the artifacts can be even approximately dated with any
assurance of accuracy, because of the manner in which they were uncovered. The finds in Guinea were found in diamond mining operations. Van Noten pointed out that those of the Uele basin were "nearly without exception found by chance, by amateurs or by occasional collectors, at the surface or at slight depth, e.g. by cultivating." Van Noten's lament applies to all the artifacts in the band other than those just noted. "We do not have anything coming from a scientific excavation, as one was never carried out. . . That is the main reason for our ignorance, not one stratigraphical detail!" (Van Noten, 1968, p. 3). However, these tools appear to be neolithic in character and their age is usually suggested as being before Christ and perhaps a millenium or two older (Van Noten, 1968, p. 4). But there are objectors. Van Noten feels that the Uelian finds are only a few centuries old (1968, p. 5).

As a final comment on the past and present distribution of the process, it should be emphasized that distribution of the process does not deny an external source of origin for subsaharan Africa be it through Egypt or through southeastern Africa, but it can lend only weak evidence for the former view and none at all for the latter. On the other hand, the distribution of artifacts,
while incomplete and of questionable age, seems to deny the latter and give only weak evidence to the former.
CHAPTER IV

THE TECHNIQUE OF MANUFACTURE

In discussing bark cloth, H. S. Harrison has stated that

The preparation of this material is carried on in Africa, the Malay Peninsula and Borneo, parts of America, and in Oceania, where it is a characteristic product. The general method of manufacture differs but little in all these regions -- the bark is stripped from the tree (the outer rind, or true bark, being scraped away), and after being soaked in water is hammered with straight wooden beaters upon a log or table (1924, p. 65).

Despite this statement and the implication in a previously quoted statement made by Hambly (pp. 13-14), there are some interesting variations in the practice of the art in various parts of the world. Both were wrong about the universality of soaking. A. D. F. Thompson pointed this out in comparing bark cloth making in Celebes with that in Buganda. In the Celebes the bark was boiled and soaked before beating while in Buganda "water plays no part in the process" (1934b, p. 172). This is an exaggeration (as will be seen later), but there is no soaking. Otis T. Mason noted a fundamental difference as early as 1895.

44
"The bark cloth of Africa and Tropical America are [sic] much simpler in construction than that of Polynesia. In neither of the continents is there any overlaying or uniting of pieces. Each garment is made, so to speak, of the whole piece" (p. 228). Although Mason was wrong about Tropical America, he was right about Africa.

The patterns exhibited by the various techniques are complex. Add to this complexity the uncertainty based on gaps in knowledge and little can be synthesized out of the total milieu. It is evident that some societies had more than one method of procuring bark cloth, depending on the purpose for which it was to be used or quality desired. Other peoples appear to have had only one basic technique. Uncertainty clouds this point for most groups and even casts its shadow on whether or not a complete description was recorded of the method observed by many authors. But before attempting to analyze what is available some complete descriptions of the process by which bark cloth was manufactured in a few societies might be helpful in understanding the multiplicity of methods.

The first description will be based on this writer's observations among the Ganda of East Africa augmented by published descriptions and discussions with members of the Ganda people who are familiar with the process. The most
commonly used source tree among the Ganda is *Ficus natalensis* (Eggeling and Dale, 1951, p. 255) which is cultivated for this purpose. Although a fig tree is shown in Photo 1, it was not identified as to the species. It was about twenty feet tall with a basal diameter of about ten or eleven inches. It had been used at least once before for furnishing bark cloth. With a knife, the outer bark was scraped from around the trunk from a height of about two-and-a-half feet to about seven feet above the ground. (A short ladder is used when the artisan wants to cut the bark higher up to obtain a longer piece). When most of the outer bark had been scraped off, a vertical cut was made from top to bottom in the exposed bast. Next, the bast was girdled with a cut at the bottom of the exposed section. After pulling a small corner of the bast away from the trunk, a wedge-shaped piece of wood was inserted and worked back and forth sideways and up and down while another man pulled the bast outward from the trunk (Photo 2). Only after most of the sheet of bark was loosened from the trunk was an encircling cut made at the top of the exposed bast. Upon removal of the sheet of bark, the exposed tree trunk was wrapped in banana leaves to protect it. Usually cow dung or mud was applied before wrapping or if the trunk looked dry when it was unwrapped
Photograph 1
Scraping off the outer Bark

Photograph 2
Removing the inner bark
after three to five days.

One end of the bast sheet was laid over a beam in a matter of minutes. The remainder dropped in careless folds on the opposite side of the beam from the artisan. He started beating it with a heavy wooden mallet similar to that in Figure 1. The pounding proceeded from one side of the sheet to the next and then back again before the sheet was pulled a few inches towards the artisan. This procedure was maintained until the entire length of the sheet had been traversed (Photo 3). The sheet was turned over and the process repeated. With the commencement of the third pounding, a few inches of bark were folded back on the rest and then pounded flat. The strip of folded bark was folded over the adjacent part of the sheet. Again this was pounded flat (Photo 4). The repetition of this procedure continued until the whole sheet was in this flattened roll. The sheet was unrolled and subjected to a fourth pounding. For this pounding it was folded again, but in larger latitudinal folds so that it could have one side folded over to the other at the end. After this final beating the finished product had the flexibility of starched cotton twill. The piece was now ready to be sold in that state to tourists or to be made into a tourist item such as place mats. Since most tourist items consist
Figure 1: Bark cloth hammer similar to that used by the craftsman in photographs 3 and 4.

Figure 2: Bark cloth fumigator.
Photograph 3
Initial Pounding

Photograph 4
Second Pounding
of at least two thicknesses of bark cloth sewn together, it did not matter that there were patches of outer bark still adhering to the bast here and there as these could be placed on the inside of the article. Included among the variations of this method among the Ganda are scraping off the outer bark after removal, sprinkling of water on the bark during the pounding, and sun drying of the bark before the final pounding.

Several Ganda people have told me that this is the method for making the most inferior bark cloth. For better bark cloths the bark is kept overnight, scraped and cleaned on both sides the next day, and beaten with three different mallets. Each of the mallets is specially grooved so that there is a progression from coarse grooving to fine grooving as one beater is exchanged for another during the progress of the operation. This minimizes the chances of tearing the bast as it is spread thinner and thinner.

Joseph Muwonga, a member of the Ganda whose grandfather came to Rwashamaire in Ankole to be saza (county) chief, watched the official bark cloth makers as a child, and sometimes made bark cloth himself. From his experience he described to the author two methods used to obtain better quality bark cloth. Bark cloth of a quality
intermediate between that which this writer has seen made and that of the finest quality is made in the following manner. After the outer bark has been scraped off, the inner bark is covered by banana leaves and allowed to stay on the tree for a few days while the sap seeps through it. Then it is removed and pounded out. The result is a softer, lighter colored fabric. The finest fabric is obtained by a process which is similar to the second method in its first steps. The additional step of fumigation before using is taken for this fabric. (See illustration of fumigator, Figure 2). As a result of the heat and smoke, one side of the bark cloth is darker than the other.

Neither of the methods described by Muwonge are mentioned in published accounts of bark cloth production by the Ganda people, but this author has heard of the method he described for obtaining intermediate quality bark cloth from others of the Ganda people and this method was described in the 1870's by Verney L. Cameron as the method used by the Nyamwezi of Tanzania (1969, p. 141). Fumigators were widely used among the Interlacustrine Bantu for scenting bark cloths and killing the vermin in them after use, so it is entirely likely that one would be used to scent the bark before the first use.
A. D. F. Thompson contends that the best bark cloth in Buganda (the territory of the Ganda) came from Buddu District, where the bark was placed on a grating in a pot and steamed before the beating started (1934a, p. 19). The steaming would probably perform much of the same function as soaking, but would leave the bark easier to manage. After steaming for about an hour, the bark was beaten for a short time daily for about a week. The final step was to sun dry it until it was a rich reddish brown.

