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**Reindeer Hair Embroidery Among the Saint Lawrence Island Alaskan Yuit: Roles of
Museums and Peoples of the Russian Far East**

by

Michelle R. Zerwig



A thesis submitted to the Faculty of Graduate Studies and Research in partial
fulfillment of the requirements for the degree of Masters of Science
in Clothing and Textiles

Department of Human Ecology

Edmonton, Alberta
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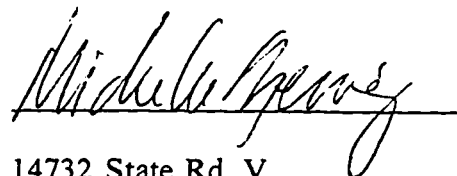
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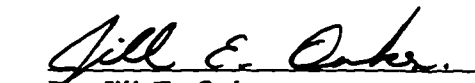
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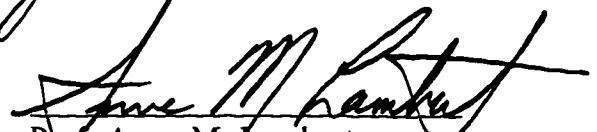
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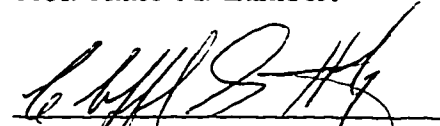
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Abstract

This study focuses on hair embroidery, a decorative application of hair to surfaces, made by the Yuit of St. Lawrence Island. Factors influencing this technique include trade relations with Western Alaska and the Russian Far East, reindeer herding, previous researchers on the island, cold war tensions, and general cultural changes. Indigenous hair embroidery knowledge is explored and supplemented with artifact attribute analysis and the analysis of artifact conservation. This ethnohistorical approach combines field research with museum artifact studies.

During the study, St. Lawrence Island women were interviewed concerning their past and current relationships with hair embroidery. A strong connection between St. Lawrence Island and the Russian Far East suggests cultural sharing of hair embroidery knowledge. Informant based research formed the basis for an accurate analysis of artifacts in the University of Alaska Museum and the Sheldon Jackson Museum. Issues concerning the conservation, documentation, and identification of museum artifacts were addressed.

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Table of Contents

Chapter I. Introduction	1
Rationale	2
Purpose & Objectives	3
Definitions	3
Limitations	4
Parameters	5
Chapter II. Ethnohistorical Methodology Review	6
Field Studies	7
Museum and Archival Studies	8
Chapter III. Research Methods	11
Field Research	11
Museum and Archival Research	11
Chapter IV. Literature and Findings	14
St. Lawrence Island	14
Geographic Review	14
Cultural Review	16
Factors Influencing Yuit Hair Embroidery	17
Trade Relations	18
Reindeer Herding	20
Early Researchers on St. Lawrence Island	25
Cold War Tensions	27
Cultural Transition	28
Hair Embroidery	30
Northern Embellishment Techniques	30
Russian Far East and Alaskan Hair Embroidery	32
Hair Sources	33
Types of Embroidered Artifact	33
Perceived Level of Embroidery Skill	34
Embroidery Designs and Motifs	35
Hair Embroidery Techniques	39
St. Lawrence Island Stitches	48
St. Lawrence Island Embroidery	50

Hair Embroidery Artifact Discussion	50
Technical Similarities	51
Use of Colour	53
Design Similarities	55
Combined Modes of Embellishment	57
European Influences	58
Artifact Uses	60
Factors Influencing Hair Embroidery Decisions	60
Role of Museums	62
Hair Identification	63
Conservation Aspects	66
Hair Structure	67
Destructive Forces	68
Preventive Measures	72
Museum Documentation of Hair Embroidery	73
Chapter V. Conclusions	75
Chapter VI. Research Recommendations	83
References	84
Appendices	94
Appendix A - Glossary of Terms	95
Appendix B - List of Museums	100
Appendix C - List of Archival Collections	105
Appendix D - Artifact Worksheets	107
Appendix E - Maps	148
Appendix F - Artifact Materials	150
Appendix G - Quillwork Conservation	151

List of Figures

<u>Figure 1.</u>	A map of the north Bering Sea (Beringian) region illustrating the location of St. Lawrence Island	15
<u>Figure 2.</u>	A map of St. Lawrence Island showing the location of Gambell and Savoonga	15
<u>Figure 3.</u>	Tongue and modified tongue motifs found throughout northern embellishment	36
<u>Figure 4.</u>	A Chukchi embroidery motif from c. 1930	37
<u>Figure 5.</u>	A Koryak embroidery motif from c. 1930	37
<u>Figure 6.</u>	Hair embroidery stitch techniques and their existence known to date .	40
<u>Figure 6a.</u>	Simple line variation	39
<u>Figure 6b.</u>	'Meander' stitch variation	39
<u>Figure 6c.</u>	Twisted hair variation	39
<u>Figure 6d.</u>	Wound hair around straight couching stitches	41
<u>Figure 6e.</u>	'Petal' variation	41
<u>Figure 6f.</u>	'Bud' stitch variation	41
<u>Figure 6g.</u>	Overlapping hair variation	42
<u>Figure 6h.</u>	The bristle, candlewicking, or tufting stitch variation	42
<u>Figure 6i.</u>	Crisscrossed hair variation	43
<u>Figure 6j.</u>	Coiling hair variation	43
<u>Figure 6k.</u>	Core border variation	44
<u>Figure 6l.</u>	Two twisted hairs applied onto a skin strip	44
<u>Figure 6m.</u>	Braided single hair forming a crisscross design	44
<u>Figure 6n.</u>	Single hair crisscrossed and centre stitched	45
<u>Figure 6o.</u>	Hair wound around a band with centre stitching to form a motif	45
<u>Figure 6p.</u>	Edge variation forming an inverted triangle	46
<u>Figure 6q.</u>	Edge variation with identical stitching on both sides	46
<u>Figure 6r.</u>	Circle variation with modified meander stitch	46
<u>Figure 6s.</u>	Diagonal hair stitched to form a V-shaped motif	47
<u>Figure 6t.</u>	Modified meander stitch with elongated curves	47
<u>Figure 6u.</u>	Variation representing a chevron motif	47
<u>Figure 6v.</u>	Linear variation with several hair secured to the base	47
<u>Figure 6w.</u>	Strip variation with hair looped with centre stitching	47
<u>Figure 7.</u>	Example of the crisscross stitch technique from St. Lawrence Island by Lucile Kaazaata c. 1973	49

<u>Figure 8.</u> Artifacts (UA 610.5917 & UA 610.M.5918) illustrate the appearance of hair embroidery on skin and textile surfaces	51
<u>Figure 9.</u> Artifacts (UA 67.98.133), an example of a pouch possibly of Aleut provenance embellished with dyed gut (?) strips with hair embroidery	55
<u>Figure 10.</u> Artifact (UA 64.21.139), an example of St. Lawrence Island Yuit use of colour in hair embroideries	56
<u>Figure 11.</u> Scale impressions to aid in hair identification of moose, caribou/reindeer, and porcupine quills	65
<u>Figure 12.</u> Illustration of the carpet beetle and its larva	70
<u>Figure 13.</u> Illustration of common clothes moth and its larva	71
<u>Figure E-1.</u> Map of Alaska and surrounding areas outlining the important cultural distinctions, place names, and bodies of water discussed in my thesis . . .	148
<u>Figure E-2.</u> Map of Far Eastern Russia and surrounding areas outlining the important cultural distinctions, place names, and bodies of water discussed in my thesis	149

List of Tables

Table 1. <u>Population fluctuation of the St. Lawrence Island reindeer herd</u>	23
Table 2. <u>Structural characteristics of quill and hair fibres</u>	64
Table B-1. <u>List of museums with known hair embroidery artifacts within their collections</u>	100
Table B-2. <u>List of museums without hair embroidery artifacts within their collections</u>	102
Table C-1. <u>Collections at the Archives, Alaska & Polar Regions Department, Elmer E. Rasmuson Library, University of Alaska regarding hair embroidery</u> . .	105
Table C-2. <u>Collections at the Archives, Alaska & Polar Regions Department, Elmer E. Rasmuson Library, University of Alaska without hair embroidery information</u>	106
Table C-3. <u>Collections at the Sheldon Jackson College Archives without hair embroidery information</u>	106
Table -1. <u>Distinguishing Ethnographic Artifact Materials</u>	150

Chapter I.

Introduction

Northern environments, by their nature, force their human inhabitants to employ stringent means for survival. The utilitarian aspect of clothing reflects a basic need to function outdoors in extreme sub-zero temperatures. But along with the utilitarian aspect of northern dress comes the nonessential but important theme of embellishment.

Embellishment of clothing in the north, as established in the literature, encompasses many diverse decorative techniques including hair embroidery. The embroidery involves application of animal hair onto a base substance. Hair embroiderers choose to embellish skin garments and utilitarian items including: quivers, bags, belts, gloves and footwear (Turner, 1976). Other non-skin items, such as birch bark and European textiles, are decorated with hair embroidery (Turner, 1976).

The term 'hair embroidery' may be misleading, suggesting that hair penetrates through the surface, whereas the hair is primarily applied onto a surface. Ivanov (1963) states that:

the word 'embroidery' does not apply to the majority of techniques that involve the use of reindeer hair or even machine-made thread, because these are not passed through the leather, but are laid over it by some method or other and fastened with tendinous thread (p. 21).

He suggests that hair embroidery stitches resemble appliqué work rather than embroidery.

Embroidery, as defined by Jerde (1992), involves "ornamental needlework" (p. 65). Similarly, Tubbs and Daniels (1991) define embroidery as a "decorative pattern superimposed on a fabric by machine or hand needlework" (p. 105). The embroidery definitions proposed by Jerde along with Tubbs and Daniels, indicate a nonspecific term regarding object ornamentation. 'Hair embroidery,' like 'quillwork,' denotes a general embellishment technique as opposed to a precise descriptive term. The confusion associated with the embroidery nomenclature may decrease as hair

embroidery has increased exposure within museum and cultural communities.

Rationale

My interest in Eskimoan culture and museum policy is a reflection of my curiosity regarding indigenous embellishment on material culture. Hair embroidery is an embellishment technique approaching extinction and requiring attention. Factors contributing to the lack of information regarding hair embroidery include: the rarity of specific studies, decline in its practice, improper museum documentation, and unsatisfactory environmental conditions within museums.

Turner (1976) provides a general overview of Siberian (including the Russian Far East) and North American hair embroidery. However, specific hair embroidery artifact and cultural studies are nonexistent. My study on Alaskan Yuit, combining field work with a museum artifact study, will provide a regionally specific study on hair embroidery.

All too often, embellishment techniques are forgotten when new decorative processes are developed or adopted. Hair Embroidery may exemplify such a transition. Black (1982) states that "The dazzling embroidery is a thing of the past. Even the memory of it is dim....But the art of embroidery simply is not there anymore" (p. 161). Although true for the Aleut, the focus of Black's research, my research is critical to determine if other indigenous peoples have retained the knowledge of hair embroidery.

Within museum collections, hair embroidery artifacts are often misclassified and housed in unsatisfactory conditions. Turner (1976) suggests that museums, particularly in North America, have misrepresented hair embroidery artifacts (p. 18). Museum documentation is often incorrect, classifying hair embroidery artifacts as quillwork or vegetable fibre. The misclassification of artifacts and the possibility of pest infestations within museums threaten the future of hair embroidery artifacts within storage. Hair embellishment is susceptible to insect infestations within museum collections. My study addresses the issues of museum documentation and storage conditions to provide a guideline for the treatment and storage of hair embroidery.

Purpose and Objectives

Available information regarding hair embroidery contains minimal reference to the Yuit in Alaska. The purpose of my study was to document the existence of St. Lawrence Island Yuit hair embroidery, and to analyze factors influencing its regional presence or absence. Furthermore, my purpose was to analyze the attributes of hair embroidery artifacts and to assess the condition of these artifacts within select museum collections.

My first project objective was to establish my awareness of hair embroidery as a form of material culture indigenous to the St. Lawrence Island Yuit. After establishing this awareness, I intended to authenticate hair embroidery within general Alaskan ethnographic material culture. My second research objective, therefore, was to produce a visual and textual reference to promote the knowledge of hair embroidery within Yuit communities. My third research objective was to examine a possible relationship between Far Eastern Russia and St. Lawrence Island concerning hair embroidery. My fourth objective was to provide a visual and textual document to enable museologists to identify hair embroidered artifacts within ethnographic collections. My fifth objective was to assess the issues regarding the preventive conservation of hair embroidery artifacts within museum collections.

Operational Definitions

I compiled this list of definitions to identify the context in which these terms were used in my study (for further definitions see Appendix A).

Beringian Region	composed of the area between Western Alaska and Northeastern Asia.
Conservation	"to study, record, retain, and restore the culturally significant qualities of the object with the least possible intervention" (Code of Ethics, 1989, p. 18).
Far Eastern Russia	the region east of the Kolyma River, specifically known as the Chukotka Peninsula (see also Siberia).

Hair Embroidery	hair embellishment on skin, gut or intestine, birchbark or textiles using an appliqué or couching stitch.
Preventive Conservation	"establish and maintain a high standard in conditions of storage, display, use and handling of a cultural property (Code of Ethics, 1989, p. 10).
Siberian Yupik	Language of the Yuit from St. Lawrence Island and Far Eastern Russia.
Yuit	"live in the coastal areas of southwestern and southern Alaska and in the delta formed by the rivers Yukon and Kuskokwim. These southern Yuit (also Yupik) include the groups of St. Lawrence Island and eastern Siberia" (Koek, 1984, p. 80).

Limitations

Limitations pertaining to this study are divided into cultural and institutional categories. My study was limited by the ability and willingness of embroiderers to relay information within the two communities of Gambell and Savoonga. The apparent absence of reindeer hair within the communities limited the ability of women to produce hair embroidery. Limited access to reindeer hair within Gambell impeded my ability to observe the embroidery process. Savoonga elders, participating in a ceremonial dance performance in the community of Shishmaref, were absent from the community limiting my ability to consult them for this study.

Institutionally, my study was limited by the fact that artifacts were scattered throughout North American and European museums; my study was limited to the artifacts in Alaskan museums. Another limiting feature includes the museum collectors' biases regarding what was collectable and aesthetically pleasing. Another limitation involved my ability to locate artifacts concealed through incomplete or inaccurate museum documentation. Several documentation records failed to specifically or correctly identify embellishment techniques causing complications in artifact location. Once located, there was insufficient evidence to suggest that artifacts represent the particular maker or culture, owing to accession or acquisition procedures and artifact survival. Ineffective museum practices regarding the conservation of

ethnographic artifacts also created limitations for my research. Animal hair, comprised of keratin, was susceptible to common pest infestations causing permanent damage. In instances where hair embroidery artifacts were exposed to museum pests, identifying the former embellishment technique was difficult.

Parameters

My research was limited specifically to hair embroidery excluding the use of silk, beads, and quills for decoration. It furthermore focussed on Yuit women embroiderers in Savoonga and Gambell on St. Lawrence Island. A list of museum collections which contain hair embroidery artifacts was compiled through contacting select museums within the United States, Canada, Russia, and Europe (see Appendix B). Library research and the Canadian Heritage Information Network (CHIN) on-line data base were utilized to supplement the list of museum collections with hair embroidery artifacts. I researched hair embroidery at the University of Alaska Museum (UA) and the Sheldon Jackson Museum (SJM). I visited the Alaska and Polar Regions Department Archives at the University of Alaska, Fairbanks and the Sheldon Jackson College Archives to gain background and supplementary information on hair embroidery (see Appendix C).

Chapter II.

Ethnohistorical Methodology Review

Ethnohistory has been described as "relating to the past of cultures and societies ... emphasizing the use of documentary and field materials and historiographic and anthropological approaches" (Ethnohistory, 1985, title page).

Trigger (1982) suggests that ethnohistorians require:

not only all the skills of a good conventional historian but also a sound knowledge of ethnology, if they are to be able to evaluate sources and interpret them with reasonable understanding of the perceptions and motivations of the native people involved (p. 9).

Simmons (1988) believes that ethnohistory connects the "historic record with the ethnographic present" (p. 10). He continues by saying:

I view ethnohistory as a form of cultural biography that draws upon as many kinds of testimony as possible--material culture, archaeology, visual sources, historical documents, native texts, folklore, even earlier ethnographies--over as long a time period as the sources allow (Simmons, 1988, p. 10).

Ewers (1961) believes that ethnohistory incorporates museum and library study with field study to create a collaborative model for indigenous research (p. 268). He developed an ethnohistorical model which demonstrates how the different approaches complement one another. Within his model, Ewers groups ethnology, folklore, language, and site exploration under the heading field studies. He then groups writings, maps and pictures, and artifacts under the heading library and museum studies (Ewers, 1961, p. 267). Fenton (1966) states that ethnohistorical research regardless of its origin (i.e. the field or museum) "exerts a feedback effect on the other [sic] resource areas" (p. 83).

Pannabecker (1990) suggests that the ethnohistorical methodology can be successfully applied to Clothing and Textiles research (p. 14). She states that ethnohistory is "based on the complementarity of methods" (Pannabecker, p. 17). Along with Pannabecker, many Clothing and Textile scholars have employed ethnohistorical research methodology (Welters, 1992; Oakes, 1991; Oakes & Riewe,

1992; Openda-Omar, 1993; & Prince, 1992)

Welters (1992) found the ethnohistorical method useful in "providing a more complete picture than if documents alone were used or if ethnographic data were the sole source" (p. 35). Openda-Omar (1993) used an ethnohistorical approach while investigating dress in the Kakamega District of western Kenya. She noticed that "there was photographic as well as documentary data in the archives, and ethnographic, photographic, and artifact data in the field" (p. 18). Artifacts per say are excluded from the field study portion of Ewers' model, I agree with Openda-Omar, in that, artifacts appear in the field and should be included in both aspects of ethnohistorical research. Openda-Omar's realization represents an argument for employing ethnohistorical research. To increase the understanding of ethnohistorical methodology, I will separately discuss the research approaches that apply to my research on St. Lawrence Island hair embroidery.

Field Studies

Field studies, important to ethnohistorical research, enable the researcher to acquire an understanding of the culture under investigation. Any case study utilizing field research may involve several data collecting methods. Touliatos and Compton (1988) suggest that case studies are field research entailing participant observation and unstructured (informal) interviews (p. 245).

According to Agar (1980), the researcher partaking in participant observation is "directly involved in community life, observing and talking with people as you learn from them their view of reality" (p. 114). During field research, Oakes (1991) employed participant observation to obtain descriptions of skin sewing skills. Daly (1984) suggests that the "proportion of participation and observation varies according to the social role established and the personality of the fieldworker" (p. 358).

Participant observation requires identifying informants with valid information, often representing a difficult and frustrating procedure. To ease frustrations, Touliatos and Compton (1988) suggest resorting to snowball sampling when "a list of all persons in a population is unavailable and a systematic sampling frame cannot be applied" (p.

65). Snowball sampling builds upon known informants who, in turn, identify additional qualified persons (Touliatos & Compton, p. 65; Oakes & Riewe, 1992, p. 77; & Openda-Omar, 1993, p. 25).

Ethnographic interviews provide invaluable field study data, once informant lists are compiled. According to Agar (1980), informal ethnographic interviews allow flexibility in the interview setting (p. 90). The informal interviewer may select appropriate questions as situations arise and should refrain from assuming the role of interrogator throughout the interview (Agar, p. 90). An informal interview encompasses open-ended questions which allow informants to maintain freedom in how best to answer.

Museum and Archival Studies

Museum studies incorporate many disciplines pertaining to one common goal, namely the preservation of knowledge through material items. By incorporating museum and archival research with community research, I hoped to form a more complete understanding of indigenous hair embroidery. Museum artifacts can provide adequate and valid evidence toward understanding a culture (Reynolds, 1986, p. 301). Reynolds suggests that artifacts provide "an understanding of the technical and material aspects of a culture" (p. 297). Whereas, Teather (1991) envisions that museum artifacts "make up collections and function as material documents" (p. 408). Since Turner (1976) suggests that artifacts with hair embroidery are inaccurately identified, methods other than artifact descriptions such as visual searches are necessary to locate hair embroidery within museum collections (p. 13).

Young (1985) suggests that style is "useful for describing and categorizing artifacts on the basis of easily observable and measurable characteristics" (p. 53). Pearce (1986) suggests that artifacts share common characteristics enabling them to be grouped together; the researcher uses analysis to determine new groupings (p. 199). Prown (1980) defines style as "a distinctive manner or mode which ... bears a relationship with other objects marked in their form by similar qualities.... inescapably culturally expressive" (p. 197).

The authenticity of an artifact is important when stylistic evidence is utilized to classify the origin of an artifact. Prown (1980) states that:

once stylistic criteria have been established by the examination of objects known to be authentic ... it becomes possible ... by application of these internalized stylistic standards, to discern objects that are authentic and to reject those objects or parts of objects that do not ring true. The process can be rapid, even automatic, and often unconscious (p. 209).

The origin of an authentic artifact is discernable through style, material, and technical analysis. Oakes (1988) suggests that Inuit origin is identifiable through careful analysis of skin clothing styles (p. 15). Throughout Alaska and Far Eastern Russia, northern explorers and researchers have documented regional adornment characteristics which assist in identifying the origin of hair embroidery artifacts (Bogoras, 1909; Jochelson, 1908; Moore, 1923; Murdoch, 1892; & Nelson, 1899).

Ewers (1961) states that "well-documented drawings, paintings, photographs, and artifacts ... can convey vivid impressions of ... life and achievement that the written or spoken word cannot duplicate" (p. 268). Artifact research, unlike archival and library research, provides direct information regarding non-literate societies. According to Finley (1985), artifact research models produce scholarly studies capable of being verified through systematic research (p. 36). Finley states that Fleming (1974) succeeded in creating a verifiable artifact study model by investigating five basic properties (p. 36). Fleming states that "the five basic properties provide a formula for including and interrelating all the significant facts about an artifact" (p. 156). The five properties include: history (where, when, etc...), material (substances), construction (manufacture techniques & workmanship), design (structure, form, style, iconography, & ornamentation), and function (use & role) (Fleming, p. 156). Within the artifact model, the five properties undergo identification, evaluation, cultural analysis, and interpretation (Fleming, p. 156).

The system of artifact studies developed by Fleming (1974) utilizes a form of content analysis known as attribute analysis. Content analysis has been gaining acceptance within the field of Clothing and Textile research by appealing to both

qualitative and quantitative research approaches (Touliatos & Compton, 1988, p. 233). Content analysis, as defined by Carney (1972), involves "any technique for making inferences by objectively and systematically identifying specified characteristics" (p. 25). Carney states that as a researcher under content analysis:

you are simply recording details each in itself too insignificant for you to be able to see.... Only when you have all the facts can you see which are emphasized most, which least; only when the facts are in can you see what is not there (p. 17).

Attribute analysis involves the content analysis of material culture artifacts. Caseburg (1993) used attribute analysis to record and identify style, construction, ornamentation, and symbolism among shaman's clothing from the Belcher Islands, Northwest Territories (p. 53).

Fleming (1974) used textual description to document artifacts, whereas, Burnham (1992) employs both visual and textual documentation techniques. Welters (1992) utilized "pre-printed worksheets, each costume component was analyzed for materials used and methods of manufacture. Garments were drawn to scale on graph paper, and embroidery motifs were sketched" (p. 30). Burnham created a visual portrayal of painted caribou-skin coat design motifs through illustrating the designs and providing a brief textual description. Photography also provides a visual documentation technique. Collier and Collier (1986) state that the use of photography records "large areas authentically, rapidly, and with great detail, and a means of storing away complex descriptions for future use" (p. 16).

Chapter III.

Research Methods

My study focuses on technical, decorative, and social aspects of hair embroidery observed through artifact studies and community research. The majority of museum, archival, and community research was conducted during January and February, 1994. Utilizing Welters' study as a model, I conducted a pilot artifact study at the University of Alaska Museum in Fairbanks, Alaska. During the pilot study, hair embroidery artifacts from St. Lawrence Island were studied to familiarize myself with Yuit hair embroidery.

Field Research

Prior to arrival on St. Lawrence Island, I obtained verbal permission to visit from the Mayor of Gambell, as well as Estelle Oozevaseuk whom I wished to interview. Once on the island, I spoke with Gerald Soonagrook the president of the Indian Reorganization Act Council (IRA) in Gambell and Kenneth Kingeekuk president of the IRA in Savoonga to acquire permission to conduct my research in both communities.

While on St. Lawrence Island, I conducted informal interviews, to investigate factors influencing the occurrence of hair embroidery. I interviewed informed participants who were selected through snowball sampling. The extent of participation in hair embroidery on St. Lawrence Island was unknown to me prior to my arrival. Therefore, snowball sampling provided the flexibility needed to develop a progressive sample through the interviewing process. The informal interviews conducted on St. Lawrence Island provided invaluable information which increased my awareness of Yuit hair embroidery.

Museum and Archival Research

Upon return from St. Lawrence Island, I continued my investigation of museum and archival collections at the University of Alaska, Fairbanks. The Alaska and Polar Regions Department Archives, at the University of Alaska Fairbanks, contain the

personal papers of Otto W. Geist. Geist was the collector of the St. Lawrence Island hair embroidery artifacts now located in the University of Alaska Museum. Various other archival and photographic collections were viewed for information concerning hair embroidery (see Appendix C).

Within the University of Alaska Museum, I continued to record and analyze hair embroidery information. The duration of my second stay was more extensive, allowing ample time to record the artifact attributes in detail. Photographs and measurements were taken for future reference and analysis. The hair embroidery artifacts within the Sheldon Jackson Museum collection in Sitka, Alaska were studied. I recorded these artifacts and ordered photographs from the museum, complying with museum policies.

I feel a discussion regarding the process I utilized when identifying hair embroidery artifacts is important. Unidentified hair embroidered artifacts were located according to stylistic appearance and regional characteristics. I developed an awareness of distinctive features when documenting known hair embroidery artifacts. My attention was drawn to artifacts with Far Eastern Russia, Yuit, Iñupiat, and Aleut stylistic appearances, owing to the location of hair embroidery artifacts in these regions. Also, my attention was drawn toward certain types of material culture which have a higher probability for being embroidered, such as quivers, housewives, and pouches. My identification process began with the location of select artifacts from particular regions; these artifacts were then studied to see if they exhibited hair embroidery. I examined the appearance of any possible hair embellishment by comparing them with known examples of hair embroidery. Hair appears similar to porcupine quills, sinew, and vegetable fibres; therefore a method of comparison in which one proceeds from known cases to unknown ones was important. My familiarity with hair embroidery often resulted in the discovery of previously mis-identified artifacts with hair embroidery. Whether the identification process was conscious or unconscious, style and regional characteristics became an important method for locating hair embroidery.