The Ganda are not the only society which had multiple methods of manufacturing bark cloth. Published sources indicate that the Baule of the Ivory Coast had at least three methods, the third being a minor but rather important variation of the second method. These methods varied with the source plant. The method used if the source was a cultivated fig (usually *Ficus Thonningii* Blume or *F. Vogelii* Miq.) was to ring the tree twice, once under the branches and once just above the ground, connect the cuts by a vertical incision and remove the bark. The bark was then soaked in water, taken out and beaten, and then washed with "a lot of" water (Chevalier, 1912, pp. 222-223). If the source plant was *Antiaris africana* Engl., the forest was searched until a suitable tree was found. Then the tree was cut down and the trunk was
sectioned into logs of suitable length. The bark was removed, taken to the village, and partially dried in the sun before beating it. Sometimes this species was planted in or near villages. In this case the tree was not cut down but branches were cut off instead (Holas, 1949, pp. 78-79). Otherwise the method probably followed the pattern of the second method. Rather interestingly, the Fang in Gabon reverse the species as far as soaking goes. They soak the bark from *Antiaris africana* and do not soak the bark of the fig trees, although they do rinse the bark cloth made from fig trees after the beating is completed (Raponda-Walker and Sillans, 1961, p. 293 and Tessmann, 1913, p. 218).

A rather distinctive variation has been reported from two rather disparate locations, among the Ha on the east shore of Lake Tanganyika (Burton, 1961, V. 2, p. 64), and among the Yakoma on the Ubangi River 800 miles away (Alexander, 1907, V. 2, p. 245). Instead of removing the bast after scraping off the outer bark, there is a delay until fresh bark grows down over the exposed trunk. This necessitates a delay of weeks, perhaps months. The fresh bark is then removed and beaten into cloth rather than the original bark. This variation appears to be sufficiently sophisticated that this is not likely to be a case of
independent development, but unfortunately these two seem to be the only records of this variation.

There are numerous ways which might be reiterated here but the foregoing descriptions may convey some idea of the variety of methods. All of these ways could be looked at with three parts of a generalized technique in mind. First, there are ways to try and soften the bark in addition to the beating process. Second, there are attempts at improving the basic product in some aspect, i.e., durability. The third category is concerned with the ways of obtaining bark from the trees.

Several subsidiary means of softening the bark have been developed. For instance, boiling the bark with lye to bleach it both softens the bark and changes its appearance. Likewise, rubbing the bark with oil and powder produces the same effects. Among the methods restricted to the first category are chewing the bark, steaming it and soaking it. Chewing appears to have been practiced by the territorial predecessors of the Bemba tribe of Zambia. These predecessors were probably related to present day Bushmen (Clark, 1950, p. 48), who, in the process of preparing string and rope, chew the bark (Schapera, 1930, pp. 312-313). The Tawana also chew bark for making threads for a woven bark cloth (Willoughby, 1909, p. 230).
The only reference to steaming is to the Ganda.

Soaking at some state of the preparation, while not universal, is the most common means of additional softening. Usually the bark is soaked before beating and for just overnight, or a couple of days at the most, but there are exceptions. Soaking seems a rather simple improvement, so simple that it would be impossible to rely on it to show a link between the practice of the process between two places. If it was accepted as expressing a connection, there would be no way of using it to eliminate one of the hypothetical sources. The ancient Egyptians soaked flax before beating it with clubs somewhat similar to those used by some subsaharan tribes to mark bark cloth so they were familiar with the technique (Wilkinson, 1878, V. 2, p. 173). Soaking was used by peoples in Indonesia and Oceania so this hypothetical source could not be excluded. The absence of soaking in the process might be considered as more important in establishing connection between two neighbors or near neighbors than its presence.

Boiling might be considered a refinement which would indicate some connection. But boiling has a spotty distribution: Angola, southern Tanzania, Celebes, and possibly Madagascar. Either the information is incomplete or there is no correlation.
One might think that wringing the bark would be associated with soaking or boiling, but sometimes it was done when no water was involved (Weule, 1909, p. 276). There is a cluster of tribes in Northern Mozambique and Central Zambia and two spot reports, the Rundi and the Fang, where the bark was wrung. This practice among the tribes in the cluster is probably connected but the two spot occurrences are unlikely to be related to the cluster.

Of the methods used for improving the product other than those mentioned which overlapped with softening methods, only three seem worthy of attention. First, in the field of decoration there seems to be a disparity between the general pattern for Africa and that for outside of Africa. In Africa, if the bark cloth is decorated, it is usually dyed a solid color, red and black being about equally common. Blue is the third most common color but its use is far less frequent than either red or black. White is the next most common color but either is obtained by bleaching or as a natural color. The application of patterns instead of solid colors is strongest around the region of the great lakes but is found in a few other places. Outside of Africa, on the other hand, it appears that bark cloth is usually decorated with patterns.
Fire was used as a device both for bleaching the inner bark and as an aid in removing the outer bark. With the exception of the Fang, the tribes which employed it were in eastern Africa. The Mbuti pygmies used fire in making their bark cloth (Turnbull, 1965, p. 197) and the Bushmen in obtaining bast fiber for rope and string (Schapera, 1930, p. 312).

From the point of view of technique and the type of finished product, the matting together of three or more layers with the fibers of successive layers running perpendicular to each other as opposed to the use of a single layer is probably the most important difference. This crossing of fibers is a concept akin to weaving in that it gives uniform strength in more directions. Its main deficiency is that the layers sometimes separate. Sometimes this process of layering is used to join more than one sheet together to obtain a larger sheet. The resulting seam is not likely to be as strong as a sewn one.

This layering technique appears to be almost universal outside of Africa and does not occur at all in subsaharan Africa. Basically the same technique was used by the Egyptians for making paper from papyrus so they were probably familiar with it. It may have been used in the paper making process on the Indian subcontinent. If
so these people would have been familiar with it even though it is not mentioned in modern descriptions of making bark cloth in Assam (Walker, 1927, pp. 15-16) and Southern India (Lock, 1882, p. 919). Oddly enough, it does not appear in the descriptions of the process on Madagascar. But it is possible that bark cloth making in Madagascar came with the Negroes who crossed from the mainland to the island rather than with the Malaysian elements of the population.

The third category of variations mentioned above had to do with ways of obtaining the bark. With one exception the significantly different variations in this category fall into renewable versus non-renewable use of source plants. This one exception is the beating of the bark while on the stem in order to loosen it and facilitate removal. In Africa this procedure was practiced in West Africa and by the Bushmen in procuring bark for string and rope. Outside of Africa it was found in the Indian subcontinent, Malaysia and Melanesia.

Originally bark cloth makers cut down the trees from which they obtained their raw material. Then they did nothing to replace them or conserve them for future use. Sometimes, instead of cutting down the main stem, use was made of the branches. This was a step, conscious
or not, towards conserving the trees as resources. A further step was to plant cuttings, or roots, and then harvest the bark by cutting down the plants when they were about two years old. The most advanced method was to plant cuttings and, after the tree was old enough, to harvest the bark by removing part of the bark without cutting down the tree. The removal of the bark was usually done by ringing as in the description of the methods of the Ganda tribe although sometimes a smaller section was removed. A well cared for tree might produce anywhere from twenty to forty such harvests (Thompson, 1934a, p. 20 and Eggeling and Dale, 1951, p. 255).

The felling of trees to obtain bark occurs universally outside of Africa. Where cultivation of source plants occurs as in Indonesia and Oceania, it is of the first type described in the preceding paragraph. In Africa this procedure of cutting down the trees is practiced with all species except cultivated fig trees and the cultivation of the fig trees in almost all cases follows the second cultivation procedure described above.

What then can be surmised from all of this? Not much! Almost nothing was found to support Bühler's remark, quoted on page 20 of this paper, that a similarity of tools and technique existed between the more advanced
bark cloth makers of eastern Africa and those in Southeast Asia. Most variations of method are simple enough that they could be developed independently. But some of the simple variations, i.e., soaking, are almost universal — so how can one say they originated here, or there? On the other hand, there is a general disparity between the type of decoration of bark cloth used in Africa and that used outside of Africa. It is doubtful that this has significance for the origin of making bark cloth because decoration is not an integral part of the process of making bark cloth and decoration can be subject to so many influences, such as the concept of art, purpose, medium, and conventions. Almost universally outside of Africa there was a greater sophistication in the manufacturing process while within Africa there was a greater sophistication in the cultivation of the source plants. These differences might be presented as evidence against an external origin for the process in Africa. However, it must be remembered that these are developments in the technique, developments which were not originally present, so they cannot be definitive evidence but only suggestive. Thus, an inspection of the methods used in Africa and outside of Africa suggests an indigenous origin for bark cloth making in Africa. But the evidence is far from conclusive.
CHAPTER V

THE SOURCE PLANTS: CULTIVATED AND UNCLTIVATED

In the second chapter it was stated that one of the arguments in favor of the introduction of the process to Africa was the cultivation of the source trees. Jünger, it was pointed out, partly destroyed this argument. However, an examination of the source plants should not be neglected because of this. The consistent use of various plants can be considered a basic part of the process and should be examined.

Ratzel argues that such cultures are conservative as a rule because an idea, once discovered, must be passed on to succeeding generations in order to survive and in societies where communication is unwritten, memory serves as the storehouse of all knowledge. Thus, new ideas or ways of doing things often fall by the wayside. Competition with proven means is difficult (Ratzel, 1896, V. l, pp. 77-79). Therefore, it could be argued that once a plant, or plants, have been adopted as the source of the bast they would tend to remain the source as the idea spread from group to group as long as the receiving group resided
within the range of the particular plant. This would be much more the case if the plant were cultivated. Thus, when the use of a plant is widespread, such a use could be considered to have spread with the diffusion of the process. Plants whose use is more localized could be considered as discoveries through local experimentation done when the usual source was unavailable, i.e., when over-collecting has temporarily eliminated the source plant in the local area or when the source plant did not grow in a new area to which the idea spread. If the same plant is used in widely scattered locations, then we must either fall back on Graebner's proposal that the hiatus is due to the use dying out in intervening areas or on the notion of independent discovery. In the case of cultivated plants, if two areas have widespread use of different plants when at least one of the plants could be grown in both areas, this would indicate either separate origins or connections so ancient that there has been time to acquire and establish different source plants throughout the areas. For example, the breadfruit plant, *Artocarpus incisa*, was used in Polynesia, Micronesia, Melanesia and Indonesia, and the paper mulberry, *Broussonetia papyrifera*, was used in Polynesia, Melanesia and Indonesia. They were the two most widely cultivated source plants in Oceania
yet neither carried to Africa where the cultivated sources are fig (*Ficus*) trees. Yet the breadfruit has been successfully introduced to Africa in modern times and there is no reason to believe that the paper mulberry would not thrive if introduced.

Because of the conservatism mentioned above, one might think that areas into which a process diffused after cultivation of the sources was achieved would tend to be more homogeneous in the principal plants used. There would be less variety than in the source area. On the other hand, an area with a proliferation of plants used could indicate areas where experimentation was carried out. This might be the result of a hunting and gathering group moving from an area of relative abundance of one species to another area where that species was scarce. In experimenting with other plants, several suitable substitutes were discovered and retained, thus proliferating the number of source plants.

The assembling of data on the source trees was plagued by even greater problems of inadequate reporting than that for the simple use of bark cloth. Phrases such as "bark cloth", "the bark of certain trees", or "fig tree and other trees", are all useless for specific identification. Even when the local vernacular name was given,
identification of species was often impossible. Then there were the novices in plant identification who, having heard of or seen a related species, promptly identified a source tree as such when more often than not it was a completely different species. Despite these handicaps enough information has been accumulated to make several aspects of the situation clear.

First, a great variety of species were used as source plants both in Africa and in the rest of the Old World and Oceania (Table 1). A greater number of species seems to have been used in subsaharan Africa which might indicate more experimentation before the use of certain plants became dominant.

Second, virtually all of the important sources of bark for subsaharan Africa, such as the figs and the \textit{Brachystegias}, are endemic to Africa while the main sources outside of Africa, the paper mulberry and the breadfruit, seem to be widely spread throughout Southeast Asia and Oceania. This exclusiveness of African sources is demonstrated even among the figs. As can be seen from Tables 2 and 3, most of the African fig sources are endemic. Only the members of section \textit{Sycomorus} might be found outside of Africa. Of the source plants from the section, two are endemic, a third extends outside of Africa only to
TABLE 1
Summary of Source Plants for the Old World and Oceania

<table>
<thead>
<tr>
<th>Africa (11 families, 17 genera, 60 species)</th>
<th>Madagascar (2 families, 2 genera, 4 species)</th>
<th>Eurasia and Oceania (9) families, 18 genera, 30 species</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Moraceae</strong></td>
<td><strong>Moraceae</strong></td>
<td></td>
</tr>
<tr>
<td><em>Ficus</em> 32 sp. + 2 sp. of uncertain identification</td>
<td><em>Ficus</em> 2 sp. + 1 sp. of uncertain identification</td>
<td></td>
</tr>
<tr>
<td><em>Chlorophora</em> 1 sp.</td>
<td></td>
<td><em>Broussonetia</em> 1 sp.</td>
</tr>
<tr>
<td><em>Antiaris</em> 2 sp.</td>
<td></td>
<td><em>Artocarpus</em> 4 sp.</td>
</tr>
<tr>
<td><strong>Malvaceae</strong></td>
<td><strong>Malvaceae</strong></td>
<td></td>
</tr>
<tr>
<td><em>Hibiscus</em> at least 1 sp. of uncertain identity</td>
<td><em>Hibiscus</em> at least 1 sp. of uncertain identity</td>
<td></td>
</tr>
<tr>
<td><em>Caesalpiniaceae</em></td>
<td><em>Malvaceae</em></td>
<td></td>
</tr>
<tr>
<td><em>Brachystegia</em> 8 sp.</td>
<td><em>Malvaceae</em></td>
<td></td>
</tr>
<tr>
<td><em>Bauhinia</em> 1 sp. + 1 sp. of uncertain identification</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Isoberlinia</em> 1 sp.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bombacaceae</strong></td>
<td><em>Bombacaceae</em></td>
<td></td>
</tr>
<tr>
<td><em>Adansonia</em> 1 sp.</td>
<td><em>Malvaceae</em></td>
<td></td>
</tr>
<tr>
<td><strong>Mimosaceae</strong></td>
<td><em>Acacia</em> 1 sp.</td>
<td></td>
</tr>
<tr>
<td><em>Prosopis</em> 1 sp.</td>
<td><em>Malvaceae</em></td>
<td></td>
</tr>
<tr>
<td><strong>Sapotaceae</strong></td>
<td><em>Sapotaceae</em></td>
<td></td>
</tr>
<tr>
<td><em>Malacantha</em> 1 sp.</td>
<td><em>Sapotaceae</em></td>
<td></td>
</tr>
<tr>
<td><em>Omphalocarpum</em> 1 sp.</td>
<td><em>Sapotaceae</em></td>
<td></td>
</tr>
<tr>
<td><strong>Sterculiaceae</strong></td>
<td><em>Sterculiaceae</em></td>
<td></td>
</tr>
<tr>
<td><em>Erythrophloeis</em> 1 sp.</td>
<td><em>Sterculiaceae</em></td>
<td></td>
</tr>
<tr>
<td><strong>Polygalaceae</strong></td>
<td><em>Polygalaceae</em></td>
<td></td>
</tr>
<tr>
<td><em>Securidaca</em> 1 sp.</td>
<td><em>Polygalaceae</em></td>
<td></td>
</tr>
<tr>
<td><strong>Flacourtiaaceae</strong></td>
<td><em>Polygalaceae</em></td>
<td></td>
</tr>
<tr>
<td><em>Flacourtia</em> 1 sp.</td>
<td><em>Polygalaceae</em></td>
<td></td>
</tr>
<tr>
<td><strong>Apocynaceae</strong></td>
<td><em>Apocynaceae</em></td>
<td></td>
</tr>
<tr>
<td><em>Conophyrynchus</em> 1 sp. + 1 sp. of uncertain identification</td>
<td><em>Apocynaceae</em></td>
<td></td>
</tr>
<tr>
<td><strong>Palmae</strong></td>
<td><em>Palmae</em></td>
<td></td>
</tr>
<tr>
<td><em>Raphia</em> at least 1 sp. of uncertain identity</td>
<td><em>Palmae</em></td>
<td></td>
</tr>
</tbody>
</table>