Prior to my arrival, Dinah Larsen, the Coordinator of Ethnology at the

University of Alaska Museum had located the artifacts with hair embroidery and placed them on a work table. During my stay, however, I located additional artifacts within storage, on display, and on the work table at the University of Alaska Museum. These artifacts were identified and determined to be embellished with hair embroidery (UA 610.5920, UA 67.98.133, UA 67.132.1, & UA 68.8.1) (see Appendix D). While at the Sheldon Jackson Museum, my process for locating artifacts included a visual survey of artifacts on display and in storage. I identified three artifacts (SJM II.N.20, SJM II.N.31 a&b, & SJM II.N.92 a&b) which state hair embroidery in their documentation records (see Appendix D). The remaining six artifacts, featured in this study, were located utilizing a method of stylistic observation and examination. I suspect that without the use stylistic identification, a smaller number of hair embroidery artifacts would have been located for my study.

While conducting artifact research, I utilized a previously compiled list of attributes to textually document the artifacts (see Appendix D). I employed the five basic properties outlined by Fleming (1974), which include: history, material, construction, design, and function, in order to develop the list of attributes and to record artifact information (p. 156). The knowledge of hair embroidery I gained on St. Lawrence Island enabled me to provide an accurate and detailed description of the artifacts. Burnham's (1992) approach to documenting artifacts visually and textually provided guidelines for artifact description and illustration.

Chapter IV.

Literature and Findings

St. Lawrence Island

Understanding relevant environmental and cultural factors of St. Lawrence Island aid in understanding Yuit participation in hair embroidery. It is important to place St. Lawrence Island within a geographic and cultural context when investigating hair embroidery. I have incorporated both historical and contemporary information (when available) into this study to illustrate the characteristics associated with hair embroidery among the Yuit on St. Lawrence Island. The term Yuit, also referred to as Eskimo, represents the Yupik speaking people of western Alaska and Far Eastern Russia; the St. Lawrence Island Yuit are a subset of the general Yuit population (see Appendices A & E).

Geographic Review

St. Lawrence Island, the largest island in the Bering Sea, is about 104 miles in length and averages 20 miles in width with a land surface of 1,882 square miles (Apassingok, Walunga, & Tennant, 1985, p. XX). St. Lawrence Island is located "between 168^o45' and 171^o50' west longitude and between 63^o00' and 63^o38' north latitude" (Hughes, 1960, p. 5) (see figure 1). The island consists of flat tundra with several mountainous features formed through volcanic activity (Hughes, 1960, p. 5).

The population of St. Lawrence Island is divided into the two permanent communities of Gambell and Savoonga (Hughes, 1960, p. 1) (see figure 2). Gambell, the American-given name to *Sivuqaq*, is the oldest existing village and is located on the northwest tip of the island. Savoonga, located in the north central region, was established in 1914 as a reindeer herding settlement (Apassingok, Walunga, Oozevaseuk, & Tennant, 1987, p. XVII). Ackerman (1976) states that the modern village site was established in 1917 (p. 83). Savoonga, located south of Gambell, currently controls the herd of domestic reindeer on St. Lawrence Island. 1991 population estimates indicate that Gambell has 525 residents, while Savoonga has 519 residents (Alaska population overview, 1991, p. 113).

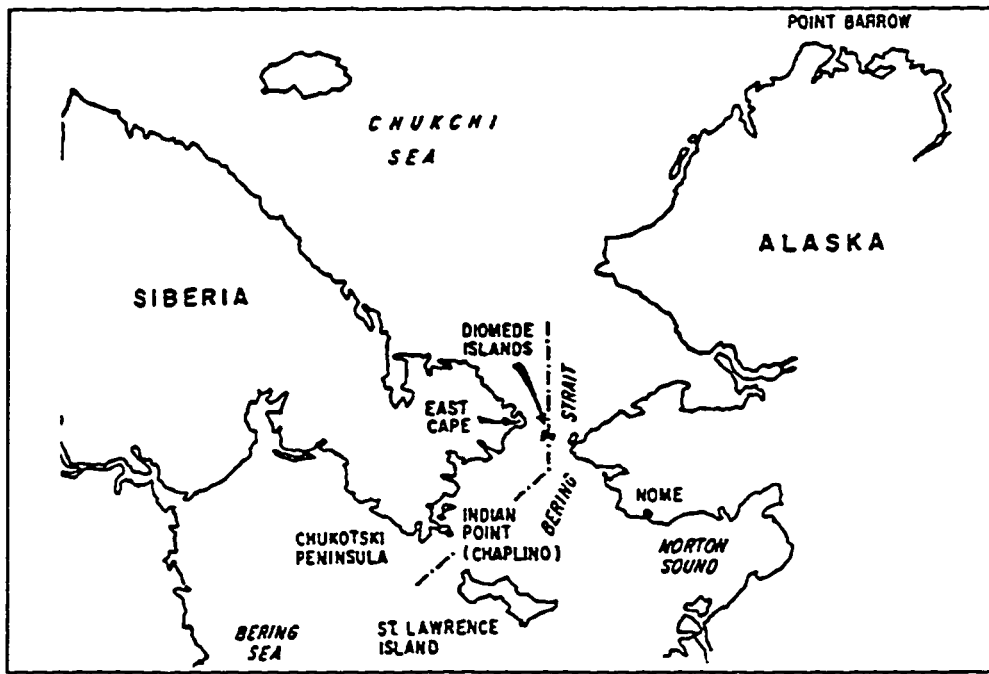


Figure 1. A map of the North Bering Sea (Beringian) region illustrating the location of St. Lawrence Island (From Folding map, 1955, *Arctic*, VII (3&4) Copyright 1955 by Arctic Institute of North America. Reprinted by permission).

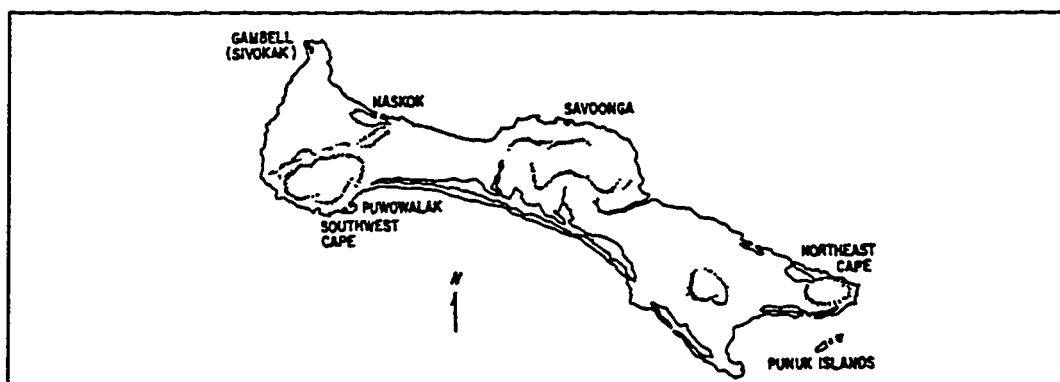


Figure 2. A map of St. Lawrence Island showing the location of Gambell and Savoonga (From *Archaeological Excavations at Kukulik* (p. 7) by O. W. Geist & F. G. Rainey, 1936, Washington D.C.: U.S. Government Printing Office and University of Alaska Miscellaneous Publications (Vol. 2). Copyright 1936 by University of Alaska Press. Reprinted by permission).

Cultural Review

Culturally, St. Lawrence Island has a closer affiliation with the Asiatic Eskimo than with North American indigenous peoples. Krauss (1994) suggests that "St. Lawrence Island was an appendage of Asia ... now the major native Alaska-Siberian link" (p. 366). Indigenous inhabitants of St. Lawrence Island and the mainland of Far Eastern Russia speak a nearly identical dialect of the Siberian Yupik language (Langdon, 1993, p. 9). Hughes (1960) noted that "the closest cultural relatives of the St. Lawrence Island people therefore live on the Chukotski Peninsula, only thirty-eight miles distant, in the village of Ungwaezik (or Chaplino)" (p. 4) (see Figure 2). Krauss notes that New-Chaplino, 'sister city' to Gambell, is 24 hours from St. Lawrence Island in a row boat (faster with an outboard motor) (p. 368 & 377).

Fitzhugh (1988) states that the St. Lawrence Island Yuit live in "semisedentary clan-based villages" passing membership through the paternal figure (p 45). Jorgensen (1990) suggests that St. Lawrence Island contains multilocal patrilines, resulting from Savoonga being established as a reindeer herding camp (p. 58). Members of distinct family bands reside in both Gambell and Savoonga. Langdon (1993) states that St. Lawrence Yuit recognize their paternal clan leader as the person who is the whale hunt coordinator, conductor of appropriate rituals, and house owner (p. 50). Yuit communities consist of large kin groups with one village leader which rely on "subsistence economics" (Jorgensen, p. 75). Jorgensen states that:

the term 'subsistence economics'.... comprises the organization of labor that is required to extract, process, and store naturally occurring resources; the reorganization of distribution required to share, gift, or reciprocate those resources; and the patterns of consumption of those resources that can be observed (p. 75).

Gambell remains a subsistence based economy which includes a traditional production organization through extraction, distribution, and consumption of local resources (Jorgensen, p. 252).

The inhabitants of St. Lawrence Island have relied on sea mammals for subsistence including food and materials for tools, clothing, and other necessities.

Jolles (1994) describes current food resources in Gambell as:

walrus is the primary staple meat as it has been for hundreds of years. Seal, *mukluk* (bearded seal), an occasional beluga or minke whale, migratory fish--tomcod, salmon, two varieties of sculpin, herring, Arctic char, and capelin--are all taken to feed the community. But the subsistence foods which most people talk about and which continue to define identity in the village are the bowhead whale (*aghveq*) and the polar bear (*nanuq*) (p. 87).

In this discussion by Jolles, reindeer is unrepresented as a source of food in Gambell. Jorgensen (1990) suggests that the community of Savoonga relies less on sea mammal resources than does Gambell (p. 58). I, therefore, suggest that residents of Savoonga may rely on reindeer meat for partial subsistence. Alaskan Consultants, Inc. (1984) state that reindeer provide 1.9% of the annual subsistence resource for Savoonga from 1962-1982, whereas reindeer represent zero part of the subsistence resources in Gambell (p. A-8). Current statistics pertaining to subsistence patterns for Savoonga are unavailable to date, however, the reindeer herd has increased from 75 head in 1984 to approximately 1300 head in 1994 (Alaskan Consultants, Inc., p. 37; Kenneth Kingeekuk, personal communication, January, 1994). Clothing was made by using reindeer and seal skins, with reindeer skin being the warmest. Hughes (1960) suggests that reindeer hides were obtained through trade with Siberia before St. Lawrence Island possessed reindeer herds (p. 144). Clothing embellishment found on St. Lawrence Island will be discussed in greater detail below.

Factors Influencing Yuit Hair Embroidery

Through my research on St. Lawrence Island, I developed an interest in the causal factors for hair embroidery among the Yuit community. Turner (1976) classified Alaskan hair embroidery under a Siberian, as opposed to North American, subheading (p. 40). The classification of hair embroidery established by Turner, along with the close proximity of the island to the Russian Far East, suggests a sharing of knowledge among trans-Beringian indigenous groups. Throughout my research, I attempted to identify plausible factors which contribute to the occurrence of hair

embroidery on St. Lawrence Island. My investigation into trade relations, introduction of reindeer, impact of ethnographic researchers, and cold war tensions provide insight into hair embroidery on St. Lawrence Island.

Trade Relations with Far East of Russia

Indigenous trade relations have improved subsistence living through the creation of a system based on borrowing and adapting more efficient ways of life (Oswalt, 1979, p. 280). Trade among indigenous peoples from Alaska and Far Eastern Russia allowed access to otherwise unavailable resources. For example, the Chukchi traded with the Alaskan Yuit to acquire sea mammal skins. In return, the Yuit received reindeer hides accessible only through trade with the Chukchi (Geist, n.d., p. 1; Burch, 1988, p. 236-237). Gurvich (1988) suggests that the Bering Sea provided an insignificant barrier to contact for the northern people (p. 158). Trade alliances began to promote cultural sharing and integration of traditional knowledge; these trade relations appear partially accountable for similarities in indigenous cultures.

Evidence indicates that indigenous trade relationships existed between Far Eastern Russia and Alaska prior to European contact. According to Hickey (1976), the northern trade network included indigenous residents of the Beringian region before 1850 (p. 415). Trade had become a "network with rules of its own, transcending local social conventions, and may have helped to bind a number of autonomous societies into an apparent whole" (Hickey, p. 420). The organization of indigenous trade fairs throughout the Russian Far East and Alaska began to increase trade in the Beringian region (Burch, 1988, p. 236). These trade fairs served to ensure the "large-scale inter-societal distribution of goods," aimed at balancing local resources (Hickey, p. 417). In 1799, founders of the Russian American Company began to diminish the one-sided Russian exploitation of indigenous Yuit peoples by establishing ports-of-trade (Oswalt, 1979, p. 283). The Russian American Company became the Alaska Commercial Company after the United States purchased Alaska from Russia in 1867. Along with increased Euro-American trade, the Yuit continued trade contact with the Russian Far East to acquire goods possibly including materials for hair embroidery. Trade appears

to have had an important impact on the material culture of St. Lawrence Island and their neighbours in Far Eastern Russia.

My investigation of trans-Beringian trade relations indicates the possibility that the knowledge of hair embroidery infiltrated into Alaska by way of Far Eastern Russia. Defining a specific origin for hair embroidery is impossible. Turner (1976) suggests that hair embroidery techniques originated in Russia through contact with China (p. 70). Fitzhugh (1994) states that indigenous trade relations between Far Eastern Russia and Alaska were linked to China, Korea, and Japan (p.36). In Russia, Turner believed the embroidery technique was modified to incorporate local animal hair as substitute for unavailable silk thread. The knowledge of hair embroidery possibly continued to be brought eastward, infiltrating into Alaska through the traders and relatives from Far Eastern Russia (Turner, 1976, p. 70). Considering the indigenous contact, it appears a plausible conclusion that individuals from Far Eastern Russia were influential in introducing hair embroidery to St. Lawrence Island and Alaskan coastal inhabitants.

Evidence of cultural contact, between the Russian Far East and St. Lawrence Island, suggests a connection regarding the occurrence of hair embroidery on the island. During an interview Estelle Oozevaseuk, from Gambell, indicated that hair embroiderers and families from Far Eastern Russia migrated to St. Lawrence Island during the 1920's (personal communication, January, 1994). This date corresponds with the hair embroidered artifacts from Gambell at the University of Alaska Museum (UA 64.21.136, UA 64.21.137, UA 64.21.139, & UA 64.21.859) (See Appendix D). In early spring, individuals from Far Eastern Russia travelled across the Bering Sea bringing with them gifts and trade goods (Estelle Oozevaseuk, personal communication, January, 1994).

Estelle Oozevaseuk states that her great grandmother embroidered with reindeer hair, learning hair embroidery while visiting the "reindeer people" (personal communication, January, 1994). Estelle was unable to accurately name the reindeer people; perhaps she was referring to the Chukchi from Far Eastern Russia. Jorgensen (1990) suggests that trade relations did exist between the Chukchi and St. Lawrence Island Yuit (p. 133). Geist suggested that the Yuit from Far Eastern Russia, who

understood the Chukchi language, would translate trade exchanges between the St. Lawrence Island Yuit and the Chukchi (Geist, n.d., p. 1).

The powerful trade relations and kinship ties suggest that marriage existed between St. Lawrence Island and Far Eastern Russia (Jorgensen, 1990, p. 57). Through marriage, Russian women moved to the island bringing with them the knowledge of hair embroidery (Nancy Walunga, personal communication, January, 1994). Women from the Russian Far East would likely continue to embroider after they moved to St. Lawrence Island. Therefore, kinship ties between Far Eastern Russia and St. Lawrence Island possibly represent an important factor in the development of hair embroidery on the island.

Formal education assisted in promoting Yuit hair embroidery. According to Vivian Iyakiten (personal communication, January, 1994), the high school curriculum in Gambell included hair embroidery. Hair embroidery was taught to young women by a school teacher from the Russian Far East during the 1950's (Vivian Iyakiten, personal communication, January, 1994). Vivian was eighteen years old in 1944; therefore, I suggest that hair embroidery was probably in the high school curriculum during the 1940's. Furthermore, during 1950 it appears questionable that individuals from Far Eastern Russia were present on St. Lawrence Island. After World War II, tensions began mounting in 1948 which resulted in discontinued Bering Sea border travel (Bernton, 1991, p. 21). The travel restriction, known as the ice curtain, directly resulted from 'Cold War' tensions between the governments of Russia and the United States. I will discuss this situation in more detail below.

Reindeer Herding in Alaska

The introduction of domestic reindeer into Alaska represents another event which impacted the production of hair embroidery on St. Lawrence Island. In 1891, Sheldon Jackson and the Bureau of Education purchased 1280 domestic reindeer from Far Eastern Russia (Lantis, 1950, p. 29; Stern, Arobio, Naylor & Thomas, 1980, p. 17). Sheldon Jackson believed the introduction of reindeer would provide a "new and more permanent food supply for the half-famished Eskimo" (Jackson, 1895b, p. 16).

Olson (1969) states that Jackson exploited the "issue of starvation" to secure financial support for the importation of reindeer (p. 20). Scholars generally agree that between 1850-1890 the indigenous population in northwestern Alaska had declined, thus forcing the inhabitants to alter their subsistence patterns and settlement locales (Stern et al., p. 23). Stern et al. suggest that food resources had declined as a result from over hunting and natural selection processes (p. 23).

The importation of reindeer continued for a decade until the Russian government began to prohibit reindeer exportation (Stern et al., 1980, p. 25; Rainey, 1941, p. 4). The purchase of reindeer and administration costs reached \$150,000 between the years of 1893-1903 (Stern et al., p. 17). Initially, Chukchi families were employed to instruct reindeer husbandry practices to the apprentices; these efforts proved unsuccessful. Therefore, in 1895, seventy Scandinavian Saami (Lapp) families were hired to resume reindeer husbandry teaching (Rainey, p. 5). The Saami were hired to instruct the Yuit and Iñupiat apprentices on practices concerning breeding and training of sled deer (Olson, 1969, p. 35).

Reindeer herding posed unanticipated challenges for herders who were accustomed to sedentary lifestyles, related to the strategic hunting of sea mammals at specific areas along the coast. Rainey (1941) states that inland (interior) peoples were successful reindeer apprentices having already been accustomed to the nomadic lifestyle of hunting caribou (p. 8). According to Rainey, the coastal herders failed to adopt a nomadic style of herding resulting in the decline of reindeer herding throughout Alaska (p. 8). The effectiveness of reindeer herding in Alaska took considerable time to develop. Jackson (1895a) states that it was "more economical to purchase reindeer clothing ready-made in Siberia than to buy the skins and make them up" (p. 62). The Alaskan reindeer economy was influenced by the expense of operation, as well as the struggle for ownership.

When the reindeer were introduced in 1892, the government of the United States permitted only the Iñupiat, Yuit, and Saami to own reindeer herds (Lantis, 1950, p. 28). During 1914-1939, wealthy people in business exploited the reindeer through obtaining herd control and ownership (Lantis, p. 28). Stern et al. (1980) suggest that

overgrazing and a decline in local markets had become apparent by 1920 (p. 17). However, reindeer herds were flourishing by 1925 increasing from twelve hundred to nearly half a million head (Rainey, 1941, p. 6). In 1926, the Bureau of Education introduced Native Stock Companies which were established to redistribute wealth among indigenous peoples (Rainey, p. 7). The decline in reindeer numbers progressed when open herding was introduced in 1933, which allowed reindeer herds to remain unattended. Further decline occurred under the five years of open herding which resulted in the reinstatement of close herding (Rainey, p. 7). Close herding involved continuous control over the reindeer herds. In 1937, Congress passed the Reindeer Act "declaring that the reindeer industry was necessary to subsistence resource and restricted ownership of reindeer to Alaskan Natives" (Bureau of Indian Affairs (BIA), 1977, p. 165). World War II and the postwar recovery placed a stalemate on attention to the Alaskan reindeer problem (Stern et al., p. 18). According to Postell (1990), the federal government currently acts within an advisory capacity, however the Bureau of Land Management maintains control over range protection and grazing permits (p. 82).

The comprehension of problems experienced throughout Alaska in relation to the introduction of reindeer provides a guideline for understanding the issues attributed to small isolated herds. In nineteen hundred, seventy domestic reindeer were transported to St. Lawrence Island (BIA, 1977, p. 163). Maintaining a reindeer economy on St. Lawrence Island proved difficult. The reindeer suffered from insufficient herd management and reindeer grazing problems (Ackerman, 1976, p. 85).

Reindeer were initially owned by stockholders in Savoonga and Gambell. The period before 1940 represents the height of reindeer herding on St. Lawrence Island (see Table 1). The BIA (1977) states that in 1947 Savoonga stockholders owned 7,728 shares of stock while Gambell holders owned 2,267 shares (p. 166). In 1954, after World War II and the postwar reform, the St. Lawrence Island reindeer herd decreased from ten thousand to one hundred head within 14 years (see Table 1). The drastic decline was a direct result of herd mismanagement and neglect. The decreased number of reindeer after World War II may partially explain the absence of reindeer hair embroidery among the St. Lawrence Island Yuit. The decline in reindeer

population resulted in the action to preserve the institution of reindeer domestication.

In 1964, the IRA councils of Savoonga and Gambell attempted to reorganize the herding policies to ensure reindeer survival. During the 1970's, Savoonga assumed control of the reindeer, when the herd was threatened with extinction. The BIA (1977) stated that Gambell stockholders were to transfer herd ownership to Savoonga and acquire new reindeer from St. Matthew Island (p. 166). Gambell was unable to acquire the reindeer, therefore the stock transfer was invalid.

Table 1

Population fluctuation of the St. Lawrence Island reindeer herd

Date	# of Reindeer	Source
1900	70	BIA, 1977, p.
1903	154	Jackson, 1904, p. 17
1909	533	BIA, 1977, p. 165
1940	10,000	BIA, 1977, p. 165
1948	300	BIA, 1977, p. 165
1949	450	Lantis, 1950, p. 38
1954	100	Ackerman, 1976, p. 86
1970's	800-1000	BIA, 1977, p. 165
1984	75	Alaska Consultants, 1984, p. 37
1994	1300	Kenneth Kingeekuk, Personal Communication, January, 1994

Note: These statistics possibly reflect an inaccurate method of date collection.

Apassingok et al. (1987) state that the chief herder determined the number of reindeer Savoonga exchanged for raw hide ropes from Gambell (p. 83). According to Apassingok et al. (1987), herders from Savoonga donate reindeer meat as a gift to Gambell residents (p. 83). Otto Geist, while living in Gambell in 1931-1932, documented that "Savoonga folks are the reindeer people on this island, but the people

here must pay for every pound of deer meat and hides when they need them" (Keim, 1969, p. 222). Geist may have represented a narrow and biased interpretation of the situation regarding distribution of reindeer on St. Lawrence Island.

Currently, the reindeer herds are controlled by the IRA council of Savoonga through government grants. According to Kenneth Kingeekuk (personal communication, January, 1994), president of the IRA council in Savoonga, they maintain control of approximately thirteen hundred reindeer at present. In 1989, the IRA council established control over the reindeer, when the herds were threatened by extinction. Three distinct reindeer herds exist on St. Lawrence Island, numbering approximately five hundred head each. The herds are located near the northeast cape, the central east end, and south of Savoonga mountain (Kenneth Kingeekuk, personal communication, January, 1994). In 1990, the IRA Council of Savoonga established a permit system to monitor reindeer hunting (Kenneth Kingeekuk, personal communication, January, 1994). A hunting permit, available to Gambell and Savoonga residents, costs one hundred dollars allowing one reindeer kill per household (Estelle Oozevaseuk, personal communication, January, 1994).

Several women from Gambell express an interest in resuming hair embroidery if the hair was available. The cost of the permit may contribute to the shortage of hair through deterring residents of St. Lawrence Island from hunting reindeer. Perhaps the inability to acquire reindeer hair in Gambell reflects seasonal availability of animal resources. Apassingok et al. (1987) state that "sometime in the month of July the fawn hides were ideal for clothing. The length of hair had gotten just right and was of good quality" (p. 99). However, Stern et al. (1980) state that the commercial reindeer slaughter occurs from October through February (p. 145). The seasonal data, provided by Stern et al., indicates that reindeer hair should have been accessible during my visit in January to St. Lawrence Island.

Women from Gambell indicate that hair can be accessible from Savoonga and Provideniya, Russia. Nancy Walunga (personal communication, January, 1994) has acquired reindeer hair through family relations in Savoonga or by purchase in Provideniya. Inez Gambell indicated a reluctance to request reindeer hair as a gift

from Siberian friends owing to their depressed economy (personal communication, January, 1994). Women from Gambell appear unwilling to purchase reindeer hair. Purchasing items unnecessary for survival, such as embroidery hair, may be difficult in an economy based on subsistence living, which is chronically short of cash.

Alice Kulowiyi, a Savoonga hair embroiderer, believes hair is accessible; she states "they butcher all the time" (personal communication, January, 1994). Acquiring reindeer hair on St. Lawrence Island may depend on knowledge of the slaughter timetable and practices. Savoonga residents have more opportunity to acquire reindeer hair during the butchery. In Savoonga, the embroiderer may easily send a messenger to retrieve reindeer hair from the butchery site. Information, in Gambell, regarding reindeer butchering may be unavailable; this lack of knowledge may contribute to the shortage of hair.

June Walunga and Inez Gambell, residents of Gambell, believe women would resume embroidery if the resource were available (personal communication, January, 1994). Determining whether my presence stimulated the desire to engage in or resume hair embroidery is impossible to gauge. My interest may have contributed to the desire to resume hair embroidery on St. Lawrence Island.

Active participation in hair embroidery on St. Lawrence Island is uncommon, however research indicates that the memory does exist. Nancy Walunga, from Gambell, desires reindeer hair to complete an embroidery project she envisions. She wishes to hair embroider the name of Gambell's dance group on their costumes. Consequently, the dance costumes would be viewed throughout Alaskan communities; this exposure might increase the interest in hair embroidery.

Early Researchers to the Island

The third factor to impact upon St. Lawrence Island hair embroidery relates to archeological and ethnographic interest in research. Various institutions commissioned researchers to visit St. Lawrence Island to conduct research and establish ethnographic collections for their museum. Keim (1969) credits Otto W. Geist with initiating scientific research on St. Lawrence Island. During the early 1930's, researchers

present on the island were: H. B. Collins, J. A. Ford, and M. Chambers from the United States National Museum; Dr. H. Mason researching with Carnegie Institute; and Ray Gilmore with the University of California (Patty, 1929, p. 1 & Keim, 1969, p. 216-217).

According to Keim (1969), Collins and Ford in 1931 excavated the old village sites near Gambell (p. 216). Their archeological dig was funded by the United States National Museum. Chambers, also with the National Museum, continued the dig after Collins and Ford left the island (Keim, p. 216). In 1931, the Carnegie Institute commissioned Mason, a botanist from the University of California, to conduct tertiary fossil research on St. Lawrence Island (Keim, p. 216-217). Gilmore, a researcher from the Department of Vertebrate Zoology at the University of California was collecting St. Lawrence Island birds and mammals (Keim, p. 217).