Main Sources: Dalziel, 1937; Lebrun and Boutique, 1948; Burtt-Davy and Hutchinson, 1923; Brigham, 1911; Bühler, 1940; Kennedy, 1934; de La Bâthie, 1952.
## TABLE 2
Taxonomic Relationships of Members of Genus *Ficus* Used for Bark Cloth in Africa

<table>
<thead>
<tr>
<th>Subgenera</th>
<th>Ficus</th>
<th>Sycidium</th>
<th>Sycomorus</th>
<th>Urostigma</th>
<th>Pharmacosycea</th>
</tr>
</thead>
<tbody>
<tr>
<td>African</td>
<td>Africa, Asia, Australia, Oceania</td>
<td>Africa, Asia, Madagascar, Asia, Australia, Oceania</td>
<td>New Guinea</td>
<td>Australia, America</td>
<td>Asia, Oceania, America</td>
</tr>
<tr>
<td>Sections</td>
<td>Ficus</td>
<td>Sycidium</td>
<td>Sycomorus</td>
<td>Urostigma</td>
<td></td>
</tr>
<tr>
<td>Mediter-</td>
<td>Africa</td>
<td>Africa</td>
<td>Africa,</td>
<td>Africa,</td>
<td>Africa,</td>
</tr>
<tr>
<td>ranean,</td>
<td>Asia,</td>
<td>Madagascar,</td>
<td>Asia,</td>
<td>Madagascar,</td>
<td>Madagascar,</td>
</tr>
<tr>
<td>Asia,</td>
<td>Australia,</td>
<td>Oceania</td>
<td>Australia,</td>
<td>Comores,</td>
<td>Oceania,</td>
</tr>
<tr>
<td>Indonesia</td>
<td>New Guinea</td>
<td>Asia,</td>
<td>New Guinea</td>
<td>Mascarenes,</td>
<td>Indonesia,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>car, Asia,</td>
<td></td>
<td>Sokotra,</td>
<td>Asia,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Australia,</td>
<td></td>
<td></td>
<td>Oceania,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>America</td>
</tr>
<tr>
<td>Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subgroup</td>
<td>Fasciculatae</td>
<td>Axillares</td>
<td>Stipulareas</td>
<td>Caduccae</td>
<td></td>
</tr>
<tr>
<td>No. of sp. in Africa</td>
<td>1</td>
<td>10</td>
<td>13</td>
<td>12</td>
<td>29</td>
</tr>
<tr>
<td>No. of sp. in Africa used for bark cloth</td>
<td>1</td>
<td>0</td>
<td>3 + 1 possible</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

Main Sources: Corner, 1958; Hutchinson and Rendle, 1917; Hutchinson and Dalziel, 1958; Lebrun and Boutique, 1948.
### TABLE 3
**Taxonomic Relationships of Members of Genus Ficus Used for Bark Cloth in Asia and Oceania**

<table>
<thead>
<tr>
<th>Sub-genera</th>
<th>Ficus</th>
<th>Sycomorus</th>
<th>Sycomopsis</th>
<th>Adenosperma</th>
<th>Synoeia</th>
<th>Urostigma</th>
<th>Pharmacosycea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>Africa, Asia,</td>
<td>Africa, Asia,</td>
<td>Eastern Asia,</td>
<td>Asia, Oceania</td>
<td>Asia, Oceania</td>
<td>Africa, Asia,</td>
<td>Mainly Africa</td>
</tr>
<tr>
<td>Mediterranean</td>
<td>Australia, Oceania</td>
<td>Madagas-</td>
<td>Indonesia,</td>
<td>Australia,</td>
<td>Oceania</td>
<td>Asia, America</td>
<td>America but</td>
</tr>
<tr>
<td>Asia,</td>
<td></td>
<td>car, Asia,</td>
<td>Oceania,</td>
<td>Australia,</td>
<td></td>
<td></td>
<td>also Oceania,</td>
</tr>
<tr>
<td>Indonesia</td>
<td></td>
<td>New Guinea</td>
<td></td>
<td>Oceanstia</td>
<td></td>
<td></td>
<td>Australia,</td>
</tr>
<tr>
<td>Oceania</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>East Asia,</td>
</tr>
<tr>
<td>Sections</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Southeast Asia,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>and South Asia.</td>
</tr>
<tr>
<td>No. of species</td>
<td>119</td>
<td>90</td>
<td>9</td>
<td>65</td>
<td>18</td>
<td>19</td>
<td>107</td>
</tr>
<tr>
<td>in Asia and</td>
<td>(2)</td>
<td>(15)</td>
<td>(0)</td>
<td>(3)</td>
<td>(1)</td>
<td>(0)</td>
<td>(7)</td>
</tr>
<tr>
<td>Oceania</td>
<td>(Poly-</td>
<td>(0)</td>
<td>(3)</td>
<td>(1)</td>
<td>(0)</td>
<td>(0)</td>
<td>(3)</td>
</tr>
<tr>
<td>(Polynesia</td>
<td></td>
<td>(3)</td>
<td></td>
<td>(1)</td>
<td>(0)</td>
<td></td>
<td>(2)</td>
</tr>
<tr>
<td>species)</td>
<td>(Poly-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>nesian species)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of species</td>
<td>0</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>in Asia and</td>
<td>(1)</td>
<td>(0)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2)</td>
</tr>
<tr>
<td>Oceania used for</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bark cloth</td>
<td>(Poly-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Polynesia</td>
<td>nesian species)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Main Sources: Corner, 1958; Brigham, 1911; Kennedy, 1934.
the Cape Verde Islands and to Yemen, while the fourth, Ficus sycomorus, the one for which use in Africa is uncertain, is discussed below. An examination of these tables points out another disparity between Africa and the Asia-Oceania area in the source plants. The Africans concentrated on using fig species much more than other peoples. In Africa approximately one-sixth of the fig species were used for obtaining bark and about fifty-five percent of the source plants were fig trees. In Asia and Oceania only about two percent of the fig species were used (about six percent in Polynesia) and one-third of the source plants were fig trees (about one-fourth in Polynesia).

Third, this African concentration in source plants carries over into the cultivated sources. Overwhelmingly in Africa the cultivated sources are fig trees which is not the case outside of Africa.

Of the fifty-seven species which have been positively identified as sources in Africa and Madagascar, all are confined in their distribution to Africa, Madagascar and adjacent islands, except Adansonia digitata which was carried to India during the days of Muslim rule and the one fig from section Sycomorus mentioned above. One species of those restricted to Africa, Antiaris africana
has sometimes been misidentified as _Antiaris toxicarxia_, an Asian species which is used in Southeast Asia as a source of bark cloth. Of the seven species from Africa and Madagascar which could not definitely be determined to be source plants with certainty, two species might indicate links with the outside. The first species is _Ficus sycomorus_ which is found in the Middle East and throughout Africa. There is only one report by name of its use as a source from subsaharan Africa (Gaud, 1911, p. 217) and that report is suspect. However, according to Bühler, it was a source of bark cloth in the past (1940, p. 1173), and it also happens to be the fig that was sacred to Hathor in ancient Egyptian beliefs (Philpot, 1897, p. 9). The second species really refers to some reports from Madagascar, East Africa and Central Africa of a species of _Hibiscus_ being used. This _Hibiscus_ species might have been _H. tiliaceus_ which was reported from the same areas as having been used to make rope and was used for bark cloth in Indonesia, Polynesia, and the Americas (Heyerdahl, 1953, p. 484).

With the exception of _Ficus prolixus_ and one other fig of uncertain identity in Polynesia (Brigham, 1911, pp. 8 and 140, and Condit, 1969, p. 257), _Ficus religiosa_ in India (Strabo, XV, 1:60 and Condit, 1969, p. 141) and
Ficus sycomorus in Egypt, it appears, from the literature that this author has seen, that the fig trees which have been utilized outside of subsaharan Africa for bark cloth are all uncultivated. Broussonetia and sometimes Artocarpus species are cultivated instead. The latter two figs have religious associations and may owe their cultivation to that instead of the fact that they can provide bark suitable for conversion to bark cloth. Because of this, because the other species utilized outside of Africa are not closely related to the species in use south of the Sahara, and because the dominant cultivated sources outside of Africa are not figs, the author thinks that the cultivation of fig trees as a source of raw material is an independent African development. This is partially supported by the process of collecting the bark by ringing being confined to the trees cultivated in Africa and Madagascar which was mentioned in the previous chapter.

Of the fig trees cultivated in Africa the most widely used was Ficus Thonningii Blume. F. Thonningii was used from the Ivory Coast to Uganda and southward through the Congo basin to Angola. It was also probably used in Tanzania and Zambia.

Antiaris africana is "common in park savannah and often found in towns, fetish groves, etc." (Dalziel, 1937,
Its range extends from Senegal to Kenya. It is often confused with *Chlorophora* species, particularly *Chlorophona excelsa* Benth & Hook, of the same family (Dalziel, 1937, p. 273, Eggeling and Dale, 1951, p. 234 and Aubreville, 1959, Vol., p. 58). *A. africana* is commonly referred to as "False iroko" while the common name for *C. excelsa* is *iroko*, which may appear as *roko* or *rokko*, etc., in non-British Colonies, ..." (Dalziel, 1937, p. 275). This common name suggests that there may also have been some confusion with *Ficus Thonningii*. When George Schweinfurth visited the Mangbetu and the Azande of the northern Congo Basin, he recorded that the fig tree cultivated as a source of bark for cloth was called "rokko" and because of this for a while the specimens of this species from this area were referred to as *Ficus Rokko* (Chevalier, 1912, p. 169). Among the Baule of the Ivory Coast, *A. africana* is called "bofoin" and *F. Thonningii*, "hahourou boufouain" (Chevalier, 1912, pp. 222-223).

Holas in 1949 stated that "bofouain" referred to *A. Wetwitchii* (correctly Welwitschii) and that *A. africana* and *F. Thonningii* were called by the Baule, respectively, "houfouain-tiendie" and "ale houfouain" (1949, p. 79).

Later, in 1968, he states that the best source is the fig known as "bofuin" (1968, p. 45). Whichever set of names
is used the same stem appears in all. Therefore, these names might suggest as well that at one time the two species might have been confused and the distinction between them was added later.

In light of the preceding paragraph, the distribution of the use of these three species suggests some interesting possibilities. The use of *A. africana* has been reported from Liberia, Ivory Coast, Ghana, the Fang tribe of Gabon and Cameroon, and from Uganda. In the gap in *A. africana* distribution between Ghana and Cameroon there is one report from Nigeria of "iroko" being used (Ardener, 1956, p. 82). This is probably either *C. excelsa* or *A. africana*. The use of *C. excelsa* is reported for three tribes whose tribal areas cover over half of the distance in the gap between the Fang and Uganda (Tisserant, 1950, p. 75). Taken together the reports of the use of *A. africana* and *C. excelsa* all come from an area which stretches from Liberia to Uganda. This area corresponds almost exactly with the northernmost part of the distribution of the use of *F. Thonningii* mentioned above. If all of these species have been confused with each other, it is probable that the use of two of them grew out of the use of the third.

Once cultivation of one species is undertaken, the
author feels that it is not likely that a new species will be added to the sources except as a cultivated plant and, therefore, the uncultivated plants are more likely to be survivals from the time before cultivation was undertaken. Since *F. Thonningii* is cultivated while the other two generally are not, this would suggest that its use developed from the use of one or both of the others. After this species was brought under cultivation, other figs might be domesticated at a later time.

Exactly how cultivation came about is open to conjecture, but the following is a possibility. As long as men led a nomadic existence such as that of hunters and gatherers, domestication was not feasible. Carl Sauer (1969, pp. 23-24) proposes that fishing villages were relatively stable settlements which would allow the development of cultivation. The numerous rivers and lakes from West Africa to Uganda would provide many sites for the establishment of such villages. Once the villages themselves are established, permanent shelters or permanent means of protecting the inhabitants from predators or other men would evolve. One such means of protection would be a rudimentary wall in which poles were stuck in the ground. Such a wall could be part of a hut or part of a stockade. In the case of fig trees at least such poles
would often sprout. Thus, the idea of planting poles from fig trees in order to grow other trees may have derived from observing their sprouting while part of a wall.

The above idea is a speculation but it is interesting to note that the method of planting the source plants is by poles stuck in the ground, the only exception being the planting of roots in parts of Polynesia (Nauman, 1940a, p. 1181). In addition, the sprouting of bark cloth fig trees from poles in stockades has been noted by V. L. Cameron in Western Tanzania (1969, p. 150) and by H. Meyer in Burundi (1916, p. 35).

One of the misconceptions about bark cloth which appears to be fairly common is that bark cloth making was restricted to the rain-forests or to the rain-forests and the forest-savanna mosaic areas. A glance at the map of bark cloth use presented on page 32 and a glance at a vegetation map for Africa shows that this is far from the truth. Although most of the species utilized are better adapted to the forest than to the grassland or scrubland, some can be found in more than one vegetative formation and several are adapted to drier areas and do not appear in forest situations. The baobab, *Adansonia digitata*, is a tree which does well in drier areas. Appropriately its areas of usage are scattered around the periphery of the
core area of bark cloth production. *Brachystegia* is an African genus of fifty-four species of which only nine occur north of the Equator.

The species are mainly restricted in distribution to the dry Savannah Forest of the Great Central Plateau; only a few (possibly ten) are found in the coastal rain-forest area below 600 feet elevation. . . . Of the 54 species known 34 are endemic in a single State, 13 in two States, and 3 in three States, leaving only four species . . . widely distributed. (Burtt Davy and Hutchinson, 1923, p. 130).