One of the largest Yuit archeological collections was secured by Geist for the University of Alaska Museum in Fairbanks. Geist was affiliated with the University of Alaska, then called the Alaska Agricultural College and School of Mines, from 1927 until his death in 1963 ("Finding Aid"). He spent three years on St. Lawrence Island under direction and funding from the Bunnell-Geist Bering Sea Expedition from 1927 to 1929. During Geist's stay on St. Lawrence Island, he:

lived with an eskimo family--eating their food ... --adopted into their tribe and given the Eskimo name of "*Aghvook*," meaning "bow headed whale"-- accompanying the Eskimos out onto the ice flows in search of game--as a member of their tribe, a spectator at their ... ceremonials and sacrifices (Patty, 1929, p. 1).

Geist created strong ties with the St. Lawrence Island Yuit allowing him access to otherwise unattainable details regarding subsistence life. Through community acceptance, Geist documented and collected intimate details portraying Beringian subsistence life.

Geist provided the Yuit with access to manufactured goods. He traded tobacco and non-perishable food items for ethnographic and archeological artifacts. These artifacts were donated to the University of Alaska Museum. While reading Geist's

accounts in the Archives, at the Alaska and Polar Regions Department at the University of Alaska Fairbanks, it became apparent that he collected artifacts representing every day life occurrences. Dinah Larsen suggests that the majority of items included in the Geist collection at the University of Alaska Museum are functional (personal communication, January, 1994). However, I found that the hair embroidered artifacts were ornate and relatively non-functional; these artifacts were perhaps intended for trade or as personal gifts as opposed to subsistence living. Koek (1984) suggests that material culture was "adapted to the taste of the Whites, and thus changed in style and function" (p. 90). Some of Geist's collection may represent this process of change.

Cold War Tensions

The ice curtain which was symbolically erected between Russia and Alaska began to prohibit any communication between St. Lawrence Island and their relatives in Far Eastern Russia for four decades. The decline in trans-Beringian communication significantly stultified the cultural exchange between these indigenous peoples. The restrictions conceivably influenced the decline in hair embroidery production among the St. Lawrence Island Yuit. Events to follow the restrictions are important in understanding what impact the ice curtain had on the production of hair embroidery.

Krauss (1994) suggests that foreign relations between Russia and United States were favourable during World War II (p. 368). However, post war relations were less stable, which result in security concerns that outweigh indigenous concerns. Krauss suggests that during the cold war United States and Russian contact may have existed, but was rare and infrequent (p. 370). He states that "if there was any contact between 1948 and 1958, there certainly was less in 1958-88" (Krauss, p. 370).

The travel restriction held indigenous communication at bay for forty years. Four decades presented sufficient time to sever cultural relations between many trans-Beringian groups. In the 1970's, residents of St. Lawrence Island and Little Diomed Island became interested in removing the political barrier between themselves and Far Eastern Russia (Krauss, 1994, p. 370). In 1977, correspondence in Yupik resumed

between St. Lawrence Islanders and their neighbours from Far Eastern Russia. Krauss states that "these indirect contacts helped build consciousness of each other's changing situation, continued existence, and desire to reestablish direct contact between the Eskimo of St. Lawrence Island and Chukotka" (p. 371). In 1987, Lynne Coxe, an American swimmer, swam from Little to Big Diomedes across the international date line into Russian territory (Krauss, p. 372). The 1988 Nome-to-Provideniya Friendship Flight reestablished direct trans-Beringian contacts. Among those participating in the Friendship Flight were seventeen Yuit from St. Lawrence Island (Krauss, p. 373). Krauss states that "one may hope that the Eskimo themselves may benefit, not only economically, but also socially, especially insofar as they may share in the opening of the frontier that has separated them for so long" (p. 373). In 1989, an agreement between the two super powers was signed. This agreement included a provision for visa-free travel between Far Eastern Russia and Alaska available to indigenous peoples (Krauss, p. 375). Renewed trans-Beringian contact is beginning to form. However, economic hardships have restricted regular travel and contact.

Cultural Transition

Traditionally, utensils and hunting implements, both functional and ornate, assisted in ensuring success in hunting. Lipton (1977) states that the Yuit embellish to "please and satisfy unseen powers in order to guarantee ... survival" (p. 25). She suggests that the Iñupiat and Yuit philosophy centres around a desire to exhibit respect. The more ornate the clothing and material possessions, the more respect displayed to the hunted animal. Chaussonnet (1988) believes that seamstresses express "magical beliefs and the symbolic values of the group" through traditional clothing (p. 209). She believes that the "effectiveness of a garment must be partially gauged in social, magical, and aesthetic terms, which in some cases outweighed the practical function of the clothing" (Chaussonnet, 1988, p. 210). Elaborate embellishment, such as hair embroidery, signifies reverence among Yuit society.

Northern spiritual beliefs are constructed upon established shamanistic and animistic convictions. Shamanism and animism found the basis for societal behaviour

and adornment. Shamanism involves the "presence of a special status for one who has superior control over the supernatural" (Graburn & Strong, 1973, p. 166). Another important aspect of Yuit cosmology is animism; it deals with the belief that "people, animals, inanimate objects, and the world in general are populated by spirits or souls" (Graburn & Strong, 1973, p. 166). Traditionally, the Yuit created embellishment as an expression of such cultural beliefs. However, the appearance of Yuit material culture reflect outside influences once Euro-American contact was established.

With the European influx, the Yuit established a barter system to procure Euro-American goods in exchange for indigenous items of trade. Trade experience acquired through barter with Euro-Americans indicated popular items which, in turn produced the highest gain. The Yuit began to incorporate European influences and modify utilitarian objects into material culture designed for the tourist trade (Koek, 1984, p. 84-85). The embellishment of material culture on St. Lawrence Island became more an income supplement than expression of cultural beliefs. Tourist items, such as ivory carving, scrimshaw, and doll making, have created and sustained a Euro-American market on St. Lawrence Island (Jorgensen, 1990, p. 141; Fair, 1982, p. 48; & St. Lawrence Island, 1982, p. 1). Jorgensen suggests that the depressed market for skin sewing in Gambell reflects the need for a "cooperative or agent to find markets" (p. 141). The ivory carvers in Gambell have formed an ivory cooperative to market their carvings; ivory carving provides a cash-based income for many Yuit households (St. Lawrence Island, p. 1). Possibly, when embellishment becomes a commodity, as apposed to a spiritual display, the most time efficient method of ornamentation will survive. I believe that hair embroidery represents an inefficient technique of embellishment for the tourism industry. An investigation of the tourism industry in Alaska, especially on St. Lawrence Island, would prove beneficial to my research. However, such research would require extensive investigation and appears outside the constraints of my project.

Hair Embroidery

Throughout my study, I suggest several factors which I believe to have influenced the production of hair embroidery on St. Lawrence Island. These factors include: trade connections with Far Eastern Russia, the introduction of reindeer into Alaska, contact with early researchers, and the tensions attributed to the cold war. Understanding these attributing factors along with the technical aspect of hair embroidery is important to enhance the general knowledge of this embellishment. In order to conceptualize the technique of hair embroidery, it is important to understand similar embroidery techniques used throughout the north. A brief survey of northern embellishment techniques may assist in distinguishing hair embroidery within museum collections. This general knowledge may provide a higher degree of accuracy when identifying artifacts with hair embroidery.

Northern Embellishment Techniques

Many embellishment techniques used on material culture are unique to the circumpolar north. Therefore, embellishment techniques indigenous to the geographic regions of Greenland, North America, and Far Eastern Russia were surveyed. Kaalund (1930) states that skin embroidery (*avigtar*) from Greenland contains dyed and appliquéd squares of skin (p. 124). Kaalund suggests that *avigtar* translates into "something one takes apart" (p. 124). This embroidery consists of "tiny skin squares painstakingly composed into a pattern and sewn in place as invisibly as possible" (Kaalund, p. 124). Greenlandic skin embroidery is often trimmed with beads which are composed of carved ivory and bone (Kaalund, p. 124).

Ochard (1916) considers porcupine quillwork to involve intricate stitching coupled with "the manipulation of the quills to produce effective designs" (p. 1). The technical aspect of quillwork, a popular North American embroidery technique, resembles that of hair embroidery. Quillwork and hair embroidery include the couching and appliquéd stitch (Hatt, 1914/1969, p. 23). Feest (1980) suggests that the term quillwork encompasses porcupine quills, moose and caribou hair, split bird quills, and vegetable fibres (p. 138). I feel, however, that these embellishment techniques are

unique and deserve individual consideration.

Turner (1976) describes 'false embroidery', produced by the Iroquois of Canada, as a twining procedure in which "each weft strand is brought forward to cross over the warp [sic] a moose hair is wound tightly round it from four to six times" (p. 38). The second embroidery technique, as described by Turner, involves a weaving or sinew warp technique. This technique employs hair in conjunction with porcupine quills; these quills are intertwined through the sinew warp and weft with moose hair being introduced into the design (Turner, p.38). A wallet at the Maine Historical Society employs false embroidery which includes a filling strand with moose hair wound around during the weaving process (Willoughby, 1905, p. 92).

During the eighteenth century, the Ursuline (or French-Canadian) nuns were believed to have introduced 'true embroidery' into eastern Canada. Originally, the Ursuline nuns used European silk and metallic thread for embroidery, however when the thread supplies were depleted they incorporated moose hair as a substitute (Turner, 1976, p. 48). True embroidery involves threading the hair directly through a needle, the needle and hair then penetrate into the birchbark to create a satin stitch (Turner, p. 49).

Turner (1976) postulates that hair embroidery is "native to northern Asia and America" (p. 69). He asserts that hair embroidery, already established within indigenous communities, was merely improved through the introduction of European tools. Turner establishes that embroidery techniques and materials extend from Siberia to New England, these boundaries exceed known French contact and influence (p. 69). Turner contends that evidence exists for the involvement of individuals from Siberia and Far Eastern Russia in hair embroidery 250 years prior to the arrival of the Ursuline nuns in Canada (p. 69). He, therefore, suggests that hair embroidery from eastern Canada was perhaps an indigenous establishment prior to their arrival. This assumption is based on the premise that it "is hard to believe that the cloistered needlewomen did not take their first moose hair from the hands of the Indians rather than directly from the moose" (Turner, p. 69). Dickason (1972) suggests that although the origin of embroidery in eastern Canada is in question, the designs employed on

Huron embroideries represent a distinctive European influence (p. 114). I am inclined to agree with the assumption that hair embroidery existed, in some form, prior to the arrival of the Ursuline nuns. I further agree that hair embroideries reflect European motifs which were introduced by the nuns upon arrival to Canada.

Speck (1911b) studied the decorative moose hair embroidery of the Huron Indians. He documented hair embroidery techniques which resemble those outlined by Turner (1976). Speck (1911a) stated that "moose hair appliquée [sic] embroidery of this tribe forms an integral part of a widespread northern technique, similar in many respects to quill work" (p. 13). Turner believes that hair embroidery, namely hair tufting, found in the Northwest Territories of Canada was derived from eastern Huron influence (p. 51). Turner (p. 32) and Speck (1911a, p. 5) categorize hair tufting as one stitch variation of hair embroidery. However, several scholars classify tufting as a separate entity; I am inclined to agree with Turner and Speck.

Fur mosaic, an embellishment technique in Far Eastern Russia, involves "selecting bits of fur of contrasting colours, cutting these to a pattern and sewing them together to form a dark design on a light background or, conversely, a light one on a dark background" (Kaplan, 1974, p. 7). According to Kaplan, fur mosaic work balances patterns with "minute rhythmically alternating triangles, squares and diamonds of pelt in two colours" (p. 7). Another embellishment technique from the Russian Far East involves intertwining '*rovduga*' or '*ravduga*,' which is a coloured chamois leather thong, through slits in the base fabric (Kaplan, p. 8). Throughout Kaplan, she refers to other forms of embellishment techniques in Far Eastern Russia which include beadwork, silk embroidery, thread embroidery, and textile appliqué.

Russian Far East and Alaskan Hair Embroidery

The overview of general embellishment techniques formed the foundation for my specialized study on Yuit hair embroidery. Hair embroidery is known to involve these types of hair: caribou (*Rangifer terandus*), moose (*Alces alces*), elk (*Cervus canadensis*), and reindeer (*Rangifer terandus*) (Turner, 1976, p. 16-17). Hair embroidery is found in regions where reindeer, caribou, and moose hair are indigenous

or accessible through trade. Turner states that hair embroidery spans the northern circumpolar regions from western Siberia to eastern Canada (p. 70). The circumpolar north has similar characteristics in geography and climate which influence similar clothing and embellishment techniques. The following subsections of my study focus on the relationship of hair embroidery among the Chukchi, Koryak, Yuit, and Aleut.

Hair Sources

Hair embroidery from Far Eastern Russia involves reindeer and caribou hair primarily. The popularity of reindeer breeding throughout the Russian Far East may account for the utilization of reindeer hair in embellishment. The Chukchi use reindeer and caribou hair to embellish their skin garments and accessories. On the other hand, the Koryak use hair from the elk, reindeer, mountain sheep, and seal along with silk and beads for their embroideries. Jochelson (1908/1975) suggests that the Koryak acquired elk (moose) hair and sinew through trade with the Chukchi (p. 682). The Yuit from Far Eastern Russia use the same materials as the Chukchi for their embroideries (Hughes, 1984b, p. 253).

The Alaskan Yuit chose to include reindeer, caribou, or moose hair in their embroideries. They often employed seal hair, an available local resource, for embellishment (VanStone, 1980, p. 57). The Yuit had access to seal hair at times when reindeer hair was unavailable. Estelle Oozevaseuk (personal communication, January 1994) states that she embellishes the seams of boots with polar bear hair when available. Embroiderers from Far Eastern Russia and Alaska appear to favour the use of reindeer or caribou hair for their embellishment over other sources of hair.

Types of Embroidered Artifacts

Chukchi women are known to embroider sled covers, boots, mitts, quivers, sleeve openings, or the back of women's frocks. Koryak women are known to embroider similar artifacts which include boots, mittens, matchboxes, bags, and pouches. Yuit hair embroidery from Far Eastern Russia is often found on belts, gloves, rugs, and slippers (Levin & Potapov, 1964). They are known to use hair

embroidery to trim their fur shirts as well (Bogoras, 1909/1969, p. 226). Chaussonnet (1988) suggests that the Yuit in Alaska embroider coats, hats, mitts, and gloves primarily. The Aleut, however, differ in embroidered aspects of material culture compared with the Chukchi, Koryak, and Yuit. They chose to embroider high collars, neck fronts, cuffs, and hems on their waterproof garments (*Kamleikas*).

Although different indigenous groups embroider objects distinctively, their methods of embroidery are similar. For the most part, hair embroidery stitches pass through the upper layer of skin without penetrating completely through the surface. This particular method of stitching allows the embroiderer to maintain the waterproof property of animal skin. The stitching techniques from Far Eastern Russia and Alaska contrast the true embroidery stitch found on embroideries from eastern Canada.

Aleut embroiderers were known to employ distinct variations of hair embroidery stitches on their *Kamleikas*. They utilized the technique of waterproof stitching to embellish without destroying the surface of the garment. Aleut embroidery techniques include edge variations or wrapping hair around a leather thong for seam attachment. The seam and edge variations enable the embroiderer to avoid penetrating the waterproof surface.

Perceived Level of Embroidery Skill

The application of embroidery techniques involves a great expertise and skill. According to Bogoras (1909/1969, p. 226), the Chukchi possessed minimal skill in hair embroidery when compared to the embroidery of the Koryak. Arutiunov (1988a), however, states that the Chukchi were known for their embroidery skills (p. 41). Bogoras suggests that the Koryak of Far Eastern Russia are highly skilled embroiderers (p. 226). Aleut embroidery has been regarded as complex with detailed motifs and stitching. Ivanov (1963) suggests that Aleut women represent the true masters of appliqué through the use of multi-coloured skin strips with white hair embroidery (p. 23).

Deciding whether one indigenous group or another excels at hair embroidery is subjective, representing an individual aesthetic preferences. Such generalizations

should be avoided, unless the judgement criteria for these decisions are outlined. In my opinion, the classification of an indigenous group as superior in embroidery represents a western ethnocentricity that should be avoided. The criterion used in determining the quality of embroidery is arbitrary. One culture may regard talent as represented by complex and intricate designs, whereas another may view the same design as cluttered or confusing. Technically speaking, complex and intricate designs which require fine needles and a skilled embroidery hand represent a higher degree of difficulty. On the other hand, simplicity may maintain an appeal of its own.

Embroidery Designs and Motifs

Hair embroidery designs may represent the level of skill possessed by the embroiderer, but more importantly the motifs may indicate beliefs held by the individual or society. Material culture from the Russian Far East focuses on the design and decoration of clothing, whereas Alaskan designs have religious and ceremonial implications (Fitzhugh, 1988, p. 295). This dichotomy may correspond to the level of Euro-American contact incurred by individual indigenous groups. Indigenous peoples from Far Eastern Russia possibly maintained earlier Euro-American contact than Alaskan groups. Therefore, I suggest that the extent and origin of non-indigenous contact may correlate to the symbolism attributed to the material culture.

The Chukchi create geometric designs which include interlocked circles, doubled and spurred lines similar to old Bering Sea and Punuk art styles (Fitzhugh, 1988, p. 299). The motifs on hair embroidery produced by the Chukchi incorporate geometric figures such as straight lines, triangles, crosses, and single or double circles (Bogoras, 1909/1969, p. 226). Fitzhugh (1988) suggests the Chukchi semicircle and arch figures represent the U-shaped motif (p. 299). This U-shaped design resembles the tongue motif which Ivanov (1963) attributes to all Siberian indigenous peoples (p. 24) (see Figure 3). The Chukchi appear to have incorporated stylized plant and floral motifs in their mid-twentieth century embroideries. Hughes (1984b) states that the Yuit from Far Eastern Russia maintain similar patterns to those employed by the

Chukchi (p. 252).

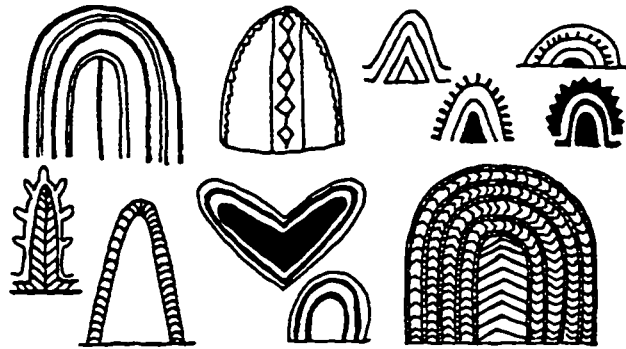


Figure 3. Tongue and modified tongue motifs found throughout northern embellishment (illustrated from Ivanov, 1963, p. 225)

Koryak embellishment motifs are arranged in aesthetic patterns of either geometric or representational designs. The geometric motifs include squares, rectangles, triangles, and circles, whereas the representational motifs include the stylized animal figures of reindeer, birds, and plants (Levin & Potopov, 1964, p. 869-870). Jochelson (1908/1975) suggests that sculptural art may provide insight into embroidery motifs (p. 686). He suggests a parallel between the realistic reproduction of animal embellishment motifs to that of sculpture.

The Koryak use "simple, double and concentric circles to represent the sun, the moon, or the stars" (Jochelson, 1908/1975, p. 686). The use of zigzags in embellishment can be interpreted as stylized mountains or waves (Jochelson, p. 210). The arch motif parallels the tongue or U-shape motif described by Ivanov (1963, p. 24). In 1930, the Koryak embroidery motif represents a design similar to Chukchi embroidery of the same decade (Kaplan, 1974, p. 41 & 59). A 1930 Chukchi briefcase employs plant motifs, which Bogoras (1909/1969, p. 226) believed to be nonexistent among Chukchi embroidery (Kaplan, 1974, p. 59) (see figure 4). A similar plant design is portrayed on a Koryak boot (Kaplan, p. 41) (see Figure 5). In my opinion, the occurrence of floral and plant motifs indicate an evolution of popular motifs. The Chukchi briefcase and the Koryak boot are documented within the same decade, thus possibly illustrating motifs which follow popular trends (see Figure 4 &

5).

Stylistically, Aleut embroidery is arranged linearly to include chevrons, triangles, diamonds, and ovals. The zigzag motif is also popular among Aleut embroidery, it comprises of two hairs being manipulated to form the motif. Yuit embroidery motifs were highly geometric and abstract. The Alaskan Yuit motifs include stylized ovals or thorns forming what Ivanov (1963) classifies as the tongue or U-shaped motif (p. 24).

Limited resources are available regarding Yuit embroidery motifs which prohibit further discussion of symbolic meanings.

Popular motifs on hair embroidery from Far Eastern Russia and Alaska are highly geometric and stylistic in nature. The Chukchi, Koryak, Aleut, and Yuit incorporate the stylized tongue motif into hair embroidery. The tongue motif is represented through stylized crosses, semi-circles, semi-ovals, rosettes, and hearts (Ivanov, 1963, p. 24) (see Figure 3). Motifs representing single or numerous circles are common throughout the embroidery of the Beringian region. I have addressed the use of these motifs in detail below.

In 1909, Bogoras suggests that Chukchi women, in general, had lost the cultural meanings behind their embroidery motifs (p. 226). He ascertained that, if the symbolic meanings did exist they were forgotten by the early twentieth century. According to Bogoras (1909/1969), the symbolism behind embroidery motifs was

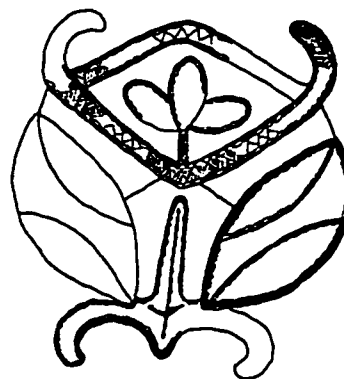


Figure 4. A Chukchi embroidery motif from c. 1930 (illustrated from Kaplan, 1974, p. 59).

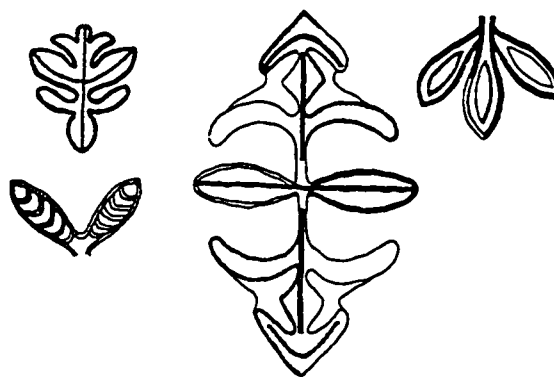


Figure 5. A Koryak embroidery motif from c. 1930 (illustrated from Kaplan, 1976, p. 41).

irreclaimable (p. 226). When researching motif symbolism, ceremonial and religious beliefs which represent cultural undertones are perhaps kept from outsiders. I feel extreme caution should be exercised when investigating meanings or belief systems. When symbolism within an indigenous society appears inexplicable or nonexistent, I believe a deeper underlying meaning may exist. Traditional societies attribute meaning to everyday occurrences, therefore embroidery motifs may follow suit. The possibility that embroiderers utilize designs in accordance to contemporary motifs does exist as illustrated in figures 4 and 5. In my opinion, meanings which are attributed to popular motifs may differ from the traditional meanings but still provide valid cultural symbolism. Popular motifs, however, tend to change rapidly as new design inspirations are introduced.

Jochelson (1908/1975) while researching Koryak material culture used an objectionable line of questions to elicit the answers he received (p. 686). He states that:

as a general rule the ornamentation had no special significance ... women use the designs employed in the ornamentation of common dress, which have undoubtedly been adopted from the Russians or the Tongus, merely for beauty, without reference to their meaning (p. 686).

Jochelson, by dismissing the cultural significance and meanings attributed to Koryak designs, formulated similar conclusions to Bogoras. I believe that the possibility of cultural meanings behind motifs should be considered even if research fails to provide an answer. The symbolism behind embellishment motifs can be subtle and visible only to members of a particular family or cultural group.

The motifs used in hair embroidery consist of single and multiple combinations of embroidery stitches. The embroidery stitch itself often represents a popular motif found among northern material culture. To distinguish hair embroidery from the Chukchi, Koryak, Aleut, and Yuit, an understanding of distinct embroidery stitch techniques and the regions in which they occur is important.

Hair Embroidery Techniques

The knowledge of hair embroidery involves an intricate understanding of stitch variations. The following variations, of the appliqué or couching technique, are known to be indigenous to specific northern regions. Several of these variations are located throughout all northern regions where hair embroidery has been documented. However, other variations appear specific to individual regions. In my opinion, the sharing of indigenous knowledge and assimilation of ideals may have impacted the territorial occurrence of the stitch variations. Therefore, a regional classification of stitch variations is important to place hair embroidery within a context (see Figure 6). My investigation into stitch variations found to date is important to determine trends associated with the regional existence of hair embroidery.

Turner (1976) suggests that appliqué or couching of hair involves laying it "on the surface to be decorated and attached at intervals by a sinew or cotton thread stitched over the hair at right angles to it" (p. 31) (see Figure 6a). This continuous line of appliqué is produced by merging successive hairs and securing them with a stitch. I suggest that the basic couching stitch is indigenous to all regions where the inhabitants participate in hair embroidery. Another variation of the continuous line stitch is the 'meander' arrangement, in which a wavy line is formed by positioning the hair to create the desired effect (see Figure 6b). This meander arrangement involves the use of diagonal couching stitches, which are placed in opposite directions, to secure the hair. I found this meander stitch to be indigenous to hair embroideries from Far Eastern Russia and the Aleutians.



Figure 6a. Simple line variation (illustrated from Turner, 1976, p.31).



Figure 6b. 'Meander' stitch variation (illustrated from Turner, 1976, p. 31).



Figure 6c. Twisted hair variation (illustrated from Turner, 1976, p. 31).

Regions	6a	6b	6c	6d	6e	6f	6g	6h
Siberia	X	X	X	X				
Alaskan Yuit	X		X					
St. Lawrence Island Yuit	X		X					
Aleut	X	X	X					
eastern Canada & NWT	X		X		X	X	X	X
Regions	6i	6j	6k	6l	6m	6n	6o	6p
Siberia	X			X				X
Alaskan Yuit	X						X	X
St. Lawrence Island Yuit	X							
Aleut	X				X	X	X	X
eastern Canada & NWT		X	X					X
Regions	6q	6r	6s	6t	6u	6v	6w	
Siberia	X	X	X				X	
Alaskan Yuit	X				X			
St. Lawrence Island Yuit	X		X	X	X	X	X	
Aleut	X		X	X	X	X	X	
eastern Canada & NWT	X		X					

Figure 6. Hair embroidery stitch techniques and their existence known to date.

The third stitch variation involves twisting the hair and securing it with an oversewn line of stitching (see Figure 6c). At regular intervals, the hair is twisted and secured by diagonal stitching. This variation is representative of hair embroideries from Far Eastern Russia and North America. Another basic line variation involves wrapping hair around parallel lines of stitching (see Figure 6d). A meander arrangement with a parallel line of stitching is the desired result. According to Turner (1976), this stitch variation is found among embroideries from Siberia and Far Eastern Russia (p. 31).