Three of these four widely distributed species are used for making bark cloth.
CHAPTER VI

TOOLS: PAST AND PRESENT

Can possible connections between regions be based on similarities in the tools? Modern specimens from various places in Africa, Indonesia, and Oceania are numerous. Many are in museums or private collections and drawings or adequate descriptions of them have not been published. Yet, there have been enough published descriptions that some pattern can be seen. Archaeological examples of such tools are few in number, but they still are worthy of some consideration.

Since bark cloth is a relatively soft organic substance, it decomposes fairly rapidly under warm moist conditions. It is only natural, therefore, that there are few archaeological records of it. Most of the artifacts pertaining to this art are beaters or parts of beaters. Of these all but a few are of stone. Two are of bone, four are of ivory (Lanning, 1959, pp. 80-81) and two are of wood (Buck, 1966, p. 161). (See Figs. 41-44, pp. 127-128 and Figs. 14-16, p. 118). Based on recent reports of the materials used for hammers, it is very likely
that stone was not the most common material used in former ages. It is just the least perishable. In recent times wood has been the dominant material and was probably the dominant material in the past as well. Ivory, horn, and bone have also been utilized. There are even specimens from Celebes with a sea shell for a head (Fig. 26, p. 122) and among some Zambian tribes iron was sometimes used (Fig. 37, p. 125), (Doke, 1931, p. 121 and Clark, 1971).

In addition to the probability that most of the former beaters have disintegrated through decomposition, it must be remembered that it is possible that beaters will be uncovered in the future from new areas.

An interesting possibility is that some beaters have been uncovered but have gone unrecognized as to what they are. In a survey of West African archaeological discoveries, Oliver Davies in 1967 wrote the following at the end of his section on bark cloth beaters.

Postles with a pecked surface have been found northwest of Bamako at Djiribougou, Bete and Nioro. In this region of dry savannah one would not expect bark cloth. There is a stone beater with marks of percussion, not on the end but on a convex face, from Kouga on the middle Niger. Again its purpose cannot be determined (Davies, 1967, p. 203).

Evidently Davies assumes that bark cloth is restricted to the forest or savanna-forest mosaic areas. It was pointed
out that this is far from the case. All of the places he mentions fall within the area of probable use based on the distribution of the source plants and the actual reports of use. He did not illustrate these finds and his footnotes evidently refer to museum specimens. However, a comparison with the description of the other hammers would indicate that they belong to the same basic type as the overwhelming majority of bark cloth beaters recovered. The description of the other specimen seems to indicate that it would fall into a different basic type which as an artifact is rare but is predominant among the modern implements of West Africa and northwest Central Africa.

This brings up the style of the tools. As a first breakdown, the available specimens can be divided into two basic types. The older is probably what could be called the "club type" (Figs. 41-79, pp. 127-137). There are several variations, but each is essentially based on a stick as a simple extension of the arm. More than likely the first beaters were simply sticks or maybe a horn or tusk held in the manner shown in the illustration (Fig. 3).

Since most of the club type beaters are fashioned out of perishable materials, it is only reasonable to assume that this was the case in former times. Therefore,
Figure 3: Method of holding a club type instrument.

Figure 4: Method of holding a hand axe or stone pounder.
it is not surprising that they are almost non-existent in the archaeological record. In addition to the possible find from the middle Niger valley mentioned by Davies above, there are some bone specimens from Mubende District, Uganda, which date from about 1500 A.D. (Lanning, 1959, p. 80 and Cole, 1963, pp. 317 and 319) and two wooden specimens of about the same age from New Zealand (Buck, 1966, pp. 161-162). It should be noted that the Egyptians used a beater of this basic type for beating flax (Wilkinson, 1878, V. 2, p. 173). From this we might assume that they used a similar beater for making bark cloth and paper.

Alternately, or concurrently, the earliest beaters may have been blunt stones held similarly to a hand axe (Fig. 4), the "hammer type". There is a recent record from the Mangbetu tribe of an unhafted hammer being held by hand (Bequaert, 1947, p. 252). This type developed to the point where almost all the modern specimens are hafted and at least some of the artifacts indicate that they were hafted. The modern hammer heads are mainly of hardwood or ivory. Wood is not very resistant to decomposition, and, therefore, although we can surmise that this was a more common material than stone for hammer heads in the past, we have no records of such use. Ivory
resists decomposition better, and four such specimens have been uncovered from the East Africa-northern Congo Basin concentration. Stone comprises the material used for the rest of the heads in this concentration, in the Western Sudan concentration, in the Malay Peninsula concentration, and in the British Honduras (Belize) and Mexican finds.

The British Honduras (Belize) and Mexican finds are almost in a class by themselves. They consist of flat stones which had grooves on their thin sides for hafting (Figs. 23-25, p. 121). The only similar beater heads which the writer found in the literature were wooden ones of a recent date from Central Celebes (Figs. 27-28, p. 122).

The only artifact hammer heads (Figs. 5-22, pp. 115-120), even the ivory ones, are elongated, usually of a roughly cylindrical or conical shape. A few have a roughly rectangular or triangular cross-section. Does this prove a link between Africa and Malaya? This author does not think so. It certainly does not contradict one, but, on the other hand, these implements are of such a rudimentary shape and are so simple a tool that it seems possible that they could have developed in more than one place. The most sophisticated aspect of the heads is the scoring on the beating face. While this is usually a
series of crisscross lines in a rectangular pattern, some locales have exhibited variations, as in the diamond pattern in Malaya (Figs. 18-19, p. 119) and the single set of parallel lines on a specimen from Zemio, Central African Republic (Fig. 11, p. 117).

Modern examples of the hammer type of beater might show a possible connection better than the ancient one. Generally speaking, the modern specimens of this type, and all the ancient specimens which were hafted, were hafted so that the handle and the binding material went around the outside of the hammer head. Some modern examples with wooden heads have the shaft penetrating the hammer head. This subtype has been noted among the Lamba, Lala, and Tonga tribes of Zambia, among the Tanala and possibly the Betsileo of Madagascar, and from Sipora Island west of Sumatra (Figs. 29-30, p. 123 and Figs. 35-36, p. 125). All of these places lie along a possible diffusion route from the Malaysian area into sub-Saharan Africa. Before accepting this as possible evidence, let us look at these specimens again. The Sipora specimen and the Tanala specimen (Figs. 29-30, p. 123) are definitely cylindrical in shape. They may be scored on both ends but no mention is made of this. The Tonga specimen (Fig. 35, p. 125) is rectangular in cross-section and is scored on both ends.
while the Lamba and Lala type (Fig. 36, p. 125) is roughly conical in shape with one end scored. Obviously, then, these have only the method of hafting in common. It is possible that since this method appears to occur only in a few recent specimens it might have been acquired rather recently in imitation of the European manner of hafting a hammer or an axe. In addition, an examination of the method of hafting for axes and other tools would have to be made in order to be relatively certain of any conclusions.

Club type beaters in recent times predominate in Indonesia and Oceania. In this area they frequently have a cross-sectional shape other than round. Some are square, some triangular, some flattened. Each side of the beater is then carved with a different pattern. One side is then used for the initial beating and other sides for final beatings which produce patterns like watermarks (Kennedy, 1934, pp. 239-241).

In Africa the club type of beater occurs in roughly the same zone as the archaeological finds (even though most of the finds are of the hammer type), and the same zone as the use of Antiaris africana, Chlorophora excelsa, and Ficus Thonningii. This area extends from the vicinity of Lake Victoria to the Ivory Coast. Within this larger
In the central part of the northern Congo Basin, the simple form of the beater has prevailed. This is not the case with the carving. Instead of simple longitudinal grooves or lateral-ring grooves on one end, there are sometimes elaborate patterns cut into the side of the ivory (Fig. 68, p. 134).

Among the Fang, among the tribes of the Ivory Coast and Ghana, and among the interlacustrine Bantu, the beating end is cylindrical or semi-cylindrical and has a larger circumference than the handle, but in other respects they differ from each other. Those of the Fang have simple longitudinal grooves closely spaced around the beating surface (Figs. 69 and 71, p. 135). The only places in the world which this author found that had longitudinal grooving on the beaters were in circum-Pacific locations (Figs. 43-53, pp. 128-130). Yet this is too simple a pattern not to be developed independently. Among the tribes of the Ivory Coast and Ghana, the beating end of the bat has a flattened face which is laterally grooved. Only this flattened side of the head is grooved (Figs. 72-75, p. 136). Among the interlacustrine Bantu the cylindrical head is encircled by a series of lateral
grooves. The number of grooves and the depth of the cut depend on whether the beater is designed for the coarse initial work or the finer work of the final pounding (Figs. 76-79, p. 137).

To return to the question which opened this chapter, the answer appears to be that no definite links can be shown between subsaharan Africa and either Southeast Asia or Egypt. Except for what this author, and others (Heyerdahl, 1953, p. 66), would consider a strong similarity between the Middle American artifacts and the modern day hammers from the Celebes, no connections can be shown between one continent and another. It is true that archaeological tools from Malaya and those from Africa are very similar, but as was pointed out above, the hammer type and the club type are among the simplest types of tools. Within Africa links can be made between different tribes based on the development of beater types, but external connections based on tools could not be trusted. The connections may be there, but the evidence cannot be considered conclusive.
CHAPTER VII

CONCLUSION

Hopefully a choice can now be made as to the origin of bark cloth making in subsaharan Africa in light of the information accumulated for this study and summarized in Chapters three through six. Three sources have been suggested: southern Asian origin with penetration via the East African coast either near Zanzibar or opposite Madagascar; Egyptian or Near Eastern origin, with penetration via Egypt; and indigenous origin.

It was found that the distribution of the process and various types of present-day tools do not strongly support any of the three suggested sources, although the developments in the club type of beater in Africa are generally distinct. Developments in the process do not close the doors against diffusion, for while the layering technique has not been reported for subsaharan Africa, and the African method of raising and obtaining successive harvests from the same plant appears to be limited to Africa, these developments could be subsequent to
diffusion of the initial techniques.

This leaves just the artifacts and the source plants as possible means of eliminating one or more of the possible theories. As pointed out previously, the known distribution of the artifacts is far from complete but it appears to be incompatible with diffusion into Africa via the East Coast and does not give strong support to diffusion via Egypt.

The results of the examination of the source plants lead to the following tentative conclusions. Originally the process was spread over most of Africa by nomadic peoples, probably hunters and gatherers. Cultivation of the source plant developed later, and this development occurred independently in subsaharan Africa. Domestication probably occurred first in a band stretching from Liberia to Uganda with *Ficus Thonningii* being the first cultivated species. The idea of cultivation spread south through the East African Highlands. Whether cultivation spread into the central and southern Congo Basin from the north or the east is uncertain. Probably cultivation of the source plants was carried to Madagascar by Bantu peoples, as several fig trees are cultivated there by the Bantu and ringing of the trees is practiced there.
If the process of making bark cloth originated outside of subsaharan Africa and was then brought in, it was transmitted to Africa on the gathering level and not with an associated cultigen. It is not likely that the process entered through Egypt, because, if it had, the use of *Ficus sycomorus* should be fairly common in subsaharan Africa since it is so widely distributed there. Thus, it seems that either the origin of the process in Africa is indigenous south of the Sahara or its external origin is so old and on such a rudimentary level that it left insufficient evidence to substantiate it.

From the preceding chapters certain findings can be abstracted. Some of these findings are on a firm foundation while others are tentative conclusions based on the present availability of knowledge.

One fact which will surely stand is that the actual area of usage and the potential area of usage are considerably greater than has been generally supposed. A second statement which probably will stand is that the development of the process followed a distinctly different line in subsaharan Africa from that followed outside of Africa. A third point which will probably stand is that the cultivation of source plants and the ringing of trees seem to be indigenous developments. The evidence is
weaker for the proposal that cultivation of source plants started with *Ficus Thonningii* somewhere in the region extending from Liberia to Uganda. From this core of domestication the idea of cultivating the source tree progressed southward.

As for the main topic of this paper, the determination of the region of origin of the process in Africa, the conclusion is the weakest of all the findings. Since the origin of the process preceded cultivation of the source plants, it is difficult to say exactly where the process originated. One cannot be positive that the process did not originate outside of Africa. On the other hand, there are strong indications of African origin: since the process is relatively simple, since there is no strong evidence suggestive of external origin, and since the distributions of archaeological finds, the development of club type beaters, source plants, ringing, and layering all suggest separate origins, it might lead one to believe that the process originated independently in Africa.
LIST OF REFERENCES

Published Sources


Fernandes, Valentin. *Description de la Côte Occidentale d'Afrique (Sénégal au Cap de Monte, Archipeis)*. Bissau, Portuguese Guinea: Centro de Estudos da Guiné Portuguesa, 1951. Originally written between 1506 and 1510.


Gouldsbury, Cullen and Hubert Sheane. The Great Plateau of Northern Rhodesia. London: Edward Arnold, 1911.


_____. "Variations and Mutations in Invention." Man, Vol. 26, No. 101, 1926b, pp. 154-158.


Holas, Bohumil. "Vetements d'Ecorce (Côte d'Ivoire)." *Notes Africaines*, No. 43, 1949, pp. 77-80.


_——_. "The Use of Bark Cloth." *Ciba Review*, No. 33, 1940b, pp. 1193-1197.


---


---


---


Thompson, A. D. F. "Bark-Cloth Making in Buganda." *Uganda Journal,* Vol. 1, 1934a, pp. 17-21. This and the following article were signed with just initials but Lanning, 1959, refers to the author of this article as Thompson.


UNPUBLISHED SOURCES

Anonymous. Notes from discussions with various Ugandans whose names were not recorded, 1964-1966.


APPENDIX

Illustrations of Bark Cloth Hammers
Hammer Type Beaters As Artifacts

Figure 5: Stone beater from Beyla, Guinée. After Hubert, 1925.

Figure 6: Stone beater from Fenaria, Guinée. Length 12 centimeters. Long diameter 49 millimeters. Short diameter 42 millimeters. After Lutten, 1944.

Figure 7: Stone beater from Fenaria, Guinée. Length 16 centimeters. After Mauny, 1954.
Hammer Type Beaters As Artifacts

Figure 8: Stone beater from Uele Valley, Zaire Republic. Length 50 millimeters. Long diameter 48 millimeters. Short diameter 42 millimeters. After Van Noten, 1968.


Figure 10: Stone beater from Peté Lalia, Guinée. Dimensions: 96 millimeters by 43 millimeters by 30 millimeters. After Bequaert, 1947, which is based on Hue, 1913.
Hammer Type Beaters As Artifacts

Figure 11: Stone beater of Uelien Age (first millennium B.C.) from Zemio, Central African Republic. After Bequaert, circa 1950.

Figure 12: Stone beater of Uelien Age (first millennium B.C.) from Zemio, Central African Republic. After Bequaert, circa 1950.

Figure 13: Stone beater of Uelien Age (first millennium B.C.) from Zemio, Central African Republic. After Bequaert, circa 1950.
Hammer Type Beaters As Artifacts

Figure 14: Ivory beater from Njoro River Cave, Kenya. Length 18 centimeters. After Leakey and Leakey, 1950.

Figure 15: Ivory beater from Njoro River Cave, Kenya. Length 15 centimeters. After Leakey and Leakey, 1950.