The following series of variations consist of hair embroidery stitches with a non-continuous line of couching. The first variation is the 'petal' stitch, which involves stitching the hair at the centre and looping it back around to be held with both ends together (Turner, 1976, p. 32) (see Figure 6e). The hair is fanned out to create a round petal shape. I found this stitch among eastern Canadian, particularly Huron, embroideries. A variation of the petal stitch is the 'bud' stitch. The bud stitch represents a "swelling at the end

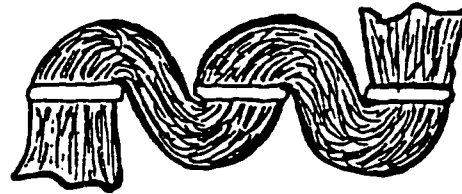
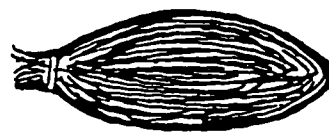


Figure 6d. Wound hair around straight couching stitches (illustrated from Turner, 1976, p. 32).

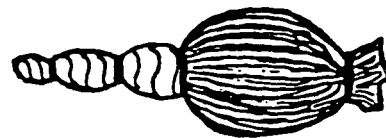


(a) full view



(b) side view

Figure 6e. 'Petal' variation (illustrated from Turner, 1976, p. 32).



(a) full view



(b) side view

Figure 6f. 'Bud' stitch variation (illustrated from Turner, 1976, p. 32).

of the stock" (Turner, p. 32). This stitch involves the petal stitch with an additional stalk which is the twisted simple line variation (see Figure 6f). The bud stitch is found among the Huron peoples of eastern Canada. Another similar embroidery stitch involves the overlapping of hair through

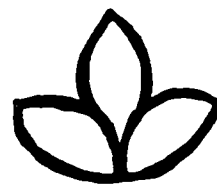


Figure 6g. overlapping hair variation (illustrated from Speck, 1911a, p.5).

stitching to form a floral motif (see Figure 6g). This stitch variation appears among eastern Canadian embroidery. The fourth stitch variation represents the bristle technique, also known as hair tufting or candlewicking (see Figure 6h). The tufting stitch involves this four step process:

(a) a loop stitch is made. (b) A bundle of hairs, 'about half the size of a little finger', is laid under the loop, and the stitch drawn tight and knotted. (c) The ends of the hairs are fanned out. This procedure is repeated as often as required to fill up the proposed figure, and the tips of the hairs are trimmed with very sharp scissors.... (d) shows the finished element (Turner, p. 32-33).

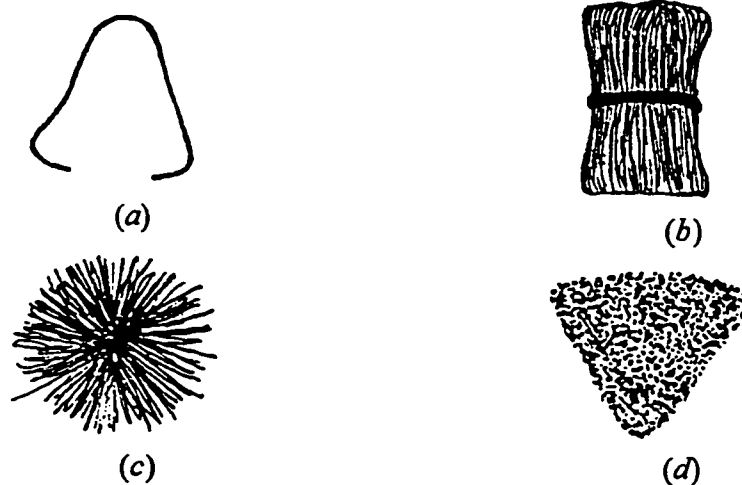


Figure 6h. The bristle, candlewicking, or tufting stitch variation; (a) loop stitch, (b) inserted hairs, (c) tightened stitch, (d) completed and trimmed (birds-eye view) (illustrated from Turner, 1976, p. 32).

Hail and Duncan (1989) suggest that moose and caribou tufting is a "new Athapaskan art form that came into existence shortly after the first World War among the Slavey of Fort Providence in Northwest Territories" (p. 250). Owing to the resource scarcity caused by World War I, Mrs. Boniface Laferte (Lafferty) imitated wool punch work with moose hair to form the tufting technique (Hail & Duncan, p. 250). Prior to World War I, however, Speck (1911a) studied the Huron bristle embroidery technique which is identical to the tufting of hair associated with the Northwest Territories (p. 5). Speck's reference to tufting predates the tufting theory formulated by Hail and Duncan. Turner (1976) suggests that modern hair tufting represents a reintroduction by Lafferty as opposed to a new innovation (p. 53). Hail and Duncan suggest that c. 1960 there was a resurgence of tufting; this embroidery variation maintains current popularity in the Northwest Territories (p. 253). Steinbright (1992) reports that Selina Bifelt Alexander from Huslia, Alaska is responsible for recently introducing caribou hair tufting into the Alaskan interior (p. H-11).

The next variation involves a continuous line of embroidery which involves "wrapping four or five hairs, laid side by side, to and fro between parallel lines of stitching" (Turner, 1976, p. 33) (see Figure 6i). I found that the crisscross stitch variation is indigenous to hair embroidery from Far Eastern Russia and Alaska. The most prominent stitch on hair embroidery from St. Lawrence Island is the variation which involves a crisscross stitch. The Beringian embroiderers incorporate the crisscross stitch with a twisted line stitch to create different widths and embroidery appearances. The combination of embroidery stitches are illustrated in

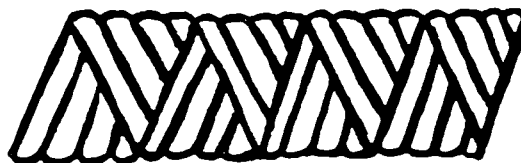


Figure 6i. Crisscrossed hair variation (illustrated from Turner, 1976, p. 33).

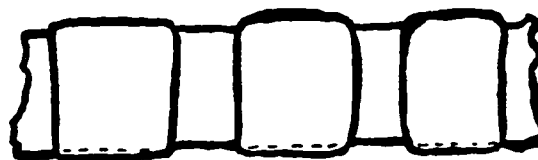


Figure 6j. Coiling hair variation (illustrated from Turner, 1976, p. 34).

these artifacts (UA 64.21.136, UA 64.21.139, UA 64.21.859, & SJM II.N.20) (see Appendix D).

The following variations on embroidery stitches involve wrapping hair or filler around a core. The first variation includes a core on which a single hair is looped and alternately caught under a stitch for attachment onto the garment (see Figure 6j). This core technique often involves the use of hair and quill together. Turner (1976) states that this core variation is found on Kutchin and Cree hair embroidery (p. 33). Another similar coiling technique represents a border stitch. This border stitch includes a thong filler on which hair is arranged and stitched to the skin to form a border (see Figure 6k). The next stitch variation involves a cut-out skin pattern on which two hairs are wrapped around the core to create a design. The two hairs are twisted and laid over one another, each passing over and under a series of securing stitches used to attach the ornamentation to the base substance (see Figure 6l). The finished piece has an appearance similar to that of braiding. Turner suggests that the overall stitch appearance resembles skin appliqué from

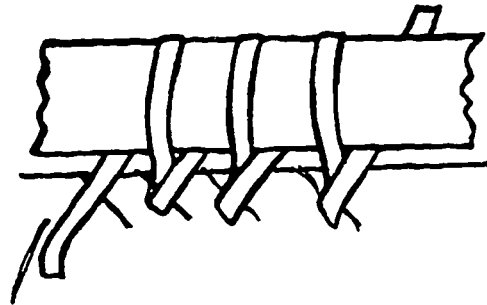


Figure 6k. Core border variation (illustrated from Turner, 1976, p. 34).

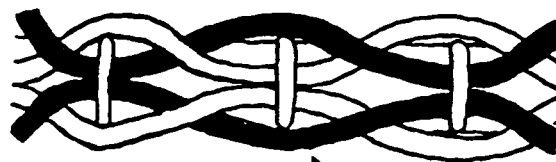


Figure 6l. Two twisted hairs applied onto a skin strip (illustrated from Turner, 1976, p. 34).



(a) front view



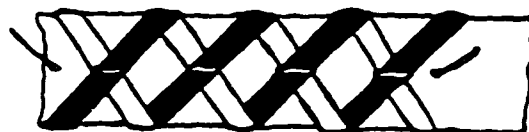
(b) back view

Figure 6m. Braided single hair forming a crisscross design (illustrated from Turner, 1976, p. 35).

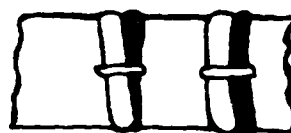
Far Eastern Russia and Siberia (p. 35).

Turner (1976) attributes the skin pattern and reindeer hair technique to the Sakhalin region of Siberia (p. 34).

The following series of variations in hair embroidery stitches are found among Aleut embroideries. These stitch variations included the decoration of skin strips with hair embroidery. In one variation, two hair are braided onto a sealskin strip to form a crisscross effect on the face with parallel hair on the underside (see



(a) front view



(b) back view

Figure 6n. Single hair crisscrossed and centre stitched (illustrated from Turner, 1976, p. 36).

Figure 6m). The hair is attached onto the strip through braiding to eliminate the need for stitching. This edge variation is attached to the garment with perpendicular stitches between and beneath the hair (Turner, 1976, p. 36). The second variation in strip embellishment involves a simplified detail of braiding, shown in the previous technique, where two hairs are stitched at the centre to form a geometric motif (see Figure 6n). The face of this variation forms an X-shaped motif with centre stitching. The centre stitching line attaches the embroidery to the skin strip and garment itself. The general appearance of the embroidery resembles an Alaskan Yuit stitch which is either attached to a skin strip or to the

garment itself. Another strip embellishment technique involves wrapping two hairs around a strip of skin and attaching the hair at centre front. The hair forms a geometric motif by altering the direction of the hair once it is stitched at centre front (see Figure

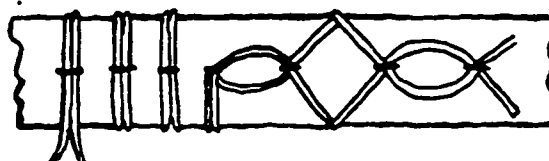


Figure 6o. Hair wound around a band with centre stitching to form a motif (illustrated from Turner, 1976, p. 36).

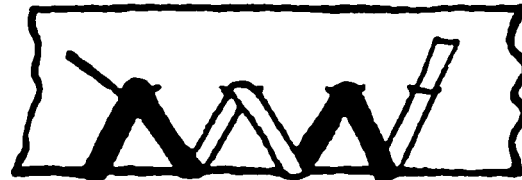
6o). Turner describes this process:

the forth outer stitch ... are carried horizontally to the fifth, passing through it

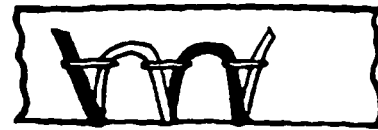
in opposite directions and continuing obliquely to the edges. Thence each hair runs vertically under the band to the opposite edge, to continue at an angle to the sixth stitch, thus completing a hollow diamond (p. 36).

This variation appears to resemble an embroidery stitch found on Yuit artifacts in Alaska. The Yuit stitch differs, in that, the hair is applied directly onto the artifact without a strip of skin. The next Aleut strip embellishment represents an edging technique involving two single hair which form inverted triangles that alternate. The hair is then secured with centre stitching (see Figure 6p). The Aleut edge technique resembles the embroidery stitch found on embroideries from Far Eastern Russia, Alaska, and eastern Canada. The last Aleut stitch involves stitching three to five hairs closely together to form a continuous line of edge stitching (see Figure 6q). This stitch runs over the edge to attach on the underside in the same manner as on the face.

Another variation of hair embroidery stitches involves two strands of hair which alternate above and below the centre line to form circles in a continuous line (see Figure 6r). I located this circular stitch variation on



(a) front view



(b) back view

Figure 6p. Edge variation forming an inverted triangle (illustrated from Turner, 1976, p. 37).



Figure 6q. Edge variation with identical stitching on both sides (illustrated from Turner, 1976, p. 37).

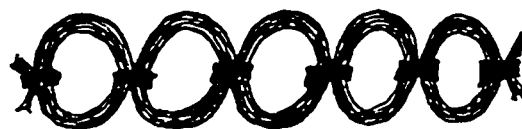


Figure 6r. Circle variation with modified meander stitch.

embroidery from Far Eastern Russia, for example on artifact (II.N.92a&b). The next stitch variation involves folding the hair to form an inverted 'V'. The hair is laid diagonally on the surface and secured with a stitch; the variation is then repeated to finish the stitch (see Figure 6s). This technique resembles an Alaskan Yuit from the Yukon-Kuskokwim Delta and Aleut variation of the embroidery stitch. Another simple line variation is the drawn-out or elongated meander stitch (see Figure 6t). This modified meander stitch is found on Aleut embroideries. The next embroidery stitch found on embroideries from the Aleutians and the Yukon-Kuskokwim Delta involves a free standing chevron motif (see Figure 6u). The Aleut employ an embroidery stitch which involves twisting a bundle of hair once while couching it onto the artifact (see Figure 6v). The last stitch variation for hair embroidery involves a hair which is attached in the centre and looped to extend above the strip (see Figure 6w). I found this stitch to be indigenous to hair embroideries from the Russian Far East.



Figure 6s. Diagonal hair stitched to form V-shaped motif.



Figure 6t. Modified meander stitch with elongated curves.

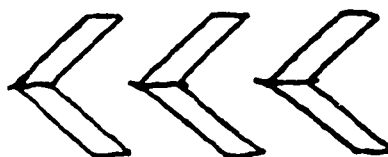


Figure 6u. Variation representing a chevron motif.



Figure 6v. Linear variation with several hair secured to the base (illustrated from Turner, 1976, p. 37).

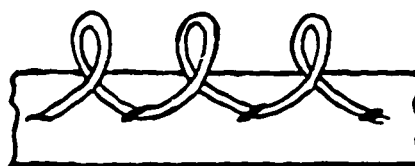


Figure 6w. Strip variation with hair looped with centre stitching.

Hair preferred for embroidery is lengthy and should be capable of being folded, flattened, or creased to conceal the stitching thread. Ideally, hair used in embroidery must possess near elastic properties, much like porcupine quills. Turner (1976) states that the process of dyeing involves steeping the hair in hot infusions of roots, berries, flowers, bark, or moss (p. 29). This entire process resembles the process of dyeing quills as described by Ochar (1916, p. 7-9). Once dyed, the hair is kept in small bundles which are categorized according to colour. Turner states that the hair is moistened before its use to increase the tensile strength and prevent slipping during the trimming process (p. 29)

In my opinion, the occurrence of dyed embroidery hair is subject to regional constraints. The dyeing of hair appears more prominent in embroidery from eastern North America, as opposed to St. Lawrence Island, Alaska. Artifacts with hair embroidery found on St. Lawrence Island use undyed hair from the ruff of the reindeer. Colour is added to St. Lawrence Island embroideries through the use of cotton thread. The use of cotton thread to add colour to embroidery is discussed in detail below.

Traditionally, the tools used in hair embroidery included an awl, needle, and sinew thread (Turner, 1976, p. 30). Apasingok et al. (1985) describes sinew as being: first stripped to the desired thickness, then twisted to the desired length, always keeping the end of each piece narrower than the rest so that additional lengths can be added or so it can be threaded through the eye of a needle" (p. 97). Traditional sinew thread has been replaced by waxed nylon thread for use in hair embroidery (Steinbright, 1992, p. H-10).

St. Lawrence Island Stitches

Vivian Iyakiten (personal communication, January, 1994) states that the crisscross stitch variation was taught in high school, during which she learned to embroider with hair. This stitch involved wrapping the hair to and fro between parallel lines of stitching to create the crisscross effect (see Figure 6i). Vivian explains that the crisscross technique has six steps which include: (1) secure the hair

in place; (2) start on the left side of the hair; (3) wrap the thread or sinew under the hair; (4) on the right side of the hair take a tiny stitch near the previous stitch; (5) make sure the needle goes under thread and hair; (6) as the needle is pulled bring hair and thread down towards the stitch positioning the thread where the stitch is wanted (see Figure 7). On the surface, the stitch appears to represent braiding or crisscross design. According to Vivian Iyakiten (personal communication, January, 1994), the appearance of the stitch on the underside resembles an 'X'. A good embroiderer will count the number of hair used to maintain the same width throughout the detail (Nancy Walunga, personal communication, January, 1994).

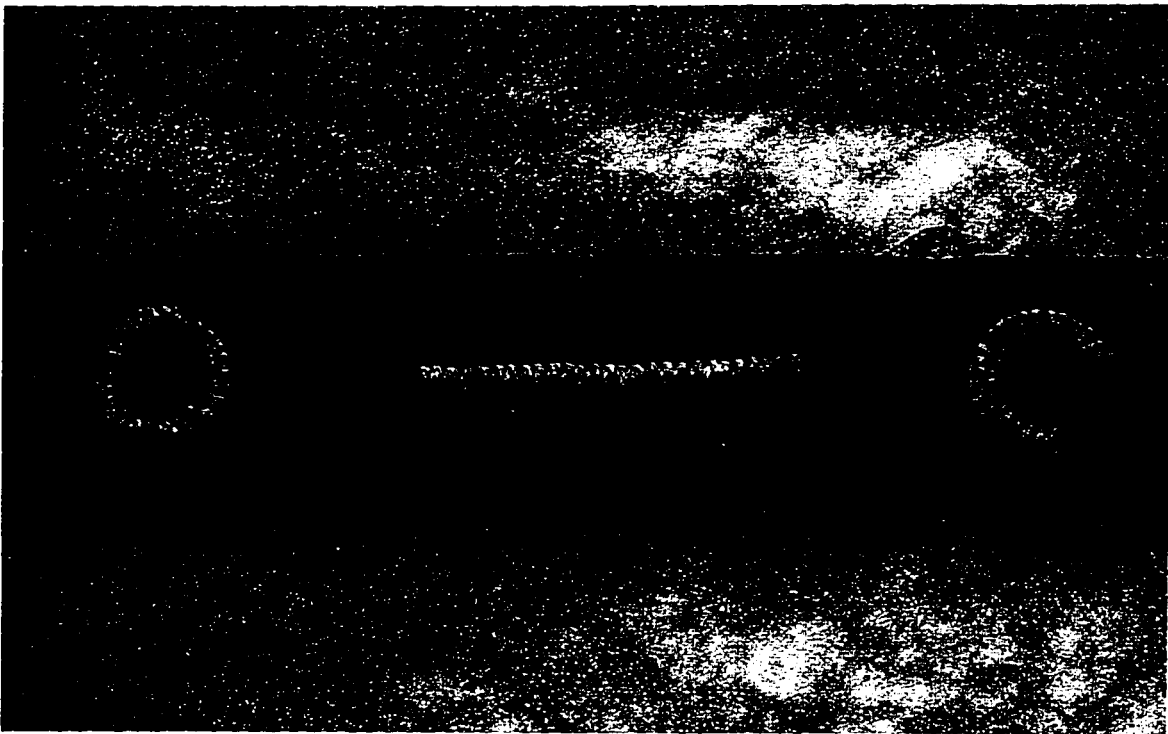


Figure 7. Example of the crisscross stitch technique "used as a show and tell piece of what they used to do" from St. Lawrence Island by Lucile Kaazaata c. 1973 (Dennis Corrington, personal communication, January 1995).

St. Lawrence Island Embroidery

Before the crisscross technique was brought to St. Lawrence Island, hair embroidery was applied onto the skin using sinew (Vivian Iyakiten, personal communication, January, 1994). On St. Lawrence Island, sinew was used to secure the hair embroidery until cotton thread became available as a result of non-indigenous contact. I found that both thread and sinew was used in hair embroideries from St. Lawrence Island. According to Vivian Iyakiten (personal communication, January, 1994), white reindeer hair was used in the embroideries on St. Lawrence Island. Colour, therefore, was added through cotton thread used either as a substitute for hair or couching thread.

Hair embroidery from St. Lawrence Island is applied onto thick skin with the needle penetrating partially through in order to preserve the water proof quality of the skin (Vivian Iyakiten, personal communication, January, 1994). For the base of her embroidery, Vivian Iyakiten (personal communication, January, 1994) prefers thick skin over European textiles. She believes that the quality of hair embroidery on skin exceeds the quality on textiles and maintains a taut, clean stitch. This point is illustrated through a comparison of two Yuit artifacts (UA 610.M.5917 & UA 610.5918) from the Yukon-Kuskokwim Delta (see Figure 8). Both artifacts were collected in southwestern Alaska, within the same decade, by Lola Albright Heron and John Albright (see Appendix D). The tobacco pouch (UA 610.M.5918) was embroidered on a textile as opposed to skin. When comparing the tobacco pouch (UA 610.M.5918) to the salmon skin bag (UA 610.5917), I found that skin holds the embroidery stitch in a cleaner and more stable manner. By analyzing the attributes of hair embroidery artifacts, I can derive information to assist in advancing the knowledge of indigenous hair embroidery.

Hair Embroidery Artifact Discussion

Artifacts decorated with hair embroidery at the University of Alaska Fairbanks Museum include hunting belts, pouches or bags, and trim found on parkas. Types of artifacts with hair embroidery at the Sheldon Jackson Museum include boots, mittens,

pouches, housewives; other artifacts with hair embroidery include a belt, parka, and quiver. These artifacts represent a wide geographic region which encompass Far Eastern Russia, the Lower Yukon-Kuskokwim Delta, St. Lawrence Island, and unknown regions (see Appendix D & E). I have analyzed hair embroidery artifacts according to technical similarities, use of colour, design similarities, presence of other embellishment forms, European influences, and artifact uses.

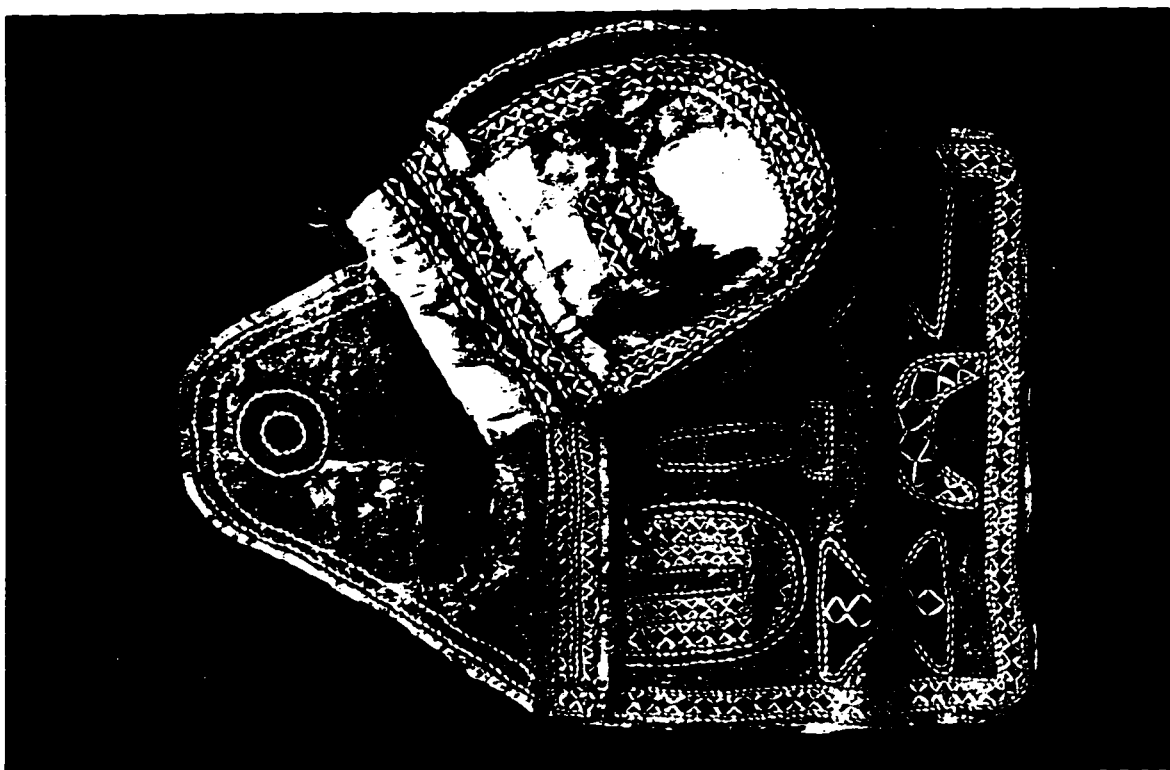


Figure 8. Artifacts (UA 610.5917 & UA 610.M.5918) illustrate the appearance of hair embroidery on skin and textile surfaces.

Technical Similarities

The technical aspects of hair embroidery from Far Eastern Russia and St. Lawrence Island are almost identical. The stitch variations on St. Lawrence Island hair embroideries include the simple line, twisted simple line, and crisscross techniques

(see Figures 6a, 6c, & 6i). These three stitch variations found on St. Lawrence Island are also found in the Russian Far East. Yet, hair embroidery from the Russian Far East features a wider stitch repertoire than embroidery from St. Lawrence Island. For instance, footwear from Far Eastern Russia, artifacts (SJM II.N.92a&b), are embellished with a stitch variation which is uncommon in St. Lawrence Island embroideries (see Figure 6r) (see Appendix D).

Hair embroidery from the Yukon-Kuskokwim Delta appears similar to Aleut embroidery. The Yuit from the Yukon-Kuskokwim Delta reside in close proximity to the Aleuts (see Appendix E). I contend that a system of shared knowledge, which includes hair embroidery, may have resulted from contact between these neighbouring communities. Artifacts (UA 610.5917, UA 610.M.5918, & UA 610.5920) represent stitch variations which are indigenous to hair embroidery from the Yukon-Kuskokwim Delta (see Appendix D). The University of Alaska Museum and the Sheldon Jackson Museum collections house limited examples of hair embroidery from the Aleutians. However, Varjola (1990) presents examples of Aleut hair embroidery which illustrate the stitch variations indigenous to that particular region. Aleut and the Yukon-Kuskokwim Delta Yuit embroideries represent variations which create V-shaped and X-shaped stitches. I suggest that the Aleut maintained extensive contact with the Yuit from the Yukon-Kuskokwim Delta. The crisscross stitch variation (Figure 6i) is rarely used on artifacts with hair embroidery from the Yukon-Kuskokwim Delta. However, this crisscross stitch often occurs among embroideries from St. Lawrence Island and Far Eastern Russia. The stitch variations from St. Lawrence Island and Far Eastern Russia further suggests that commonalities in hair embroidery exists between neighbouring communities.

When an embellishment technique becomes popular within a culture, I would expect experimentation to occur. Any experimentation with the embroidery stitches among the St. Lawrence Island Yuit appears insignificant and essentially nonexistent. The three variations in embroidery stitches found on St. Lawrence Island are technically advanced, however; these artifacts exhibit few indications of development in alternative stitch variations. St. Lawrence Island embroiderers maintain their

creative diversity through the use of colour thread.

Use of Colour

After European contact, cotton embroidery thread was used to embellish material culture throughout the Beringian region. With the introduction of cotton thread, came the opportunity to provide colour in regions where the natural appearance of the hair was utilized. Cotton thread of various colours, as opposed to dyed hair, was used to provide colour in Yuit hair embroidery. Unlike the Yuit, hair embroiderers throughout eastern Canada, the Northwest Territories, and the Aleutians apply dye to hair, intestine, and skin for colour embellishment.

Embroiderers from Far Eastern Russia and St. Lawrence Island employ similar uses for colour thread. A quiver (SJM II.N.20) and belt (SJM II.N.31) from Far Eastern Russia rely on thread to provide colour accent. Similarly, the artifacts (UA 64.21.136, UA 64.21.137, UA 64.21.139, & UA 64.21.859) from St. Lawrence Island utilize colour thread in hair embroidery (see Appendix D). At times, various colours of thread have been incorporated into the crisscross hair embroidery stitch. In doing so, the embroiderer combines thread and hair into the initial stitch, as represented in Far Eastern Russian and St. Lawrence Island Yuit hair embroidery. In Kaplan (1974), Koryak footwear dated c. 1930 illustrates the combination of hair and thread into the embroidery stitch (p. 41) (see Figure 5). Artifacts (UA 64.21.136, UA 64.21.137, & UA 64.21.139) from St. Lawrence Island combine hair and cotton thread in a technique identical to the Koryak motif in Figure 5 (see Appendix D). Another method used to incorporate colour into hair embroidery involves alternating hair and thread every few stitches through the motif. The quiver (SJM II.N.20) from Far Eastern Russia and belt (UA 64.21.137) from St. Lawrence Island used the alternate thread and hair every few embroidery stitches (see Appendix D).

Artifacts with hair embroidery from St. Lawrence Island are embellished with analogous colours of cotton thread. Popular colours of embroidery thread on St. Lawrence Island include: red (UA 64.21.136, UA 64.21.137, UA 64.21.139, & UA 64.21.859); green (UA 64.21.136, UA 64.21.139, & UA 64.21.859); tan (UA

64.21.137, & UA 64.21.859); and blue (UA 64.21.859) (see Appendix D). In my opinion, these commonalities indicate either access to similar supplies or that the artifacts were embroidered by the same women. Artifacts at the Sheldon Jackson Museum were embroidered using similar colours of cotton thread. The popular colours of embroidery thread include: red (SJM II.H.28, SJM II.X.747, SJM II.N.20, & SJM II.N.31b); tan (SJM II.H.28, SJM II.N.20, & SJM II.N.31b); and blue (SJM II.B.78, SJM II.N.20, & SJM II.N.31b) (see Appendix D). These artifacts originate in either Far Eastern Russia or the Yukon-Kuskokwim Delta. The Yuit from the Yukon-Kuskokwim Delta chose textiles which correspond to the colours found in embroidery thread throughout Far Eastern Russia and St. Lawrence Island. The corresponding choice in colour indicates a possible similarity in aesthetic values among Far Eastern Russians and the St. Lawrence Island Yuit. I believe that more extensive research is needed to construct a further correlation between colour selection in Far Eastern Russia and Alaska.

An analysis of colour selection may assist in identifying the provenance for unknown artifacts in museum collections. One extremely interesting artifact of unknown origin is a gut (?) pouch (UA 67.98.133) (see Figure 9). The artifact is embellished using gut (?) strips dyed red, green, and black with white hair embroidery applied onto the strips. After analysis of colour and style, I would classify the pouch (UA 67.98.133) as Aleut as opposed to Yuit. According to Black (1982), the Aleut dye bands "(black, red, blue of several shades, dark and light green, yellow, orange, and white)" for embellishment purposes (p. 159). Turner (1976) suggests that hair embroidery was placed on the strips of intestines without completely hiding the bands (p. 35). Many examples of Yuit hair embroidery from the Yukon-Kuskokwim Delta use undyed strips of skin, whereas Aleut embroidery is often embellished with dyed strips of skin. For example, this Yuit housewife (SJM II.B.78) from the Yukon-Kuskokwim Delta illustrates the use of undyed strips on which hair embroidery is applied (see Appendix D). Aleut and Yukon-Kuskokwim Delta Yuit hair embroidery is similar, therefore an accurate distinction of provenance is unlikely without further study.

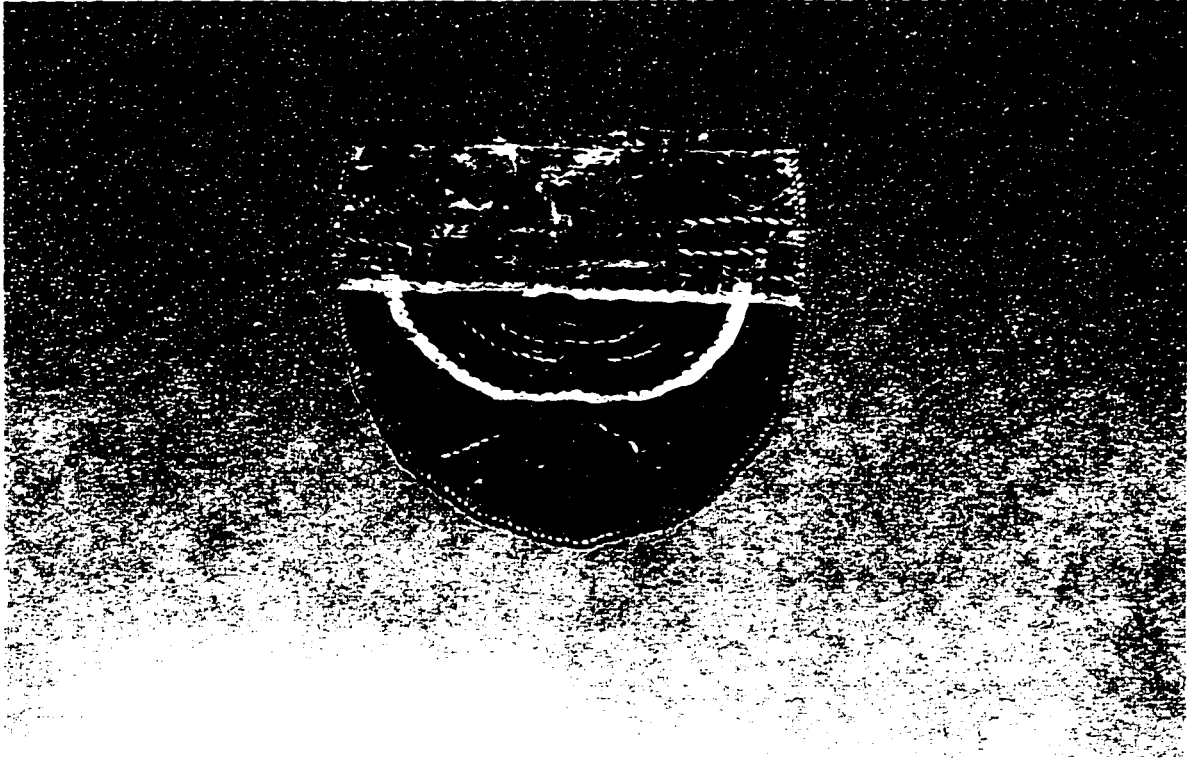


Figure 9. Artifact (UA 67.98.133), an example of a pouch, possibly of Aleut provenance embellished with dyed gut (?) strips and hair embroidery (photo credit Michelle Zerwig).

Design Similarities

Along with similarities in colour, artifacts from the trans-Beringian region also display commonalities in embroidery motifs. The popular tongue motif, discussed by Ivanov (1963, p. 24), occurs on artifacts (UA 610.5917, UA 610.M.5918, UA 610.5920, SJM II.H.28, SJM II.H.79, & SJM II.B.78) from the Yukon-Kuskokwim Delta. The entire design of these artifacts is based on the general tongue motif (see Figure 3). Artifacts with hair embroidery from St. Lawrence Island (UA 64.21.136, UA 64.21.137, & UA 64.21.139) and artifacts from Far Eastern Russia (SJM II.N.20 & SJM II.N.31a&b) also display characteristics of the tongue motif (see Appendix D).

Another common design motif throughout Far Eastern Russia and Alaska is a series of circles within a circle. I found the circular design element on artifacts (UA 64.21.136, UA 64.21.137, & UA 64.21.859) from St. Lawrence Island. Similar designs were found on a quiver (SJM IL.N.20) from Far Eastern Russia (see Appendix D).

Artifacts from St. Lawrence Island resemble one another through similarities in motif and embroidery width. These artifacts have similar motifs which feature: stars (UA 64.21.136 & UA 64.21.139), triangles (UA 64.21.136 & UA 64.21.137) and stylized floral motifs (UA 64.21.137, UA 64.21.139, & UA 64.21.859) (see Appendix D). Along with similarities in motifs, artifacts (UA 64.21.136, UA 64.21.137, UA 64.21.139, & UA 64.21.859) exhibit identical embroidery widths. These four artifacts were collected c. 1927 by Otto William Geist on St. Lawrence Island. In my opinion, the similarities in width, colour, and date of origin suggest that one woman from St. Lawrence Island produced all four artifacts.

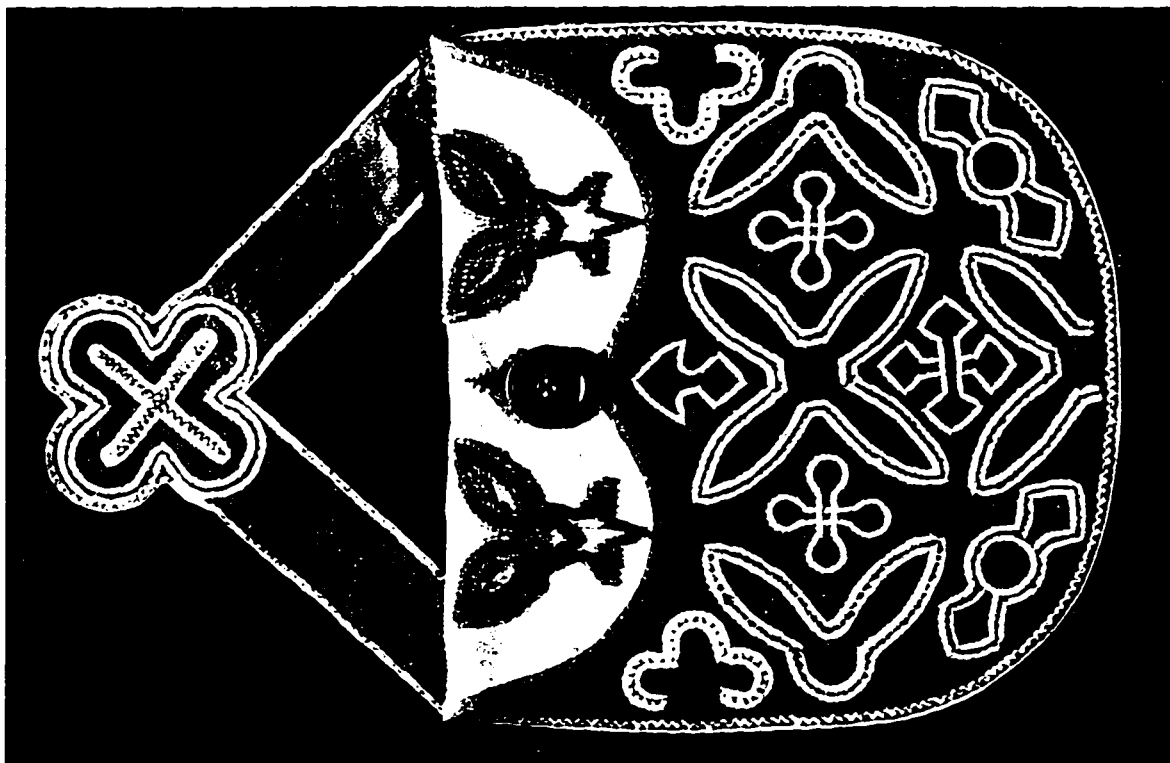


Figure 10. Artifact (UA 64.21.139), an example of St. Lawrence Island Yuit use of colour in their hair embroideries.

A 'rabbit ear' motif featured on a St. Lawrence Island pouch (UA 64.21.139) is similar to the Koryak motif found in figure 5 (see Figure 10) (see Appendix D). These design motifs were embroidered within the same decade; the pouch dates c. 1927 and the briefcase dates c. 1920/1930's. Scholars believe that embroidery motifs represent popular societal themes. I found that the similarity of these motifs, which were contemporaries of one another, suggests a level of exchange among trans-Beringian cultures. Interpreting indigenous motifs is problematic owing to the limited amount of information which addresses the cosmological meanings associated with traditional and popular motifs. Further research is essential to determine whether motifs exhibit a profound symbolic meaning. The recurrence of motifs throughout the Beringian region raise enough question to warrant a further investigation.

Combined Modes of Embellishment

I found that the appearance of hair embroidery reflects which resources were available, both organic and inorganic, to the embroiderers. The combination of beading and embroidery on artifact (UA 64.21.139) may reflect personal choices or preferences which represent which materials were available, colour aesthetics, and the evolution of embroidery (see Appendix D). The front portion of the pouch is embellished with hair embroidery, whereas the back and flap are embellished using commercial beads. Manufactured beads became available through Euro-American contact with Russian traders, whaling vessels, researchers, and missionaries. These beads were perhaps incorporated into the pouch design to lend stability to the embellishment. Beading which is securely fastened can sustain constant abrasion over a longer period of time than hair. By its very nature, hair can undergo only limited abrasion before showing signs of wear. Dinah Larsen, the Coordinator of Ethnology at the University of Alaska Museum (personal communication, January, 1994) states that hair becomes abraded when objects rub against it, therefore making hair impractical for the back of a pouch intended for a belt. In my opinion, limited resources may influence the application of certain embellishment techniques. The supply of reindeer hair in Gambell was inconsistent, owing to a variety of possible factors which include

the concentration of reindeer in Savoonga, permit hunting, and fluctuations in herd size. It is possible that the scarcity of hair resources began to force embroiderers to decorate with beading.

The choice of beading when incorporated with hair embroidery may reflect the embroiderers preference for a colour contrast. The front of the pouch consists of tanned sealskin while the back and flap are made from bleached sealskin. The white reindeer hair provides a contrast with the dark sealskin to appear more visible, whereas white hair would presumably blend into the bleached sealskin. Through artifact analysis, I determined that the motifs were sketched onto the artifact before the embroiderer applied the embellishment. These markings suggest an innate sense of symmetry, presumably coupled with a desire for aesthetics. I suggest that the contrasting background and varying mode of embellishment enables the maker to satisfy an unconscious need for aesthetic contrast.

The choice of beading in conjunction with hair embroidery may represent a transition between traditional and modern techniques of embellishment. Chaussonnet (1988) suggests that hair embroidery was "replaced by or combined with beadwork, as soon as colored glass beads became available through trade" (p. 221). In the late 1920's, beading may have taken on new dimensions with an increase in Euro-American influences on St. Lawrence Island. In my opinion, the quality of hair embroidery, in comparison to that of beading, supports the theory of modernization. The quality of hair embroidery exceeds that of beadwork which indicates that beading may represent the newer technique on St. Lawrence Island.

European Influences

Indigenous material culture began to reflect Euro-American influences as contact between whalers and Alaskan indigenous peoples began to increase. This transition is apparent through the analysis of artifacts which represent the period before and after non-indigenous contact. According to Cremeans (1930), the belts from St. Lawrence Island were intended as charm belts used to secure the inner parka (p. 9). Ideally, charm belts would ward off evil spirits and bring good fortune to hunters.

Amulets such as beads, walrus teeth, and leather pieces were attached to charm belts. Tools such as a "hunting knife in its sheath, a sharpening stone, a tobacco pouch, and a shell bag" were also attached onto the belts (Cremeans, 1930, p. 9). The embroidered hunting belts included in my study represent those described by Cremeans.

The belts with hair embroidery, at the University of Alaska Museum, reflect influences from Euro-American contact; whereas, the belt with embroidery at the Sheldon Jackson Museum represents the functional and unaltered version of the hunting belt. The Siberian belt (SJM II.N.31a&b) and two Yuit belts (UA 64.21.136 & UA 64.21.137) were designed as hunting belts with pouches to carry bullets, powder, and tobacco. The Siberian belt dates c. 1890, thus predating the St. Lawrence Island belts which date c. 1927. The Siberian and St. Lawrence Island belts exhibit the same general design with different buckles. The buckle on the Siberian belt consists of a metal disc which fastens through a slit on the other side, whereas the St. Lawrence Island belts have a European style of buckle which is fashioned out of ivory (see Appendix D).

In my opinion, Euro-American influence is apparent through the appearance of trade beads on artifacts such as (UA 64.21.136 & UA 64.21.137). Trade beads became an extremely valuable commodity among the Yuit during early European contact. Certain Yuit individuals equated trade beads with wealth; such individuals frequently utilized their beads in the ornamentation of material culture (Chaussonnet, 1991, p. 20). Artifacts with hair embroidery represent numerous European influences, one basic influence is cotton thread. The use of cotton thread may be a result of Euro-American contact or trade with indigenous peoples who maintained prior outside contact. Outside contact is evident through the occurrence of manufactured items such as buttons and implements used for sewing. A pouch, artifact (UA 64.21.139), from St. Lawrence Island contains a brown plastic (?) button, cotton thread, textiles, and manufactured seed beads, all characteristic of indigenous material culture post Euro-American contact. Contact with non-indigenous peoples, in my opinion, has altered the appearance and function of material culture items within traditional societies.

Artifact Uses

Prior to Euro-American contact, the functional aspect of material culture was important to the survival of indigenous groups who reside in the circumpolar north. The functional requirement associated with material culture began to decline when manufactured goods became available. I believe that many early twentieth century artifacts represent the transition between subsistence and modernization. For example, artifact (UA 64.21.139), a pouch from St. Lawrence Island, represents a non-practical and aesthetic version of a once functional style. Traditionally, this pouch would have been worn on a belt, however the modification renders the pouch unsuitable for a belt (Dinah Larsen, personal communication, January, 1994). I found that the amount of hair embroidery in conjunction with beading indicates that the maker intended the pouch for trade or personal gift. As Euro-American influences evolved, the St. Lawrence Island Yuit modified the functional aspect of their material culture to appeal to the non-indigenous market. The St. Lawrence Island hair embroidered belt (UA 64.21.859) lacks buckle holes (see Appendix D). This ornate hunting belt has a European style buckle made of ivory without holes punched for the buckle, therefore the belt was possibly produced for the aesthetic value as opposed to a utilitarian function. The artifacts from the Yukon-Kuskokwim Delta possess more utilitarian qualities. Two tobacco pouches (UA 610.M.5918 & UA 610.5920) display signs of actual use, thus indicating a functional design (See Appendix D). These pouches are similar in size and use of bright cotton yarn along with hair for embellishment.

Factors Influencing Hair Embroidery Decisions

I have determined that the decision making processes relating to hair embroidery are complex. The conscious choice to embroider may depend upon cultural contact, availability of resources, and influences which result from Euro-American contact. The wide demographic distribution of hair embroidery suggests exposure to various embroidery techniques which are dependant upon cultural contact. Without the sharing of cultural knowledge, hair embroidery techniques may have maintained a separate and distinct appearance.

The similarities in northern stitch variations suggest a sharing of knowledge which impacts upon the decision making process. An investigation into the material culture from St. Lawrence Island suggests evidence of shared embroidery knowledge with Far Eastern Russia. Through this experience, I determined that the St. Lawrence Island Yuit encountered hair embroidery techniques through cultural contact with Far Eastern Russia. St. Lawrence Island stitch techniques include those variations found throughout the embroideries of Far Eastern Russia. I found that cultural influences enhance and bias the decision to include hair embroidery as embellishment on St. Lawrence Island. However, the stitch variations indigenous to eastern Canada (i.e. hair tufting) are absent from St. Lawrence Island Yuit embroideries. Had significant contact between eastern Canada and St. Lawrence Island occurred, I believe that the decision to adopt embroidery techniques from Far Eastern Russia may have altered. Gauging the extent of the indigenous exchange of knowledge, regarding hair embroidery, is difficult and purely speculative. However, the absence of St. Lawrence Island and eastern Canadian embroidery similarities suggests that cultural contact was non-existent. The decision to employ hair embroidery for embellishment reflects more than cultural exchange; it reflects resource availability.

The availability of an immediate and continual supply of hair on St. Lawrence Island may influence the decision to embroider. Embroiderers on St. Lawrence Island prefer to employ hair acquired from the ruff of the reindeer, making a small percentage of hair suitable in length and pigmentation. The apparent difficulty of acquiring a constant supply of hair experienced by Gambell women may have increased the decline of hair embroidery on St. Lawrence Island. Determining the causal factors in regard to the absence of reindeer hair is difficult without extensive research and extraneous to the focus of this project.

The decline of participation in hair embroidery evolved through either a conscious or unconscious decision to discontinue embroidery. I found that hair embroidery was effected in a negative manner by the introduction of select Euro-American goods (i.e. seed beads) and influences (i.e. non-utilitarian styles). The unconscious decision to discontinue hair embroidery may have evolved through the

introduction of exotic influences. The communication breakdown as a result of the cold war perhaps became influential in the choice to abandon the production of hair embroidery on St. Lawrence Island.

Euro-American influences and manufactured goods altered the face of hair embroidery by introducing commodities such as cotton thread, beads, and plastic buttons. The decision to incorporate outside goods into indigenous material culture (i.e. hair embroidery) seemed natural. One could only expect that Euro-American goods would have an impact upon hair embroidery. When available, manufactured beads possibly became the embellishment of choice and began appearing in conjunction with hair embroidery on artifacts. Beading eventually appeared on artifacts as the single choice of embellishment. Current embellishment procedures taught to the youth of Savoonga include several aspects of beading (Helen Pungowiyi, personal communication, January, 1994).

Once resources become unavailable, indigenous peoples may reevaluate the significance of the embroidery to determine its role within society. I suspect that Yuit hair embroidery maintained an insignificant role within Yuit everyday life. During my evaluation of artifacts from St. Lawrence Island, I found hair embroidery to be culturally insignificant in that Yuit society. I determined cultural insignificance through the current lack of hair embroidery production and the non-functional appearance of artifacts (UA 64.21.139 & UA 64.21.859) (see Appendix D).

Role of Museums

St. Lawrence Island is known for having traditional communities, maintaining subsistence lifestyles, and continuing their Siberian Yupik language. In terms of material culture, modernization is winning out and the Yuit are adapting a western style of dress. As embellishment techniques become obsolete, museum artifacts and oral histories become important sources of information. When traditional material culture exists predominantly in the memories held by elders, I feel it is important to sustain and record the knowledge contained in that memory. The role of museums in knowledge preservation is essential to the maintenance of northern material culture.

Museum personnel must increase their understanding of ethnographic substances, namely hair embroidery, to provide complete and accurate documentations. Oral histories are effective sources of information which yield an understanding of traditional material culture. Through oral histories, oral traditions can be recorded to allow future generations insight into traditional subsistence ways of life. The education of museum personnel, regarding the identification of ethnographic materials and techniques, may also contribute to the preservation of artifact knowledge. Ethnographic artifacts include those properties susceptible to museum pest infestations. Therefore, preventive conservation practices within museum collections are extremely important in sustaining artifacts with hair embroidery.

Hair Identification

Unfortunately, researchers in North America seem to regard hair and quill embroidery as one, overlooking the possibility that quillwork may have originated from hair embroidery (Turner, 1976, p. 71). One example of this grouping can be located in the work of Feest (1980), who regards quillwork and hair embroidery as variations of one another (p. 138). Inexperienced museum personnel may find it difficult to distinguish between animal hair and porcupine quills among ethnographic artifacts. Hair and quill embroidery techniques exhibit similar attributes, therefore they require an experienced eye for an accurate assessment (Turner, p. 18).

Turner (1976) suggests that it is difficult to distinguish between porcupine quills, moose hair, and reindeer/caribou hair owing to similar structural characteristics (p. 18) (see Table 2). The surface appearance of porcupine quills, including guard hair, is smooth and waxy with a high gloss. Quills and guard hair indicate similar properties to those of moose hair. On the other hand, caribou and reindeer hair appear slightly glossy with a matt surface. The width of moose hair ranges from 0.5mm to 0.625mm, whereas the width of caribou hair is 0.6mm to 0.4mm while reindeer hair ranges from 0.6mm to 0.25mm. Porcupine quills are found to have a minimum width of 1.25mm with guard hair having a minimum width of 0.45mm (Turner, p. 21).

Table 2

Structural characteristics of Quill and Hair Fibres (Extracted from Hair embroidery of Siberia and North America (p. 24) by Turner, G., 1976, Oxford: Pitt Rivers Museum. Copyright 1976 by the Pitt Rivers Museum. Reprinted by permission).

	width	Edges	Surface	Colours	Cell pattern	Scale pattern
Moose hair	Max. 0.75 mm. Usual range 0.5 mm. to 0.625 mm.	Unbroken smooth	Smooth, low gloss	Dyed, and white in combination	Compact, rounded	Open, some straight sides
Caribou hair	0.6 mm. to 0.4 mm.	Unbroken slightly scaly	Matt or very slight gloss	Usually white but may be dyed	Rounded, less dense than moose	Tip: long, narrow, at right angles to shaft Main: open markedly curved sides
Reindeer hair	0.6 mm. to 0.25 mm.	As caribou	As caribou	Usually white, seldom dyed	As caribou	As caribou
Porcupine: quill guard hair	min. c.1.25 mm. min. c.0.45 mm.	Usually unbroken may be split	Smooth, high gloss	Dyed, and white in combination	Slightly elongated not easily seen	Very irregular in size and form; crinkled edges characteristic

Accurate hair identification, specific to individual artifacts, is provided through techniques of microscopic fibre identification. Fibre analysis, utilizing scale impressions, accurately identifies the origin of ethnographic materials. Kerr and Prince (1993) describe a fundamental three step process for creating scale impressions (p. 5). The first step requires placing a small dot of fingernail polish on a glass slide, allowing it to become tacky. Then, several hairs are pressed into the nail polish and remain in place for 10-15 minutes. The hair is removed, and the slides are placed under a microscope to be viewed. Scale impressions show a negative impression of the outer surface of the hair (see Figure 11).

Williamson (1951) describes a scale impression of moose hair as shiny with rectangular scales arranged in irregular patterns (p. 84). The scales on moose hair lie flat to the cortex (centre) of the hair. Williamson states that caribou and reindeer hair have a dull uniform arrangement of scales with a slightly irregular shape (p. 84). Turner (1976) found porcupine quills to be irregular in form, size, and arrangement

with crinkled dividing links (p. 25).