Figure 16: Ivory beater from Yebu, Uele Valley, Zaire Republic. Length 154 millimeters. Long diameter 53 millimeters. Short diameter 50 millimeters. After Bequaert, 1947.
Hammer Type Beaters As Artifacts

Figure 17: "Ancient" stone beater from N. Pahang, Malay Peninsula. After Evans, 1930.

Figure 18: "Ancient" stone beater from Ampang, Selangor, Malay Peninsula. After Evans, 1930.

Figure 19: Ancient (?) stone beater from Sungai Galas near Gua Musang, Kelantan, Malay Peninsula. Length approximately 75 millimeters. Long diameter about 65 millimeters. Short diameter about 50 millimeters. After Sieveking, 1956.
Hammer Type Beaters As Artifacts

Figure 20

Figure 21

Figure 22

Stone beaters from Giua Cha, Kelantan, Malay Peninsula. The lower one is broken. After Sieveking, 1956.
Hammer Type Beaters As Artifacts

Figure 23

Figure 24

Figure 25

Stone beater heads with grooves on three sides for hafting from Lubaantun, British Honduras. After Joyce, et al., 1927. Similar stones have been found in Mexico.
Hammer Type Beaters From "Modern" Times

Figure 26: Beater with shell head and rattan handle from Manus, Great Admiralty Island, Bismark Archipelago (Melanesian). After Naumann, 1940a.

Figure 27: Beater with stone head and rattan handle from Celebes (Toradja Tribe). After Kennedy, 1934, which is based on Adriani and Kruijt, 1901.

Figure 28: Stone beater head with notches at corners for hafting from Celebes (Toradja Tribe). After Kennedy, 1934, which is based on Adriani and Kruijt, 1901.
Hammer Type Beaters From "Modern" Times

Figure 29: Cone shaped wooden beater from Sipora, Mentawi Islands (Indonesia). After Evans, 1930.

Figure 30: Cylindrical wooden beater of the Tanala Tribe, Madagascar. After Linton, 1933.

Figure 31: Semi-conical wooden beater of the Chopi Tribe, Mozambique. After Junod, 1936.
Hammer Type Beaters From "Modern" Times

**Figure 32**: Semi-conical wooden beater from "British Central Africa" (Zambia and Malawi). After Johnston, 1897.

**Figure 33**: Conical wooden beater of the Lamba Tribe, Zambia. Similar beaters with rhinoceros horn for the head were also reported as well as a metal headed one of slightly different design. After Doke, 1931.

**Figure 34**: Conical wooden bark cloth (?) hammer of the Luba Tribe, Zaire Republic. The handle is 25 centimeters long and the head is 10 centimeters long. After Colle, 1913.
Hammer Type Beaters From "Modern" Times

Figure 35: Wooden beater of the type used by the Tonga Tribe, Zambia and Rhodesia. Both ends scored. After personal communication from J. Desmond Clark, 1971.

Figure 36: Wooden beater of the type used by the Lamba and Lala Tribes, Zambia and Zaire Republic. One end scored. After personal communication from J. Desmond Clark, 1971.

Figure 37: Beater with iron head hafted in a stick with a split end. A type used by the Bemba and Bisa Tribes, Zambia. After personal communication from J. Desmond Clark, 1971.
Hammer Type Beaters From "Modern" Times

Figure 38: Semi-conical beater from Newala, Southeast Tanzania. (Scoring hypothetical). After Weule, 1909.

Figure 39: Semi-conical "wooden" beater, 42 centimeters long, of the Rundi Tribe, Burundi. After Meyer, 1916.

Figure 40: Conical ivory-headed beater of the Mbuti Pygmy Tribe, Epuelu District, Central Ituri, Zaire Republic. A similar beater with wooden head was also shown. Three groove patterns for the heads are shown. After Turnbull, 1965.
Club Type Beaters As Artifacts

**Figure 41:** Bone beater grooved on one side only. From Munsa Earthworks, Mubende District, Uganda. After Lanning, 1959.

**Figure 42:** Bone beater grooved laterally on one side and with rectangular cross-hatching on the other. From Munsa Earthworks, Mubende District, Uganda. Length approximately 300 millimeters. Width about 115 millimeters. After Lanning, 1959.
Club Type Beaters As Artifacts

Figure 43

Figure 44

Wooden beaters, with four-sided beating surfaces, from Whangarei Harbour, North Island, New Zealand. After Buck, 1966.
Club Type Beaters From "Modern" Times

Figure 45: Wooden beater from Mexico. After Heyerdahl, 1953.

Figure 46: Wooden beater from Tahiti. After Ellis, 1967.

Figure 47: Wooden beater from Celebes. After Heyerdahl, 1953.
Club Type Beaters From "Modern" Times

Figure 48  
Figure 49

Figure 50  
Figure 51

Wooden beaters of square, rectangular, oval and triangular cross-section with longitudinal grooving from Fiji Islands. After description and minute one in a photograph in Roth, 1934.

Figure 52: Wooden beater from Fiji Islands. Possibly square in cross-section. After Cranstone, 1961.

Figure 53: Wooden beater from Loyalty Islands. After Cranstone, 1961.
Club Type Beaters From "Modern" Times

**Figure 54**
Wooden beaters from New Caledonia.
After Naumann, 1940a.

**Figure 55**

**Figure 56**

**Figure 57**: Wooden beater from Papua, New Guinea. After Cranstone, 1961.

**Figure 58**: Unscored wooden beater from Celebes. After Kennedy, 1934, which is based on Adriani and Kruijt, 1901.
Club Type Beaters From "Modern" Times

Figure 59: Wooden, four-sided beater from Borneo. After Kennedy, 1934, which is based on Adriani and Kruijt, 1901.

Figure 60: Wooden, two-sided beater from Borneo. After Kennedy, 1934, which is based on Adriani and Kruijt, 1901.

Figure 61: Wooden beater from Sumatra. After Kennedy, 1934, which is based on Adriani and Kruijt, 1901.

Figure 62: Wooden beater from Garo Tribe, Assam. After Walker, 1927.
Club Type Beaters From "Modern" Times

Figure 63: Wooden beater from Rundi Tribe, Burundi. Length approximately 25 centimeters. After Czekanowski, 1917.

Figure 64: Wooden beater from Bete Tribe, Ivory Coast. After Holas, 1949.

Figure 65: Wooden beater from Bete Tribe, Ivory Coast. After Holas, 1949.
Club Type Beaters From "Modern" Times

Figure 66: Ivory beater from Amba Tribe, Uganda. After Stuhlmann, 1894.

Figure 67: Ivory beater from Bwaka Tribe, Congo Republic. After Poutrin, 1910.

Figure 68: Ivory beater from Baya Tribe, Cameroon, Congo and Central African Republic. After Passarge, 1895.
Club Type Beaters From "Modern" Times

Figure 69: Wooden beater from Fang Tribe, Cameroon, Equatorial Guinea, and Gabon. After Tessman, 1913.

Figure 70: Beater made from elephant's rib from Fang Tribe. After Tessmann, 1913.

Figure 71: Ivory beater from Fang Tribe. After Tessmann, 1913.
Club Type Beaters From "Modern" Times


Figure 72


Figure 73


Figure 74


Figure 75
Club Type Beaters From "Modern" Times

Figure 76: Wooden beater from Rundi Tribe, Burundi. Length 32 centimeters. After Meyer, 1916.

Figure 77
Two sizes of wooden beaters from Bukoba District, Tanzania. The smaller one has finer ridges for finish work. After Kimwani, 1951.

Figure 78

Figure 79: Wooden beater from Ganda Tribe, Uganda. After Stuhlmann, 1894.