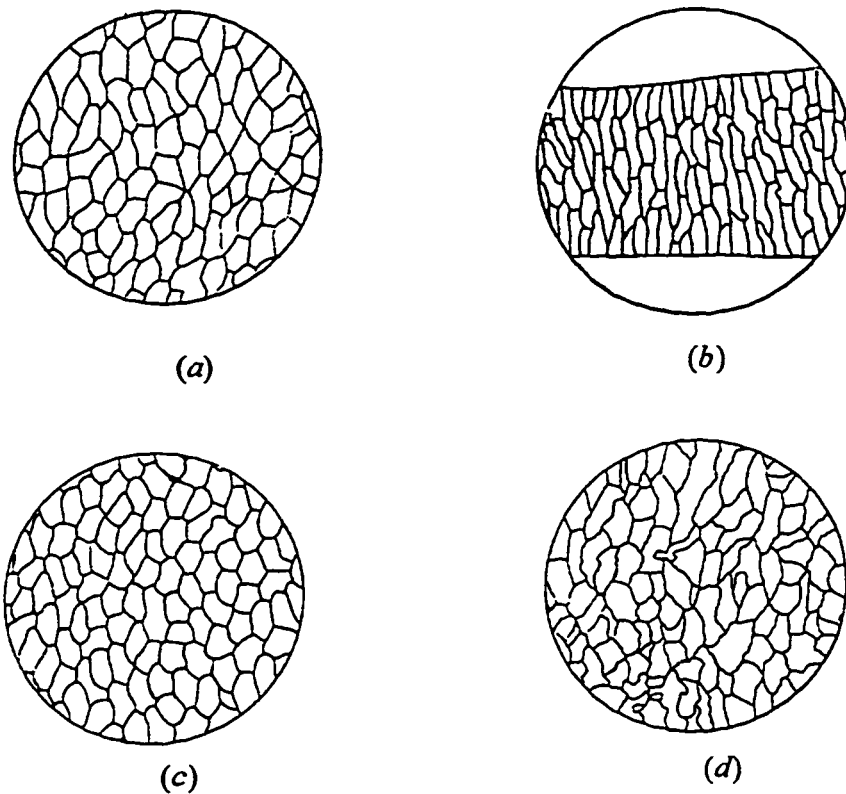


Figure 11. Scale impressions to aid in hair identification: (a) moose hair, (b) caribou/reindeer hair (tip), (c) caribou/reindeer hair (middle), and (d) porcupine quill and guard hair (From Hair embroidery of Siberia and North America (p. 24) by Turner, G., 1976, Oxford: Pitt Rivers Museum. Copyright 1976 by the Pitt Rivers Museum. Reprinted by permission).

Caribou hair are characteristically lighter and softer than moose hair (Goodfellow, 1986, p. 119). Issenman (1985) states that "the caribou's coat has two kinds of hair: an outer layer of course guard hairs and an inner layer of soft, light, dense hair" (p. 103). Goodfellow describes caribou hair as having air-filled cells which allow for excellent insulation (p. 119). Caribou and reindeer hair are characterized as being poor conductors of heat, therefore being suitable for arctic

clothing (Hatt, 1914/1969, p. 8).

An accurate distinction of porcupine quill or animal hair is important when documenting embellishment techniques on ethnographic artifacts. The natural distribution of the porcupine differs from that of reindeer and caribou making it imperative to distinguish between the individual techniques. Identifying ethnographic artifacts can be a tedious and difficult process. These ethnographic collections entail diverse organic and inorganic substances which create problematic situations regarding identification and storage of artifacts.

Reindeer hair, if taken from the 'ruff' of the animal, is completely white and appears invisible against certain backgrounds. In many instances, it takes a trained eye to locate hair embroidery. Embroidery resources, among northern ethnographic artifacts, may range from vegetable fibre to whale or reindeer sinew. Florian, Kronkright, and Norton (1990) discuss key identification techniques to distinguish between protein fibres of animal origin (p. 52-55) (see Appendix F). A detailed description on how to identify ethnographic substances is complex and beyond the scope of this project. Museum personnel must understand the limitations regarding identification and question the accuracy of the museum records when hair embroidery appears absent.

Conservation Aspects

Ethnographic artifacts create problems for museum conservators, in that, their composition is comprised of both organic and inorganic substances. Information regarding the conservation of hair is unavailable to date. Jewett, found in Whitehead (1982), discusses the conservation of porcupine quills (p. 213). Quill and hair are composed of similar keratin proteins and require comparable procedures in conservation (see Appendix G). The preservation of such substances involves an intricate knowledge of effects pertaining to artifact handling and environmental conditions within museums. The conservation of hair embroidery is critical to its future existence within museum collections. Rose (1992) suggests that the conservator must "stabilize an object and ... preserve all of the cultural and historical information it

contains, rather than only ... restore its original appearance" (p.115). Majewski (1973) suggests that a major element regarding ethnographic conservation is determining "what is significant in an object and in preserving the historical moment it represents" (p. 8). The distinction between conservation and preventive conservation is ambiguous. The choice to employ conservation procedures (i.e. cleaning, stitching, and stabilizing) depends on the extent and nature of the damage to the artifact. In my opinion, a majority of ethnographic artifacts benefit more from preventive conservation practices than actual methods of conservation such as wet cleaning and stitching.

Hair embroidery, without concern for preventive conservation may be destroyed by museum pests. Reindeer and caribou hair appears to maintain a higher susceptibility to insect infestations and destruction than tanned and semi-tanned hide. In many instances, the skin remains intact when hair embroidery has been destroyed. Artifact (SJM II.X.556) has a fraction (1/4 cm long) of hair intact after exposure to insects (see Appendix D). The couching stitches were intact, therefore I could ascertain that hair embroidery was the mode of embellishment. Unfortunately, several other artifacts with hair embroidery exhibited signs of exposure to museum pests (UA 64.21.859, UA 67.98.133, & UA 610.5920) (see Appendix D). An understanding of structural properties of hair is imperative to create successful storage and conservation treatment for artifacts embellished with hair embroidery.

Hair Structure

According to Florian et al. (1990), the structure of hair is "multicellular" with three components consisting of "the flattened outer cuticle cells, the long, many-sided, central cortical cells, and the inner network of medulla cells" (p. 54). A hair is composed of keratin which is "durable, insoluble, chemically unreactive, and suited to exposure to severe environmental conditions" (Kroschwitz, 1990, p. 505). Kroschwitz describes keratin as a "special form of fibrous protein providing protective outer animal coverings, eg, fur, wool, hair, and feathers, and external appendages, such as claws, horns, nails, and quills" (p. 505). Keratinous substances are excellent "scavengers of pollution, causing soiling and degradation" within museum collections

(Horie, 1992, p. 344). Wyatt (1983) suggests that keratin proteins, composed of a layered and cellular structure, are susceptible to delamination, peeling, and flaking within museum collections (p. 93). Good housekeeping and sound conservation tactics may ensure survival of ethnographic materials for later exhibitions and research.

Destructive Forces

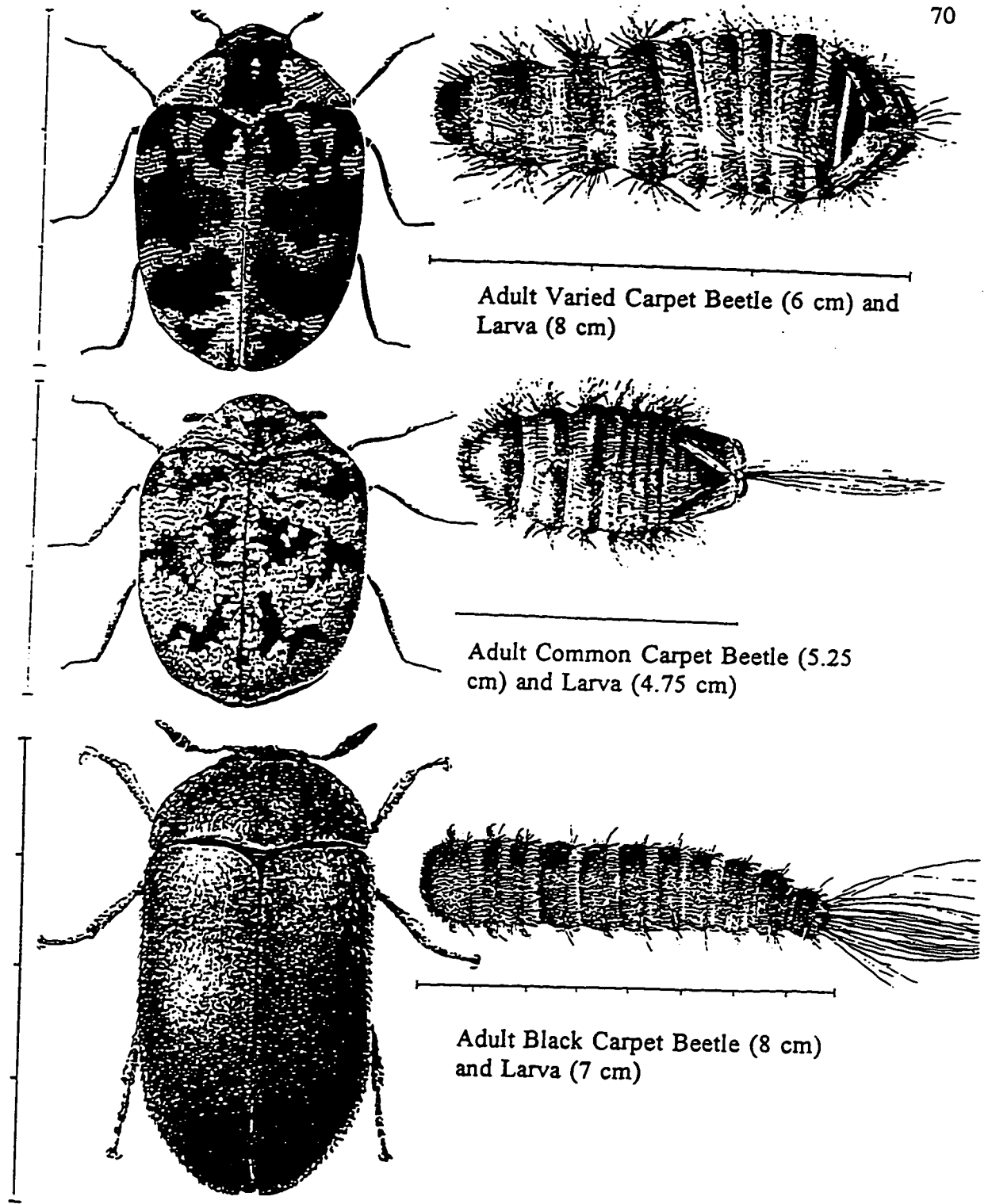
Without artifact conservation, museum collections may be decimated by insects and other known destructive forces. Peltz and Rossol (1983) suggest that without effective pest control methods the entire museum collection may suffer destruction by insects (p. 1). Effective and safe pest control include strict museum policies, routine housekeeping, and adequate artifact storage. Museum policies require regulations to prevent human error from destroying artifacts. Such policies should include: prohibiting food and drink near artifacts, proper artifact handling procedures, and protection of the artifact from dust and oils. Effective museum housekeeping procedures involve complete inspections of collections and facilities, sealing cracks and crevices, and cleaning storage and work areas. Peltz and Rossol (1983) state that even minute lint balls create potential problems within museum collections (p. 1). Lint within a museum collection is composed of fibres on which insects feed. Museum pests, once established within the collection, are difficult to control. Insect infestations spread quickly by lodging themselves in inconspicuous places that go undetected for months.

Story (1985) compiled a list of insects which are known to attack keratin, it includes: German cockroach (*Blattella germanica*), house cricket (*Acheta domesticus*), hide or leather beetle (*Dermestes maculatus*), carpet beetle (*Anthrenus scrophulariae*), webbing clothes moth (*Tineola bisselliella*), and drugstore beetle (*Stegobium paniceum*). The clothes moth and carpet beetle have adapted to modern museum conditions which create an added danger for museum collections (Ward, 1976, p. 3). Ward states that these pests "achieve their optimum breeding capacity under almost exactly the conditions which our museums provide" (p. 3). He also suggests that the clothes moth and carpet beetle larvae attack anything containing keratin (Ward, p.3).

Wyatt (1983) suggests that museum pests destroy the skin and hair of ethnographic artifacts, these pests display a particular fondness for appliqué and trim on leather artifacts (p. 84). The preservation of keratin substances involves a familiarization with common characteristics and trouble signs indicating a carpet beetle or clothes moth infestation.

According to Ward (1976), carpet beetles are ranked as the "most persistent and destructive pests of museum collections on the Northwest Coast" (p. 4). The adult varied carpet beetle is relatively small with a "pattern of irregular bands of white, yellow, and black scales" on its back (Ward, p. 4). The adult common carpet beetle similar in shape and size has an "orange-red stripe down the centre of the back with three equidistant lateral projections of the same colour joining sinuous white bands which continue to the outer edges of the wing-cases" (Ward, p. 4). The adult black carpet beetle is uniformly black and similar in shape and size (Ward, p. 4) (see Figure 12). The beetle larvae are highly sensitive to light and heat. The larvae eggs lay dormant in low temperatures and resume normal activity upon thawing (Ward, p. 4). The carpet beetle larvae moult often during their growth cycle and cast off larval skin. This larval skin is found in museum collections and indicates the source of the damage (Ward, p. 5). Another indicator of a carpet beetle infestation is the presence of minute oval and creamy-white eggs often found near suitable food sources (Ward, p. 5).

There are two species of clothes moths found within museum collections which include: the casemaking clothes (or fur) moth and the common clothes (or webbing clothes) moth (Ward, 1976, p. 3). Ward describes the Common Clothes Moth as "white to silvery-buff, while the Casemaking Clothes Moth is darker with characteristic dark spots on the forewing" (p. 3) (see Figure 13). The damage incurred by a clothes moth infestation is caused by grazing larvae as opposed to feeding adult moths (Ward, p. 3). The larvae are a "glossy cream-white with brown heads" and are rarely seen (Ward, p. 3). The clothes moth eggs are found singly or grouped together in fur, lint, and fabric seams (Ward, p. 3). High humidity levels attract clothes moths to keratin substances (Horie, 1992, p. 342).



Adult Varied Carpet Beetle (6 cm) and Larva (8 cm)

Adult Common Carpet Beetle (5.25 cm) and Larva (4.75 cm)

Adult Black Carpet Beetle (8 cm) and Larva (7 cm)

Figure 12. Illustration of the carpet beetle and its larva (From Getting the Bugs Out (p. 4-5) by P. R. Ward, 1976, Victoria: Royal British Columbia Museum. Copyright 1976 by Royal British Columbia Museum. Reprinted by permission).

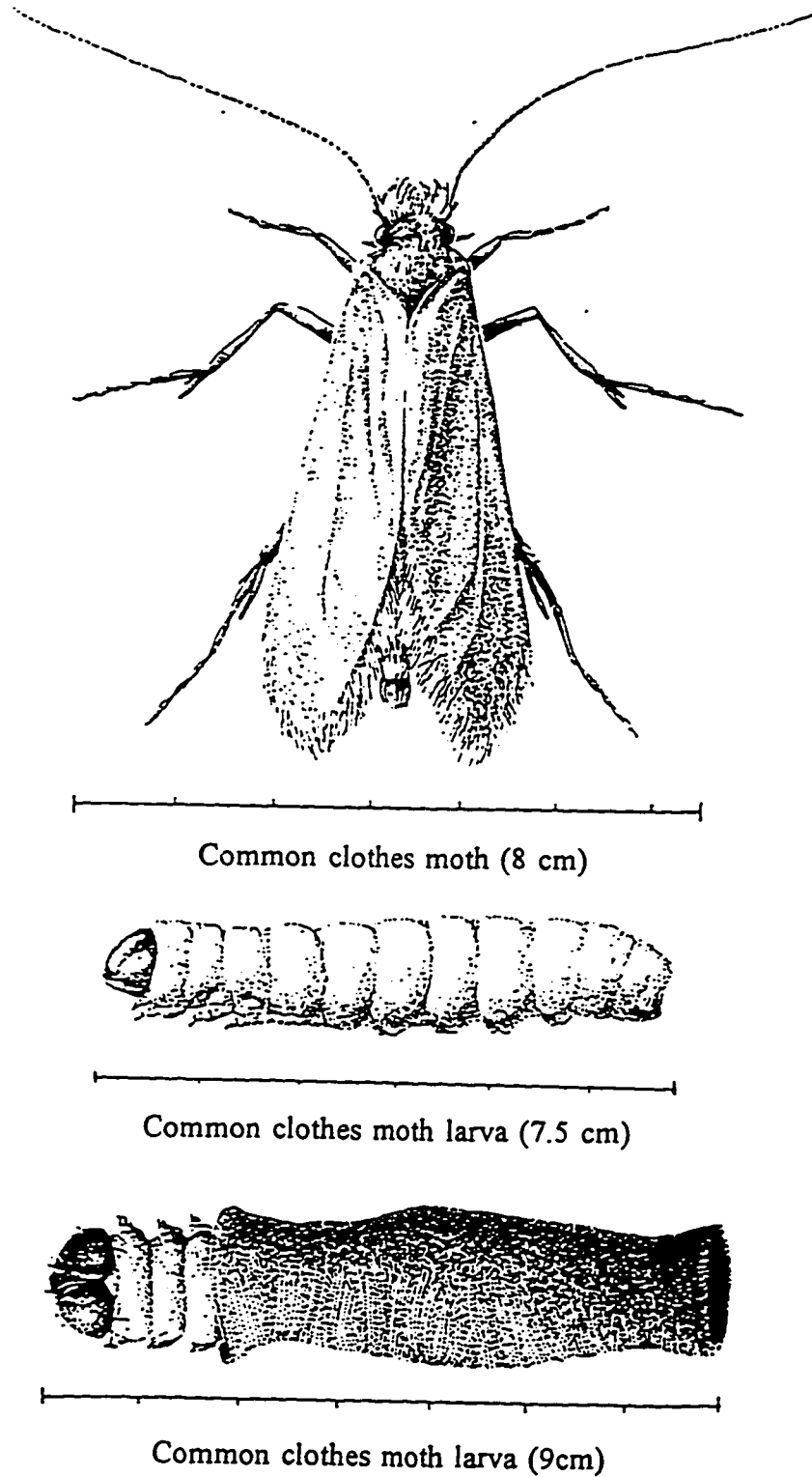


Figure 13. Illustration of common clothes moth and its larva (From Getting the Bugs Out (p. 3) by P. R. Ward, 1976, Victoria: Royal British Columbia Museum. Copyright 1976 by Royal British Columbia Museum. Reprinted by permission).

Preventive Measures

Once the source of infestation is detected, proper actions can be taken to eliminate the problem before further damage occurs. An infected artifact should be isolated until appropriate action can be taken. Rose (1992) states that "chemicals contained in mothballs, sprays, and pest strips can react with protein materials and should not be used" (p. 119). Howatt-Krahn (1987) suggests that freezing may become a safe alternative for chemical insecticides (p. 49).

Freezing may destroy a pest infestation on insulated objects before the entire collection is contaminated. Butcher-Youngmans & Anderson (1990) states that most organic materials, susceptible to pest infestations, undergo freezing without further damage (p. 3). She explains that organic materials absorb water, into their structure, which condenses from the air to cause minimal permanent damage to the artifact. Florian (1986) suggests that ethnographic objects are subject to freezing and thawing during use, therefore freezing represents a sound conservation procedure (p. 5). Ethnographic objects, however, consist of a variety of substances which may react individually to freezing. The components of individual artifacts must be deemed safe before being exposed to extreme low temperatures for an extended period of time.

Along with preventive conservation, museums should maintain ideal environmental control to ensure artifact safety. The museum environment is controlled through maintaining a constant relative humidity and temperature which are conducive to prolonging the life of the artifact. Strict regulations are imperative to regulate the amount of light exposure artifacts within storage and exhibits encounter. Thomson (1990) suggests that ideal museum temperatures are $19^{\circ}\text{C} \pm 1^{\circ}\text{C}$ in winter and up to $24^{\circ}\text{C} \pm 1^{\circ}\text{C}$ in summer (p. 268). The relative humidity should remain constant at $50-55 \pm 5\%$ (Thomson, p. 268). The relative humidity must remain constant; varying degrees of moisture are dangerous to animal hair (Howatt-Krahn, 1987, p. 47). Hair becomes brittle and fades when exposed to prolonged and intense light. The suggested amount of light within museums for hair is "5 footcandles 65°F (18°C)" (Bachmann, 1992, p. 133).

Museum Documentation of Hair Embroidery

A deficiency in the information regarding ethnographic substances and their identification reflects the obscurity of hair embroidery within museum collections. Many issues concerning the documentation of artifacts with hair embroidery should be addressed. Such issues include: oversight of embellishment techniques, financial museum cut-backs, and a lack of proper documentation.

Throughout my study, I determined that museum personnel fail to focus on specific embellishment techniques while documenting artifacts. The majority of artifacts found at the Sheldon Jackson Museum exhibit limited amounts of hair embroidery which can easily be overlooked. Regardless how minuscule the amount of embellishment, I feel that correct documentation is important in recording material culture for further research. The overall neglect in documenting hair embroidery within museums epitomizes a focus on more noticeable and popular attributes associated with ethnographic artifacts.

Artifacts with hair embroidery may be improperly documented as a direct result of financial cut-backs within museums. With financial restructuring, museums remain understaffed and rely more heavily on volunteer personnel to provide assistance in artifact documentation. Volunteer personnel, although a vital part of museum operations, are inexperienced in identifying specific artifact attributes. As collections grow and staff decreases, museums become incapable of allotting sufficient time for artifact documentation. Therefore, measures need to be taken to ensure that accurate documentation and treatment is provided. Hair embroidery artifacts require a trained individual with experience in documenting ethnographic artifacts and in identifying organic substances.

Most large ethnographic museum collections dealing with northern cultures were established at the turn of the twentieth century and house artifacts which were collected during whaling exploration and commissioned research expeditions. Hair embroidery artifacts in the University of Alaska Museum and the Sheldon Jackson Museum were collected around 1900-1920 and accessioned years ago. These older museum acquisitions contain a limited amount of information in the documentation

records. Currently, museums are faced with the impossible task of providing sufficient documentation for artifacts collected a century ago. I found that insufficient museum documentation records made locating and singling out hair embroidery artifacts difficult.

When compiling my research on hair embroidery, I searched the CHIN data base for information on Canadian museums and their collections. This search produced an incomplete list of museums with hair embroidery in their collections. The CHIN search indicated that hair embroidery was nonexistent throughout Canadian museums, which I knew to be incorrect. I conclude that success on the CHIN data base is contingent on the use of appropriate key words to retrieve the information in question. If the search terms are inconsistent, the CHIN results will be flawed. When artifact documentations are incorrect, museum data bases will also provide inconsistent results. Until hair embroidery is correctly identified and documented, manual searches (i.e. individual letters to museum curators and visual inspection of collections) will produce the most desirable results. If feasible, entire ethnographic collections should be viewed for possible hair embroidery artifacts. Museum personnel and researchers are usually constricted by time, therefore documentation files must suffice as finding aids for hair embroidery.

Chapter V.

Conclusions

Hair embroidery on material culture is disappearing throughout communities who face the meshing of the traditional subsistence life with modernization. During my visit to St. Lawrence Island, I was unable to observe the practice of hair embroidery. However, I did confirm that the memory of hair embroidery remains alive among the older women of Gambell and Savoonga. Based on this, I believe that preservation of this indigenous knowledge is now at a critical point.

The purpose of my study was to incorporate information which I gained through artifact studies with the information gained on St. Lawrence Island to provide a comprehensive look at Yuit hair embroidery. The aid and support provided by the St. Lawrence Island Yuit became invaluable to the final outcome of this study by providing me with insight into the presence of hair embroidery on the island. During my research, several factors which influence Yuit participation in hair embroidery on St. Lawrence Island became apparent. These factors include: indigenous contact between St. Lawrence Island and the Russian Far East, introduction of reindeer into Alaska, presence of researchers on St. Lawrence Island, and tensions attributed to the cold war.

Through this study, similarities between embroideries from the Russian Far East and St. Lawrence Island became apparent to me. It has been determined that significant contact occurred between these regions which resulted in syncretic indigenous knowledge. I found hair embroidery on St. Lawrence Island to represent influences from the Russian Far East which were incorporated through trade, marriage, and educational instructors. These influences indicate that hair embroidery had infiltrated into Alaska by way of the Russian Far East through intricate kinship and exchange relations.

Trans-Beringian trade connections may have been influential in the presence of hair embroidery on St. Lawrence Island. Trade relations are known to have existed between the Chukchi and St. Lawrence Island Yuit, thus supporting the theory of exchange in regards to the knowledge of hair embroidery. Indigenous trade relations

were established as a means to acquire resources otherwise unavailable. The St. Lawrence Island Yuit traded sea mammals to the Chukchi in exchange for reindeer skins. The women of Gambell indicate that considerable contact through trade was established between the St. Lawrence Island Yuit and peoples of Far Eastern Russia. For instance, the Chukchi were known to participate in hair embroidery; therefore, I believe the contact between trans-Beringian groups influenced the participation of this embellishment by the St. Lawrence Island Yuit.

Marriage between the St. Lawrence Island Yuit and the Russian Far East Yuit often occurred as a result of trade relations or kinship ties. Marital ties provided an avenue for sharing hair embroidery knowledge among the trans-Beringian peoples. The knowledge of hair embroidery would conceivably be introduced through the marriage of women from the Russian Far East to St. Lawrence Islanders. After marriage, the patriarchal clan system required that women from Far Eastern Russia reside with their husband's family on St. Lawrence Island. Similarities in trans-Beringian embroidery techniques indicate that women from Far Eastern Russia living on St. Lawrence Island continued to embroider using their indigenous techniques. I suggest that these women continued to embroider with hair and inspired the St. Lawrence Island Yuit to adopt this embellishment. Kinship ties, therefore, are important in the occurrence of hair embroidery on St. Lawrence Island.

Personal communication with Vivian Iyakiten (January, 1994) provided information regarding a teacher from Far Eastern Russia who taught hair embroidery to young women on St. Lawrence Island. Hair embroidery was incorporated into the school curriculum in Gambell during the 1940's. I believe that as Euro-American goods became more available less emphasis was placed on traditional methods of embellishment. This assumption is supported by evidence of European influence on embellishment as early as c. 1927.

I suggest that a connection between the introduction of domestic reindeer into Alaska and hair embroidery on St. Lawrence Island exists. Before the establishment of a reindeer herd on St. Lawrence Island, the islanders had to procure reindeer hair through trade with their neighbours from Far Eastern Russia. Trade was necessary to

provide St. Lawrence Island with reindeer skins; this necessity provided guaranteed contact between the trans-Beringian peoples. It is believed that without the need for reindeer skin the contact between St. Lawrence Island and the Russian Far East may have decreased. This decrease would alter the production of hair embroidery on St. Lawrence Island. I suspect that contact between Far Eastern Russia and St. Lawrence Island was affected by the introduction of reindeer into Alaska the extent of which is unknown.

Ideally, the establishment of local reindeer herds on St. Lawrence Island would ensure that hair resources remained available. This availability of hair could have increased the interest of the St. Lawrence Island Yuit in hair embroidery while at the same time lessening the amount of contact with others who practiced the technique. However, since local reindeer herds on St. Lawrence Island have been difficult to regulate owing to constant fluctuation of environmental conditions and size of the herd, it is unclear how these factors have inter-related over time.

I found that after the introduction of reindeer onto St. Lawrence Island, residents of Gambell experienced difficulty in procuring hair. Hair resources on St. Lawrence Island, primarily in Gambell, have been difficult to acquire starting as early as 1930. It is my opinion that several factors contributed to the limited supply of reindeer resources in Gambell. One factor involves the concentration of reindeer herds in Savoonga as opposed to Gambell. The management of reindeer by the IRA Council of Savoonga has had an effect on the availability of hair in Gambell. By establishing a permit system for hunting reindeer, many residents of Gambell were unable to hunt reindeer, and this contributed to the scarcity of hair for embroidery.

The lack of hair resources in Gambell may explain why hair embroidery remained a limited aspect of Yuit embellishment. By limited, I mean that embroidery knowledge appears more prominent among the elder generation; the knowledge appears contingent on whether individual contact with Siberian embroiderers occurred. Several women expressed a desire to resume hair embroidery practices if hair resources were available.

Contact with early researchers, whalers, and missionaries may have influenced

the appearance and production of reindeer hair embroidery on St. Lawrence Island. Researchers from a variety of institutions were present on St. Lawrence Island during the 1920-1930's to procure ethnographic collections for their affiliated institutions. These outsiders provided access to manufactured goods in exchange for ethnographic and archeological artifacts. The introduction of Euro-American goods was inevitable and resulted in altering the appearance of traditional material culture through the incorporation of beads, cotton thread, European textiles, and plastic buttons.

The Cold War, which resulted in the formation of the 'ice curtain,' had a profound effect on the production of hair embroidery on St. Lawrence Island. The ice curtain prohibited any movement of indigenous peoples across the Bering Strait. These restrictions on travel destroyed most communication between Siberia and St. Lawrence Island. In my opinion, the restrictions resulting from the cold war led to the decline of hair embroidery as a Yuit phenomenon. Without Siberian influences to keep Yuit hair embroidery alive, another technique of embellishment (i.e. beading) was incorporated to replace hair embroidery. The lifting of the travel restrictions across the Bering Strait has begun to reinstate the contact between Far Eastern Russia and St. Lawrence Island. I found that the period between the introduction of reindeer into Alaska and the Cold War appears to represent the height of hair embroidery as seen through museum collections at the University of Alaska Museum and the Sheldon Jackson Museum.

Traditionally, embellishment techniques were instrumental in showing respect to the hunted animal in relation to Yuit beliefs associated with animism and shamanism which represent the governing forces of Yuit societies. However, the introduction of Euro-American beliefs and products have altered the cosmological aspect of northern clothing. Euro-American goods provided the inspiration for altering traditional material culture into mass produced and marketable objects. I believe hair embroidery, a tedious and time consuming embellishment technique, is inefficient for mass production in the tourism industry connected to St. Lawrence Island.

The St. Lawrence Island Yuit have maintained oral traditions within their society as historic record. Hair embroidery, although seemingly absent in the today's

society, remains alive in memories held by the elders. The expression of these memories may incite the younger generation to become interested in hair embroidery. Oral histories are essential to museum collections by providing information on artifacts before traditional knowledge is unattainable. By creating a partnership between museums and indigenous communities, museums could increase their accuracy in the documentation of material culture.

Through museum studies alone, I would have been unable to determine accurately if the tradition of hair embroidery remains intact on St. Lawrence Island. However, the analysis of artifacts within museum collections provided me with sufficient information to identify important trends and influences. The identification of trends and influences became necessary for placing hair embroidery within a context. I analyzed the artifacts according to technical similarities, use of colour, design similarities, presence of other forms of embellishment, Euro-American influences, and artifact uses. Through artifact attribute analysis, I have determined that there is substantial evidence to support the assumption that St. Lawrence Island hair embroidery is connected to hair embroidery from Far Eastern Russia.

My analysis of technical similarities between hair embroidery of Far Eastern Russia and St. Lawrence Island indicates that the techniques are almost identical. I support this conclusion with evidence of identical stitch variations found on artifacts collected in the trans-Beringian region. The similarities of stitch variations indicate, to me, that the Aleut and Yukon-Kuskokwim Delta Yuit embroideries are connected. Furthermore, hair embroidery from St. Lawrence Island and the Russian Far East are also connected. I found that the connection between neighbouring communities and similar techniques of hair embroidery was related to the sharing of indigenous knowledge (see Appendix E).

Hair utilized in embroideries produced by different cultural groups is often dyed; however the hair on St. Lawrence Island embroideries remains undyed. These embroideries employ cotton thread of various colours for accent. Once cotton thread became available, it replaced sinew in hair embroideries throughout the trans-Beringian region. Far Eastern Russia and St. Lawrence Island employ identical techniques to

incorporate cotton thread and reindeer hair into their hair embroidery. I identified similarities in the choice of thread and textile colours found throughout embroideries from Far Eastern Russia and St. Lawrence Island. In the trans-Beringian region, I also found similarities in design motifs as well as in colour. Popular motifs include the tongue or U-shaped motif and a series of circles within circles. I found that these popular motifs appear to be chronological according to similar motifs found throughout Far Eastern Russia and St. Lawrence Island at a given time.

The embroidered artifacts in the museum collections from St. Lawrence Island are very similar in the use of colour, width, and techniques, indicating that they may have been embellished by the same woman. Artifacts often exhibit other modes of embellishment in conjunction with hair embroidery. A combination of beading and hair embroidery suggests a transition between indigenous embellishment and the incorporation of imported goods into material culture. Other reasons for incorporating beading and hair embroidery may include available materials, colour aesthetics, and durability of beading compared with hair embroidery. The quality of hair embroidery on artifact (UA 64.21.139) exceeds the quality of the beading; this may indicate that the beading was the newer form of embellishment because the embroiderer appeared less experienced at producing the same quality. This hypothesis is founded on the premise that reindeer hair was available prior to the introduction of manufactured beads. St. Lawrence Islanders are currently teaching beading to the younger generation in order to preserve their indigenous culture; it seems that beading has replaced hair embroidery among the Yuit.

The shift from relatively self-contained to the production of indigenous material culture objects for the tourist trade began to alter the appearance of hair embroidery on St. Lawrence Island. European influences caused a change in artifact appearances through the introduction of cotton thread, trade beads, plastic buttons, and manufactured sewing implements. The hair embroidered belts from St. Lawrence Island have Euro-American styled buckles which are fashioned out of ivory. Euro-American influences have influenced the appearance and functional use of artifacts. The utilitarian aspect of hair embroidery from St. Lawrence Island reflects change, in

that these artifacts lack the components to be functional (i.e. buckle holes). In my opinion, many early twentieth century artifacts reflect the transition between subsistence and tourism as represented in museum collections.

Museums are responsible to insure that hair embroidery artifacts are maintained for future study and display. Hair is difficult to preserve owing to its structural characteristics, as well as prior treatment of artifacts within museum collections. Often times, artifacts with hair embroidery have been exposed to museum insects. Unfortunately, once contact with a museum insect occurs the damage is irreversible. Hair, consisting of keratin, is susceptible to damage even within ideal museum conditions. The carpet beetle and clothes moth, both destructive to keratin, have acclimated to modern museum conditions. However, preventing further artifact damage is necessary to the survival of hair embroidery within museum collections.

The conservation of ethnographic artifacts within museum collections begins through education. Educating museum personnel on methods regarding the identification of organic substances found within Alaskan ethnographic collections is essential. The identification of artifact attributes is important to the survival of hair embroidery within museum collections. Artifacts with hair embroidery are often misclassified as other, similar embellishment techniques. Hair embroidery can appear invisible, if applied onto certain substances, and often escapes notice by qualified museum personnel. Consciousness needs to be raised with regard to hair embroidery to counteract the hidden quality of hair. Museums will continue to document and preserve material culture inadequately, unless personnel are educated about typical ethnographic substances.

I conclude that ethnographic artifacts benefit more from preventive conservation procedures than remedial conservation procedures such as wet cleaning and stitching. Preventive conservation provides an effective means to ensure that hair embroidered artifacts exist for future reference. Housekeeping practices which are essential to preventive conservation include: clean storage and work areas, careful handling of artifacts by experienced personnel, and proper artifact storage and support. Frequent investigations of artifact storage areas may identify potential problems before

irreparable damage is inflicted. Preventive conservation measures along with ideal environmental conditions are essential for the survival of hair embroidery.

Chapter VI.

Research Recommendations

Recently, within the last twenty years, scholars have been interested in investigating the relationships between indigenous groups from Far Eastern Russia and Alaska. This research is essential before traditional knowledge is forgotten. Through research on the effects of trans-Beringian trade relations in conjunction with shared knowledge of material culture, an important cultural link between Far Eastern Russia and Alaska will be established.

My study regarding Yuit participation in hair embroidery could be strengthened through further research on the absence of reindeer hair in Gambell. The information provided in my study could also be enhanced through research on the trans-Beringian relationships between colour choice and the meanings attributed to embroidery motifs. The spiritual, social, and psychological meanings attributed to motifs and symbols used in hair embroidery is in need of research.

I believe that the actual knowledge of indigenous hair embroidery is minimal. Further research, therefore, is important to bring about an awareness of hair embroidery as a Yuit embellishment technique. More research is needed to understand the meaning of hair embroidery within a cultural context in other Yuit and non-Yuit societies. A multi-regional review of hair embroidery, dealing with modern inventions and influences in the production, procedure, style, symbol, and materials used for contemporary hair embroidery, would prove beneficial to scholarly research. The effect of the tourism industry on rural Alaskan communities is an issue in need of further research.

Research concerning the identification of ethnographic artifacts is needed to ensure accurate documentation of hair embroidery. Further research regarding the treatment and conservation of ethnographic artifacts is important for the preservation of these artifacts. Ethnographic artifacts, consisting of organic and inorganic materials, require special treatment. Unless research is conducted to determine conservation procedures, indigenous knowledge contained in these artifacts may be irretrievably lost.

References

- Ackerman R. E. (1976). The Eskimo people of Savoonga. Phoenix, AZ: Indian Tribal Series.
- Agar, M. H. (1980). The professional stranger: An informal introduction to ethnology. Toronto, ON: Academic.
- Alaska Consultants, Inc., Braund, S. R. & Associates. (1984). Subsistence study of Alaska Eskimo whaling villages. United States Department of the Interior.
- Alaska population overview 1991 estimates. (1991). Juneau, AK: State of Alaska Department of Labor Research and Analysis.
- Apassingok, A., Walunga, W., & Tennant, E. (Eds.). (1985). Lore of St. Lawrence Island: Echoes of our Eskimo elders (Vol. 1). Unalakleet, AK: Bering Strait School District.
- Apassingok, A., Walunga, W., Oozevaseuk, R., & Tennant, E. (Eds.). (1987). Lore of St. Lawrence Island: Echoes of our Eskimo elders (Vol. 2). Unalakleet, AK: Bering Strait School District.
- Arutiunov, S. A. (1988a). Chukchi: Warriors and traders of Chukotka. In W.W. Fitzhugh & A. Crowell (Eds.), Crossroads of continents: Cultures of Siberia and Alaska (pp. 39-42). Washington, DC: Smithsonian Institution.
- Arutiunov, S. A. (1988b). Koryak and Itelmen: Dwellers of the Smoking Coast. In W. W. Fitzhugh & A. Crowell (Eds.), Crossroads of continents: Cultures of Siberia and Alaska (pp. 31-35). Washington, DC: Smithsonian Institution.
- Bachmann, K. (Ed.). (1992). Conservation concerns: A guide for collectors and curators. Washington, DC: Smithsonian Institution.
- Bernton, H. (1991, July). Melting the ice curtain. Alaska Magazine, 21-25, 64-65.
- Black, L. T. (1982). Aleut art. Anchorage, AK: Aleutian/Pribilof Islands Association, Inc.
- Black, L. T. & Liapunova, R.G. (1988). Aleut: Islanders of the North Pacific. In W.W. Fitzhugh & A. Crowell (Eds.), Crossroads of continents: Cultures of Siberia and Alaska (pp. 52-58). Washington, DC: Smithsonian Institution.

- Bogoras, W. (1969). The Chukchee. In F. Boas (Ed.), The Jesup North Pacific Expedition: Memoirs of the American Museum of Natural History (Vol. XI). New York: Johnson Reprint Company Ltd. (original work published 1909)
- Bronner, S. J. (Ed.). (1985). American material culture and folklife: A prologue and dialogue. Ann Arbor, MI: University Microfilms International.
- Burch, E. S. Jr. (1988). War and trade. In W. W. Fitzhugh & A. Crowell (Eds.), Crossroads of continents: Cultures of Siberia and Alaska (pp. 227-240). Washington, DC: Smithsonian Institution.
- Bureau of Indian Affairs, Planning Support Group. (1977). Gambell its history, population and economy (Report No. 243). Billings, MT: United States Department of the Interior.
- Burnham, D. K. (1992). To please the caribou. Toronto, ON: Royal Ontario Museum.
- Butcher-Youngmans, S. & Anderson, G. E. (1990). A holistic approach to museum pest management. History News; American Association for State and Local History Technical Leaflet, 45 (3), 1-6.
- Canadian Conservation Institute (CCI). (March, 1988). Care of Quillwork. CCI Notes 6/5. Ottawa, ON: Canadian Conservation Institute.
- Carney, T. F. (1972). Content analysis: A technique for systematic inference from communication. Winnipeg: University of Manitoba.
- Caseburg, D. (1993). Religious practice and ceremonial clothing on the Blecher Islands, Northwest Territories. Unpublished master's thesis, University of Alberta, Edmonton.
- Chaussennet, V. (1988). Needles and animals: Women's magic. In W. W. Fitzhugh & A. Crowell (Eds.), Crossroads of continents: Cultures of Siberia and Alaska (pp. 209-226). Washington, DC: Smithsonian Institution.
- Chaussennet, V. (1991). Symbol and function in North Pacific clothing. In K.R. Johnson, L.J. Hickey, & C.A. Hoover (Eds.), Crossroads of continents: The material culture of Siberia and Alaska. Report of a Yale-Smithsonian seminar (pp. 18-21). Washington, DC: Smithsonian Institution.
- Claburn, P. (1976). The needleworker's dictionary. London: Macmillan.

- Code of ethics and guidance for practice: For those involved in the conservation of cultural property in Canada (2nd ed.). (1989). Ottawa, ON: IIC-CG/CAPC.
- Collier, J. Jr. & Collier, M. (1986). Visual Anthropology: Photography as a research method. Albuquerque: University of New Mexico Press.
- Corrington, D. Owner of Corrington Museum of Alaskan History. Personal Communication, January, 1995.
- Cremeans, L. (1930). Eskimo clothing on St. Lawrence Island Alaska, Otto W. Geist Papers, Section V, Box 8, Folder 11, Archives, Alaska & Polar Regions Department, Elmer E. Rasmuson Library, University of Alaska Fairbanks.
- Daly, M. C. (1984). Use of ethnographic approach as interpretive science within the field of home economics: Textiles and clothing as an example. Home Economics Research Journal, 12 (3), 354-362.
- Dickason, O.P. (1972). Indian arts in Canada. Ottawa, ON: Department of Indian Affairs and Northern Development.
- NA. (1985). Ethnohistory, Title page.
- Ewers, J. C. (1961). Symposium on the concept of ethnohistory--Comment. Ethnohistory, 8, 262-270.
- Fair, S. W. (1982). Essay, Eskimo dolls. In S. Jones (Ed.), Eskimo dolls (pp. 46-74). Alaska State Council on the Arts.
- Feest, C. F. (1980). Native arts of North America. Toronto, ON: Oxford University.
- Fenton, W. N. (1966). Field work, museum studies, and ethnohistorical research. Ethnohistory, 13, 71-85.
- Finding Aid, Otto W. Geist Papers, Archives, Alaska & Polar Regions Department, Elmer E. Rasmuson Library, University of Alaska Fairbanks.
- Finley, G. (1985). Material history and curatorship: Problems and prospects. MUSE, 3 (3), 34-39.
- Fitzhugh, W. W. (1988). Eskimos: Hunters of the frozen coasts. In W. W. Fitzhugh & A. Crowell (Eds.), Crossroads of continents: Cultures of Siberia and Alaska (pp. 42-51). Washington, DC: Smithsonian Institution.

- Fitzhugh, W. W. (1994). Crossroads of continents: Review and prospect. In W. W. Fitzhugh & V. Chaussonnet (Eds.), Anthropology of the North Pacific Rim (pp. 27-52). Washington, DC: Smithsonian Institution.
- Fitzhugh, W.W. & Kaplan, S.A. (1982). Inua: Spirit world of the Bering Sea Eskimo. Washington, DC: Smithsonian Institution.
- Fleming, E. M. (1974). Artifact Study: A proposed model. Winterthur Portfolio, 9, 153-173.
- Florian, M. E. (1986). The freezing process - effects on insects and artifact materials. Leather Conservation News, 3 (1), 1-13.
- Florian, M. E., Kronkright, D. P., & Norton, R. E. (1990). The conservation of artifacts made from plant materials. Los Angeles: J. Paul Getty.
- Folding Map. (1955). Arctic, VII (3&4).
- Gambell, Inez. Hair embroiderer in Gambell. Personal communication, January, 1994.
- Geist, O. W. (n.d.). Address College Commercial Club, Otto W. Geist Papers, Section X, Box 1, Articles by and about Geist, Archives, Alaska & Polar Regions Department, Elmer E. Rasmuson Library, University of Alaska Fairbanks.
- Geist, O. W. & Rainey, F. G. (1936). Archeological excavations at Kukulik, St. Lawrence Island, Alaska. Miscellaneous Publications of the University of Alaska, II.
- Goodfellow, R. (1986). Caribou hair and the creation of a new fabric. Ars Textrina, 6, 119-134.
- Grabum, N. H. & Strong, B. S. (1973). Circumpolar peoples: An anthropological perspective. Pacific Palisades, CA: Goodyear.
- Gurvich, I. S. (1988). Ethnic connections across Bering Strait. In W.W. Fitzhugh & A. Crowell (Eds.), Crossroads of continents: Cultures of Siberia and Alaska (pp. 17-21). Washington, DC: Smithsonian Institution.
- Hail, B. A. & Duncan, K. C. (1989). Out of the north: The subarctic collection of the Haffenreffer Museum of Anthropology. Bristol, RI: Brown University.

- Hatt, G. (1914). Arktiske skinddragter i Eurasien og Amerika: An etnografisk studie. Copenhagen, Denmark: J. H. Schultz. (Translation, Arctic Anthropology, 1969, 5 (2), 3-132).
- Hickey, C. G. (1976). The historic trade network: Its nature and origins. Unpublished manuscript, University of Alberta at Edmonton.
- Horie, C. V. (1992). Conservation and storage: leather objects. In J. M. A. Thompson, D. A. Bassett, A. J. Duggan, G. D. Lewis, & A. Fenton (Eds.), Manual of curatorship: A guide to museum practice (2nd ed.). Toronto, ON: Butterworth-Heinemann.
- Howatt-Krahn, A. (1987, Spring). Skin and Native-tanned leather. American Indian Art Magazine, 44-51.
- Hughes, C. C. (1960). An Eskimo village in the modern world. New York: Cornell University.
- Hughes, C. C. (1984a). Asiatic Eskimo: Introduction. In W. C. Sturtevant (Gen. Ed.) & D. Damas (Vol. Ed.), Handbook of North American Indians: Vol. 5. Arctic (pp. 243-246). Washington, DC: Smithsonian Institution.
- Hughes, C. C. (1984b). Siberian Eskimo. In W. C. Sturtevant (Gen. Ed.) & D. Damas (Vol. Ed.), Handbook of North American Indians: Vol. 5. Arctic (pp. 247-261). Washington, DC: Smithsonian Institution.
- Issenman, B. (1985). Inuit skin clothing construction and motifs. Etudes/Inuit/Studies, 9 (2), 101-119.
- Ivanov, S. V. (1963). Ornament narodov Sibiri kak istoricheskii istochnik [Ornament of the peoples of Siberia as a historical source]. Trudy Istituta Ethnografii, n.s.81.
- Iyakiten, Vivian. Hair embroiderer from Gambell. Personal communication, January, 1994.
- Jackson, S. (1895a). Introduction of domestic reindeer into Alaska (Ex. Doc. No. 92). Washington, DC: Government Printing Office.
- Jackson, S. (1895b). Report on introduction of domestic reindeer into Alaska. In Education, introduction of reindeer, and agriculture in Alaska (pp. 5-131). Washington, DC: Government Printing Office.

- Jackson, S. (1904). Introduction of domestic reindeer into Alaska (13th Annual Report). Washington, DC: Government Printing Office.
- Jerde, J. (1992). Encyclopedia of textiles. New York: Facts on File.
- Jewett, D. (1982). The conservation of porcupine quillwork on birchbark panels. In R. H. Whitehead, Micmac quillwork: Micmac Indian techniques of porcupine quill decoration: 1600-1950 (pp. 213-215). Halifax, NS: Nova Scotia Museum.
- Jochelson, W. (1975). The Koryak. In F. Boas (Ed.), The Jesup North Pacific Expedition: Memoir of the American Museum of Natural History (Vol. 6). New York: AMS Press. (Original work published in 1908)
- Jolles, C. Z. (1994). Cutting meat, sewing skins, telling tales: Women's stories in Gambell, Alaska. Arctic Anthropology, 31 (1), 86-102.
- Jorgensen, J. G. (1990). Oil age Eskimos. Berkeley, CA: University of California.
- Kaalund, B. (1983). The art of Greenland. Los Angeles: The University of California Press.
- Kaplan, N. (1974). In the land of the reindeer: Applied art in the north of the Soviet Union. Leningrad, Russia: Aurora Art Publications.
- Keim, C. J. (1969). Aghvook, white Eskimo: Otto Geist and Alaskan archeology. Fairbanks: University of Alaska.
- Kerr, N. & Prince, H. (1993). CLTX textile conservation laboratory exercises. Unpublished manuscript, University of Alberta at Edmonton.
- Kingeekuk, Kenneth. Savoonga IRA Council President. Personal communication, January, 1994.
- Koek, A. (1984). From utensils to art: Cultural changes among the Inuit and Yuit in Alaska. In G. W. Nooter (Ed.), Life and survival in the Arctic: Cultural changes in polar regions (pp. 79-95). The Hague, Netherlands: Government Publishing Office.
- Krauss, M. E. (1994). Crossroads? A twentieth-century history of contacts across the Bering Strait. In W.W Fitzhugh & V. Chaussonnet (Eds.), Anthropology of north Pacific rim (pp. 365-379). Washington, DC: Smithsonian Institution.
- Kroschwitz, J. I. (Ed.). (1990). Polymers: Fibers and textiles: A compendium. New York: Wiley and Sons.

- Kulowiya, Alice. Hair embroiderer from Savoonga. Personal communication, January, 1994.
- Langdon, S. J. (1993). The native people of Alaska. Anchorage, AK: Greatland Graphics.
- Lantis, M. (1950). The reindeer industry in Alaska. Arctic, 3 (1), 27-44.
- Larsen, Dinah. Coordinator of Ethnology, University of Alaska Museum, Fairbanks. Personal communication, January and February, 1994.
- Levin, M. G. & Potopov, L. P. (1964). The peoples of Siberia. Chicago: The University of Chicago Press.
- Lipton, B. (1977). Survival life and art of the Alaskan Eskimo. Dobs Ferry, NY: Morgan and Morgan, Inc.
- Majewski, L. J. (1973). Lawrence Majewski on conservation. Museum News, 51 (6), 8-10.
- Moore, R. D. (1923). Social life of the Eskimo of St. Lawrence Island. American Anthropologist, N.S. 25, 339-375.
- Murdoch, J. (1892). Ethnological results of the Point Barrow expedition. 9th Annual Report of the Bureau of American Ethnology. Washington, DC: Smithsonian Institution.
- Nelson, E. W. (1899). The Eskimo about Bering Strait. 18th Annual Report of the Bureau of American Ethnology, 1896-1897, Pt. 1, 1-518.
- Oakes, J. E. (1988). Fur fashions from a northern perspective. Canadian Home Economics Journal, 38 (2), 77-80.
- Oakes, J. E. (1991). Copper and Caribou Inuit skin clothing production. Hull, PQ: Canadian Museum of Civilization.
- Oakes, J. & Riewe, R. (1992). A Comparison of historical and contemporary skin clothing used in north Greenland: An ethnohistorical approach. Clothing and Textiles Research Journal, 10 (3), 76-85.
- Ochard, W. C. (1916). The technique of porcupine-quill decoration among the North American Indians. Contributions from the Museum of the American Indian, Heye Foundation, vi. New York: Museum of the American Indian Heye Foundation.

- Olson, D. F. (1969). Alaska reindeer herdsman: A study of native management in transition (SEG Report No. 18). Fairbanks: University of Alaska, Institute of Social, Economic and Government Research.
- Oozevaseuk, Estelle. Hair embroiderer from Gambell. Personal communication, January, 1994.
- Openda-Omar, N. O. (1993). A history of dress in the Kakamega district of western Kenya: Impact of socio-cultural factors. Unpublished master's thesis, University of Alberta, Edmonton.
- Oswalt, W. H. (1979). Eskimo and explorers. Novato, CA: Chandler & Sharp.
- Pannabecker, R. K. (1990). Linking anthropology and history in textiles and clothing research: The ethnohistorical method. Clothing and Textiles Research Journal, 8 (3), 14-18.
- Patty, E. N. (1929, November 30). Spent three years on arctic island in quest of 'buried treasure'. Farthest-North Collegian, VIII, 1.
- PC Globe Maps 'n' Facts [Computer Software]. (1993). Novato, CA: Brøderbund Software.
- Pearce, S. (1986). Thinking about things. Museums Journal, 86, 198-201.
- Peltz, P. & Rossol, M. (1983). Safe pest control procedures for museum collections. Center for Occupational Hazards. p. 1-8. (Reprinted from Center for Safety in the Arts).
- Postell, A. (1990). Where did the reindeer come from?: Alaska experience, the first fifty years. Portland, OR: Amaknak Press.
- Prince, N. L. (1992). An analysis of the Hudson's Bay company clothing influences on Carrier and Coast Salish dress, 1830-1850. Unpublished master's thesis, University of Alberta, Edmonton.
- Prown, J. D. (1980). Style as evidence. Winterthur Portfolio, 15, 197-210.
- Prown, J. D. (1982). Mind in matter: An introduction to material culture theory and method. Winterthur Portfolio, 17, 1-19.
- Pungowiya, Helen. Savoonga Youth Counsellor. Personal communication, January, 1994.

- Rainey F. (1941). Native Economy and Survival in Arctic Alaska, Froelich Rainey Papers, Box 4, Archives, Alaska & Polar Regions Department, Elmer E. Rasmuson Library, University of Alaska Fairbanks.
- Reynolds, B. (1986). Artifactual documents: Ethnological museum collections as an ethnohistorical resource. In D. Weidman (Ed.), Ethnohistory: A researchers guide, 35 (pp. 297-342).
- Robbins, L., Fienup-Riordan, A., Waring, K., Petterson, J., McNabb, S., Nebesky, W., & Young, O. (1988). Village economics in rural Alaska (MMS 88-0079). La Jolla, CA: Impact Assessment, Inc. (PB89-189799)
- Rose, C. L. (1992). Preserving ethnographic object. In K. Bachmann (Ed.). Conservation concerns: A guide for collectors and curators (pp. 115-122). Washington, DC: Smithsonian Institution.
- Schlereth, T. J. (1985). Material culture: A research guide. Lawrence: University Press of Kansas.
- Simmons, W. S. (1988). Culture theory in contemporary ethnology. Ethnohistory, 35 (1), 1-14.
- Speck, F. G. (1911a). Huron moose hair embroidery. American Anthropologist, N.S. 13, 1-14.
- Speck, F. G. (1911b). Notes on the material culture of the Huron. American Anthropologist, N.S. 13, 208-217.
- Steinbright, J. (1992, December 27). Arctic Glitz. Heartland Magazine, H8-13.
- Stern, R. O., Arobio, E. L., Naylor, L. L., & Thomas, W. C. (1980). Eskimos, reindeer, and land. Fairbanks: University of Alaska.
- Story, K. O. (1985). Approaches to pest management in museums. Suitland, MD: Conservation Analytical Lab, Smithsonian Institution.
- St. Lawrence Island Original Ivory CO-OP, Ltd. (1982). Alaskan Eskimo carvers of Gambell [Brochure]. Gambell, AK: Author.
- Taborsky, E. (1990). The discursive Object. In S. M. Pearce (Ed.), Objects of Knowledge (pp. 50-77). London: The Athlone Press.
- Teather, J. L. (1991). Museum studies reflecting on reflective practice. Museum Management and Curatorship, 10, 403-417.

- Thomson, G. (1990). The museum environment (2nd ed.). Toronto, ON: Butterworth-Heinemann.
- Touliatos, J. & Compton, N. H. (1988). Research methods in human ecology/home economics. Ames: Iowa State University.
- Trigger, B. G. (1982). Ethnohistory: Problems and prospects. Ethnohistory, 29 (1), 1-19.
- Tubbs, M. C. & Daniels, P. N. (Eds.). (1991). Textile terms and definitions (9th ed.). Manchester, NY: Textile Institute.
- Turner, G. (1976). Hair embroidery of Siberia and North America. Oxford, England: Pitt Rivers Museum.
- VanStone, J. W. (1980). The Bruce collection of Eskimo material culture from Kotzebue Sound, Alaska. Feildiana Anthropology New Series, 1.
- Varjola, P. (1990). The Etholen collection: The ethnographic Alaskan collection of Adolf Etholen and his contemporaries in the National Museum of Finland. National Board of Antiquities.
- Wallunga, June. Artist from Gambell. Personal communication, January, 1994.
- Wallunga, Nancy. Hair embroiderer from Gambell. Personal communication, January, 1994.
- Ward, P. R. (1976). Getting the bugs out. Victoria, BC: British Columbia Provincial Museum.
- Welters, L. (1992). Greek folk dress: Application of the ethnohistorical method. Clothing and Textiles Research Journal, 10 (3), 29-35.
- Williamson, V. H. H. (1951). Determinations of hairs by impressions. Journal of Mammalogy, 32 (1), 80-84.
- Willoughby, C. C. (1905). Textile fabrics of the New England Indians. American Anthropologist, n.s. 7, 85-93.
- Wyatt, M. P. (1983). Problems in conservation of Alaskan ethnographic material. Unpublished masters thesis, University of Alaska, Anchorage.
- Young, D. E. (1985). The need for a cognitive approach to the study of material culture. Culture, V (2), 53-67.

Appendices

Appendix A

Partial glossary of terms

Southwest Alaskan Yuit	the Southwestern Alaskan Yuit reside south of Norton Sound in the area between the Yukon and Kuskokwim Rivers, they speak several dialects of the Yupik language (Fitzhugh, 1988, p. 46). (see Appendix E)
Aleut	the Aleut are located on the Aleutian Islands and western tip of the Alaskan Peninsula.
Applied Work	"the addition of fabrics or embroidered motifs to the surface of a ground material to form a design" (Clabburn, 1976, p. 16).
Appliqué	"a bundle of hairs ... laid on the surface to be attached at intervals by a sinew or cotton thread stitched over the hair at right angles to it (see also Couching) (Turner, 1976, p. 31).
Artifact	"comes from Latin <i>arte</i> , meaning skill, and <i>factum</i> , meaning something done, at least includes an indirect reference to a human being (an <i>artificer</i>) in its meaning" (Schlereth, 1985, p. 3). "objects made ... through the application of technological processes.... movable pieces rather than structures, and is concerned with inorganic or dead materials" (Pearce, 1986, p. 198).
Asiatic Yuit	those indigenous peoples who live on the Chukchi Peninsula, northeastern tip of Russia, and St. Lawrence Island in Alaska (Hughes, 1984a, p. 243). (see Appendix E)
BIA	Bureau of Indian Affairs
CHIN	Canadian Heritage Information Network; a museum data base set-up to provide access to artifact information in collections throughout Canada.

Chukchi	Paleo-asiatic group with two major divisions: the reindeer Chukchi and the Maritime Chukchi which maintained a constant exchange of goods (Graburn & Strong, 1976, p.58). The closest neighbours to the Chukchi are the Far East Russian Yuit to the east and the Koryak to the south. The Chukchi and Koryak are culturally similar, in that, their languages are mutually intelligible (Arutiunov, 1988, p. 39). (see Appendix E)
Circumpolar North	those regions of the northern hemisphere whose lands are characterized by tundra and tiaga (Graburn & Strong, 1973, p. 1).
Close Herding	when reindeer herders constantly remain with and tend to the herd.
Couching	"technique in which a thread of any thickness is sewn onto the ground material by means of a different and generally finer thread visible as a pattern" (Clabburn, 1976, p. 68).
Eskimoan	the general linguistic term encompassing all Yuit, Inuit, and Aleut groups.
Far East Russian Yuit	are located on the Chukotka Peninsula in the Far East of Russia. They have cultural traits similar to Paleo-Asiatic groups (i.e. Chukchi) and St. Lawrence Island (Hughes, 1984b, p. 249). (see Appendix E)
Footcandles	English unit of measurement of light intensity, one footcandle equals one lumen per square foot (Thomson, 1990, p. 20).
Gambell City Council	"chartered under the laws of the State of Alaska and possessing powers of taxation, business development, provision of services, and other powers" (Robbins, 1988, p. 98).
Hair	multicellular structure with three components: "the flattened outer cuticle cells; the long many-sided, central cortical cells, and the inner network of medulla cells" (Florian et al., 1990, p. 54).
Housewife	Housewives (<i>p/</i>), "a small bag in which women ... store their needles, awls, bootsole creasers, and scrapers" (Fitzhugh and Kaplan, 1982, p. 132)

IRA Council	Indian Reorganization Act Council is one of three governing bodies in the villages on St. Lawrence Island. The council is non-profit and relies on aid from grants, contracts, and awards from the federal government. The IRA Council has "broad powers of Indian tribal councils (business development, taxation, contracting, land governance, etc.)" (Robbins, 1988, p. 98).
Iñupiat	Iñupiaq speaking people of northern and northwestern Alaska.
Kamleika	A water-proof protective outer garment of sea mammal intestines worn by the Aleut peoples in Alaska (Black & Liapunova, 1988, p. 56).
Keratin	" a special form of fibrous proteins providing protective outer animal coverings, eg, fur, wool, hair, and feathers, and external appendages, such as claws, horns, nails, and quills. Keratins are durable, insoluble, chemically unreactive, and suited to exposure to severe environmental conditions" (Kroschwitz, 1990, p. 505).
Koryak	a Paleo-asiatic indigenous group who inhabit the "northern regions of Kamchatka and adjacent mainland" (Arutiunov, 1988, p. 31). They are divided into reindeer and maritime groups, similar to the Chukchi. (see Appendix E)
Material Culture Study	"is the study through artifacts of the beliefs -- values, ideas, attitudes, and assumptions -- of a particular community or society at a given time" (Prown, 1982, p. 1).
Material Culture	"is made up of tangible things crafted, shaped, altered, and used across time and across space. It is inherently personal and social, mental and physical" (Bronner, 1985, p. 1).
Museum	"institutions which exist to interpret objects from the past and present to each succeeding generation of society" (Taborsky, 1990, p. 50).
Needlework	"any form of embroidery, plain sewing, or machine sewing that is done with a sewing or machine needle" (Clabburn, 1976, p. 186).

Object	"lack the sense of implied human agency and, unlike artifacts, can be used as an expansive covering term for everything in both the natural and the man-made environment" (Schlereth, 1985, p. 3).
Open Herding	the reindeer are allowed to "run wild ... corralled once a year for counting, marking, and for slaughter" (Rainey, 1941, p. 7)
Protein	"are the basic building blocks of animal skins, silk, and hair (including wool), as well as of feathers, quills, beaks, hooves, and horn. Internal animal parts such as sinew (made from tendons), intestine or gut, and baleen from certain whales, also are composed of protein" (Rose, 1992, p. 117).
Quills	"the quill, which is naturally cream-coloured, is a specialized hair. It is composed mainly of protein and has a spongy interior with a hard outer coating covered by fine scales" (CCI Notes, 1988, p. 1).
Quillwork	"form of embroidery ... using dyed porcupine or bird quills on birch bark or hides" (Clabburn, 1976, p. 219).
Quiver	a case in which to carry arrows.
Reindeer, Domestic	(<i>Rangifer tarandus</i>) differentiated from caribou and wild reindeer by a smaller stature, their ability to be kept in captivity, and their introduction into Alaska (Postell, 1990, p. 90).
Reindeer, Wild	(<i>Rangifer arcticus</i>) "are the northern, Barren Ground caribou of the tundra and taiga forest areas," they are unable to be kept in captivity (Postell, 1990, p. 90).
Ruff	the longer white hair located on the front of the neck to the breast area of the reindeer, caribou, and moose.
Saami	Formerly known as the Lapp people of Sweden, Norway, Finland, and Russia. The Saami were brought to Alaska to teach reindeer husbandry practices to the herders.
Siberia	in official Russian "geographical terminology Siberia extends to the east only far enough to include the Kolyma River system (excluding the easternmost portions)" (Hughes, 1984b, p. 247). (see also Far Eastern Russia) (see Appendix E)

SJM	Sheldon Jackson Museum in Sitka, Alaska
Sivuqaq Native Corporation	governing body in Gambell which has the "powers of land governance and resource control under the terms of the Alaska Native Claims Settlement Act (ANCSA) of 1971 (Robbins, 1988, p. 98).
St. Lawrence Island Yuit	a subset of Asiatic Yuit (excluded from the Far East Russian Yuit) who speak Siberian Yupik language. (see Appendix E)
Tongue Motif	found throughout the north "in the form of semi-ovals, semi-circles or rectangles rounded off on one side" (Ivanov, 1963, p. 24).
UA	University of Alaska Museum in Fairbanks, Alaska
Yukon-Kuskokwim Delta	region in Southwest Alaska located between the Yukon and Kuskokwim Rivers inhabited by Yupik-speaking peoples. (see Appendix E)

Appendix B

The following museum lists were compiled as a reference of museum collections with hair embroidery artifacts. A letter was mailed to museums in the United States, who listed collections pertaining to Native American peoples and northern indigenous groups. Major museums throughout Canada, Europe and Russia were also included in the survey. The lists contain the museums who replied to my request. The museums included in Table B-1 contain one or more hair embroidery artifacts (including hair tufting). The museums included in Table B-2 have an absence of hair embroidery throughout their collection. However, museums often contain hair embroidery artifacts without prior knowledge resulting from improper documentations.

Table B-1. List of museum collections to date with known hair embroidery artifacts (Alphabetized according to U.S.A State/City, Canada Province/City, & Other Country/City).

LOCATION	INSTITUTE
U.S.A.	
Alaska, Anchorage	Anchorage Museum of History and Art
Alaska, Fairbanks	Institute of Alaska Native Arts, Inc.
Alaska, Fairbanks	University of Alaska Museum
Alaska, Juneau	Alaskan State Museum
Alaska, Sitka	Sheldon Jackson Museum
California, Los Angeles	Southwest Museum
California, San Diego	San Diego Museum of Man
Colorado, Boulder	University of Colorado at Boulder
New Jersey, Newark	The Newark Museum
New York, Rochester	Rochester Museum and Science Centre
New York, New York	American Museum of Natural History
New York, New York	National Museum of the American Indian
New York, Salamaca	Seneca - Iroquois National Museum
Ohio, Cincinnati	Cincinnati Museum of Natural History
Ohio, Dayton	Dayton Museum of Natural History

(table continued)

LOCATION	INSTITUTE
Oklahoma, Bartlesville	Woolaroc Museum
Pennsylvania, Philadelphia	University Museum
Wisconsin, Milwaukee	Milwaukee Public Museum
Wyoming, Cheyenne	Wyoming State Museum
CANADA	
Alberta, Calgary	Glenbow Museum
Alberta, Edmonton	Provincial Museum of Alberta
Alberta, Edmonton	University of Alberta, Central Collection, Department of Museum and Collection Services
Alberta, Edmonton	University of Alberta, Clothing and Textiles Collection
Alberta, Edmonton	University of Alberta, Gruhn Bryan Collection
British Columbia, Vancouver	University of British Columbia Museum of Anthropology
British Columbia, Vancouver	Vancouver Museum
Nova Scotia, Halifax	Nova Scotia Museum
Northwest Territories, Fort Smith	Northern Life Museum and National
Northwest Territories, Yellowknife	Prince of Wales Northern Heritage Centre
Ontario, Toronto	Bata Shoe Museum
Ontario, Toronto	Royal Ontario Museum
Quebec, Hull	Canadian Museum of Civilization
Quebec, Montreal	McCord Museum of Canadian History
EUROPE	
England, London	The British Museum of Mankind
England, Oxford	Pitt Rivers Museum
Finland	National Museum of Finland
Netherlands, Leiden	National Museum of Ethnology
Russia, Leningrad	Museum of Anthropology and Ethnology

Table B-2

List of museum collections to date without known hair embroidery artifacts
(Alphabetized according to U.S. State/City, Canada Province/City, & Other Country/City).

LOCATION	INSTITUTE
U.S.A.	
Alabama, Mobile	Museum of the History of Mobile
Alaska, Anchorage	Alaska Association for Historic Preservation
Alaska, Anchorage	National Park Service Regional Office
Alaska, Ketchikan	Ketchikan Museum Department
Alaska, Seward	Resurrection Bay Historical Society, Inc.
Alaska, Valdez	Valdez Museum
Arizona, Flagstaff	Museum of Northern Arizona
California, Eureka	Clarke Memorial Museum
California, La Puente	La Puente Valley Historical Society
California, Los Angeles	Natural History Museum of Los Angeles County
California, Pine Grove	Chaw'Se Association Indian Grinding Rock State Historic Park
California, San Francisco	The Fine Arts Museum of San Francisco
Colorado, La Junta	Koshare Indian Museum, Inc.
Connecticut, Hartford	A Museum and Library of Connecticut History
Connecticut, New Haven	Peabody Museum of Natural History
Connecticut, New London	Lyman Allyn Art Museum
Connecticut, Waterbury	Mattatuck Museum
Delaware, Winterthur	The Henry Francis duPont Winterthur Museum
Florida, Coral Gables	The Lowe Art Museum
Florida, Flovilla	Indian Springs State Park
Florida, Pensacola	Pensacola Historic Society Resource Center and Museum
Hawaii, Honolulu	Honolulu Academy of Arts
Idaho, Pocatello	Idaho Museum of Natural History

(table continued)

LOCATION	INSTITUTE
Illinois, Carbondale	University Museum at Southern Illinois University at Carbondale
Illinois, Springfield	Illinois State Museum
Iowa, Sioux City	Sioux City Public Museum
Maine, Brunswick	The Peary-MacMillan Arctic Museum
Michigan, Ann Arbor	Museum of Anthropology at The University of Michigan
Michigan, Lansing	Michigan Historical Museum
Mississippi, Jackson	Mississippi State Historical Museum
Missouri, Columbia	State Historical Society of Missouri
Missouri, Kansas City	Kansas City Museum
Nebraska, Chadron	Museum of the Fur Trade
New Mexico, Santa Fe	Wheelwright Museum of the American Indian
New Jersey, Madison	Museum of Early Trades and Crafts
New York, Brooklyn	The Brooklyn Museum
Oklahoma, Anadarko	Indian City U.S.A.
Oregon, Klamath Falls	Favell Museum
Rhode Island, Providence	The Rhode Island Historical Society
South Dakota, Pine Ridge	The Heritage Center, Inc. Red Cloud Indian School
South Dakota, Marvin	American Indian Culture Research Center
South Dakota, Rapid City	Sioux Indian Museum and Crafts Center
Utah, Provo	Museum of Peoples and Cultures
Vermont, Burlington	Robert Hull Fleming Museum
Washington, Ellensburg	Central Washington University Department of Anthropology and Museum
Washington, D.C.	Indian Arts and Crafts Board
CANADA	
British Columbia, Burnaby	Department of Archaeology Simon Fraser University
British Columbia, Dawson Creek	Dawson Creek Art Gallery
British Columbia, Fraser Lake	Village of Fraser Lake
British Columbia, Prince Rupert	Museum of Northern British Columbia

(table continued)

LOCATION	INSTITUTE
Northwest Territories, Arctic Bay	Quasaapaa Historical Society
Northwest Territories, Fort Good Hope	Dene Community Council
Northwest Territories, Fort Simpson	Nahanni National Park
Northwest Territories, Norman Wells	Colville Lake Museum
Yukon, Whitehorse	Macbride Museum Society
EUROPE	
Ireland, Dublin	National Museum of Ireland

Note: The list of museums containing hair embroidery within their collection is an ongoing process. I wish to continue my search for artifacts with hair embroidery after the completion of this project. Please contact me with any amendments to this list of museums; your contribution will be greatly appreciated.

Please contact me at:

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 Ste. Genevieve, Missouri 63670
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Appendix C

Table C-1

Photograph and archival collections observed at the Archives, Alaska and Polar Regions Department, Elmer E. Rasmuson Library, University of Alaska Fairbanks providing information concerning my research on hair embroidery

Marge Heath - Archivist

Photograph Collections

- 1) Dr. Otto W. Geist
 - 2) Lomen Brothers Collection
 - 3) William Van Valin Photographs
 - 4) Scarbrough Collection Photographs
 - 5) Vertical File Photographs
 - 6) All microfiche photographs
-

Archive Collections

- 1) Dr. Otto W. Geist
 - 2) Florence Nupok's Drawings
-

Table C-2

Photograph and archival collections viewed at the Archives, Alaska and Polar Regions Department, Elmer E. Rasmuson Library, University of Alaska Fairbanks without information on hair embroidery

Marge Heath - Archivist

Photograph Collections

- 1) Sheldon Jackson Photographs on Microfilm
 - 2) Lake Fairbanks
-

Archive Collections

- 1) Alaska Commercial Company
 - 2) St. Lawrence Island Journals by Edger Campbell
(1898-1906)
 - 3) Henry Collens Collection
 - 4) Andrews, Clarence L.
-

Table C-3

Photograph collections viewed at the Sheldon Jackson College Archives without providing viable information regarding my research on hair embroidery

Nancy Ricketts - Archivist

Photograph Collection

- 1) Billman Collection
 - 2) King Collection (86018)
 - 3) Alaska Native Peoples (88054)
 - 4) Alaska, Misc. (88065)
 - 5) Arctic Native Brotherhood
Addresses: Nome - Box 333
Anchorage - Box 1134 (?)
-

Appendix D

The following artifact worksheets represent the formal and notes taken during my attribute analysis of the hair embroidered artifacts. The artifacts from the University of Alaska Museum and the Sheldon Jackson Museum are represented in worksheets D-1 through D-18.

 Guide for Artifacts in Appendix D

W.S. #	Artifact #	Region	P. #
D-1	UA 64.21.136	St. Lawrence Island	108
D-2	UA 64.21.137	St. Lawrence Island	111
D-3	UA 64.21.139	St. Lawrence Island	113
D-4	UA 64.21.839	St. Lawrence Island	116
D-5	UA 64.21.859	St. Lawrence Island	118
D-6	UA 610.5917	Yukon-Kuskokwim Delta	121
D-7	UA 610.M.5918	Yukon-Kuskokwim Delta	123
D-8	UA 610.5920	Yukon-Kuskokwim Delta	125
D-9	UA 67.98.133	Unknown	127
D-10	SJM II.H.18	Yukon-Kuskokwim Delta	129
D-11	SJM II.H.28	Yukon-Kuskokwim Delta	131
D-12	SJM II.H.79	Yukon-Kuskokwim Delta	133
D-13	SJM II.B.78	Andreofski, Alaska	135
D-14	SJM.II.N.20	Cape Sertze, Siberia	137
D-15	SJM II.N.31a&b	Siberia (?)	140
D-16	SJM II.N.92a&b	Siberia	142
D-17	SJM II.X.747	Unknown	144
D-18	SJM II.X.556	Unknown	146

ARTIFACT WORKSHEET # D-1**Museum:** University of Alaska Museum at Fairbanks**Artifact:** Belt w/ 2 pouches **Date:** 1/12/94**Accession:** # UA 64.21.136 **Acc. Date:** N/A**Location of artifact w/in collection:** in Storage**Donor:** Otto W. Geist**Donor's address (if available):** N/A**Collector (if known):** Otto W. Geist**Object name:** Personal gear: Belt, Men's**Provenance:** St. Lawrence Island (Gambell), Alaska**Detailed description of the artifact:** Tanned sealskin belt with two pouches one of which has a knife sheath. The belt buckle is walrus ivory. The embellishment on the belt and pouch consists of hair embroidery with a limited amount of skin embroidery. The embellishment motifs are primarily geometric designs with occasional floral motifs. The collector's name 'Otto Geist', is embroidered onto the belt. The underside of the belt is embroidered to the point that it was attached to the backing with the belt holes.**Artist/Cultural Affiliation:** St. Lawrence Island Yuit**Date:** ~1927**Condition:** fair condition - the reindeer hair has been damaged from the abrasion caused by the pouch straps. The sealskin has minimal damage.**Function:** According to the stress appearance on the buckle holes, the belt was occasionally worn. This belt style was intended to be worn around the outer garment bloused over the belt with only the pouches visible in front.**Materials:** dyed sealskin, bleached sealskin, reindeer hair, red and green cotton thread, walrus ivory, glass beads, steel-bladed knife with an ivory handle.**Construction Methods:** The belt was backed with sealskin applied after the embroidery was complete. The pouch and knife sheath are attached to the belt between the two layers. The second pouch was removable and attached by the straps. Both running and whip stitches are used in the construction of the belt and pouches.**Embroidery techniques:** A wide solid line of hair embroidery was constructed by crisscrossing the hair around stitches. Another embroidery technique used was a twisted simple line of hair couched onto the skin. The third embroidery technique involves a simple line of hair couched to the skin without being twisted.**Detailed description of the embroidery:** See attached sketches for intimate details of the embroidery stitches.**Colour(s) used:** White hair embroidery, green and red cotton thread for the embroidery.**Other embellishment techniques used:** Each pouch has two glass trade beads attached on the front strap for embellishment. The belt is outlined with bleached sealskin to give a colour contrast. The ivory belt buckle is dyed to provide an orange appearance.**Identification Technique:** The artifact was located prior to my arrival and placed on the ethnology work table. The artifact was identified with hair embroidery previously.

Accession # UA 64.21.136

109

Description of motif: The motifs used in embellishment are a combination of geometric and floral motifs. The name 'Otto Geist' is embroidered in cursive on the belt.

Function of the artifact both its uses and roles (if known): The belt was entirely functional but appears to have occasionally been worn. The amount of embellishment indicates that the belt was given as a special gift to be worn on special occasions.

Dimensions of the artifact:

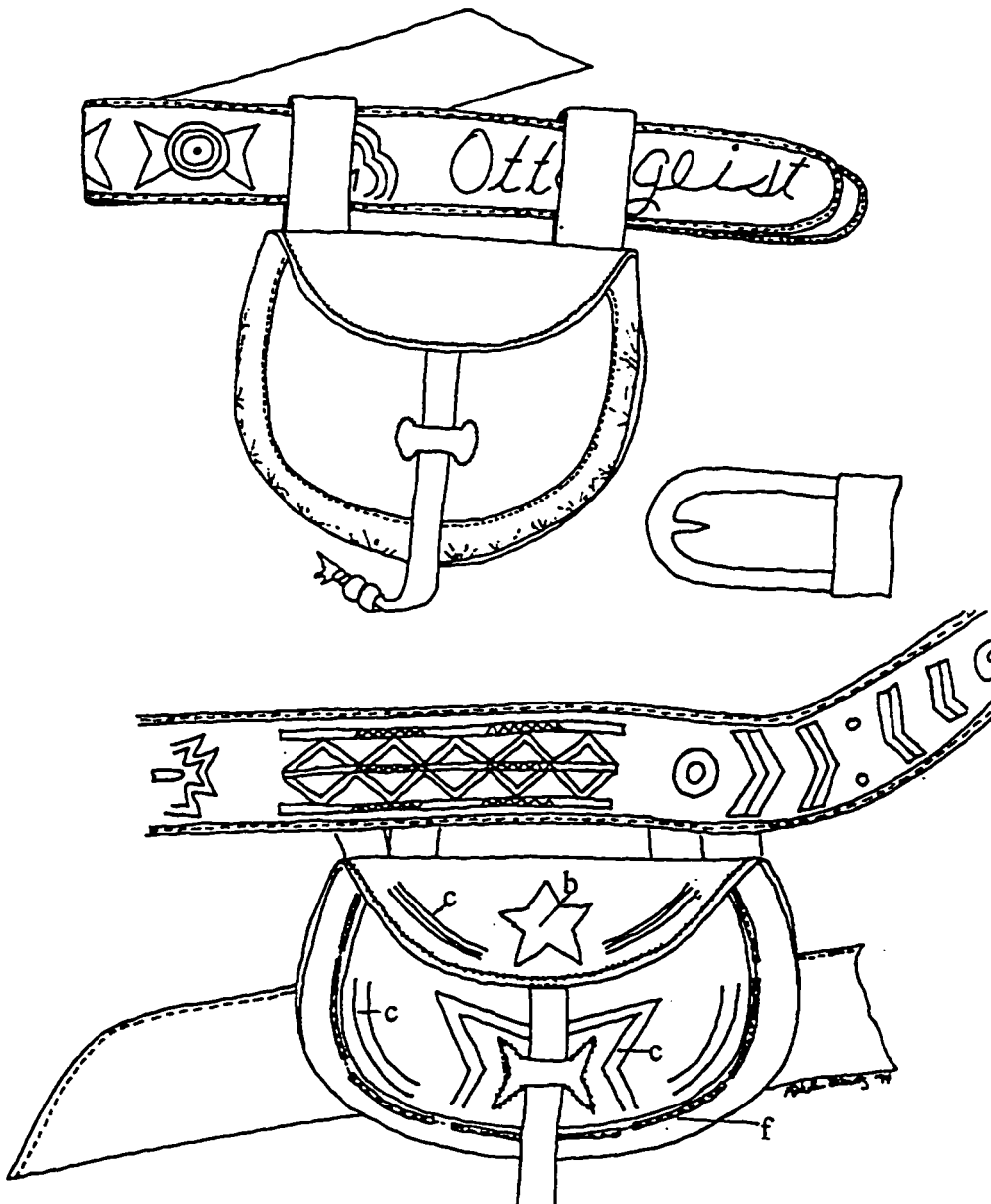
Height: 4.5 cm

Width: 106 cm w/ buckle

Other: Pouch: ~10 cm in Height

Pouch w/ knife sheath: ~7.5 cm in Height

Sketches: Credit to Michelle Zerwig



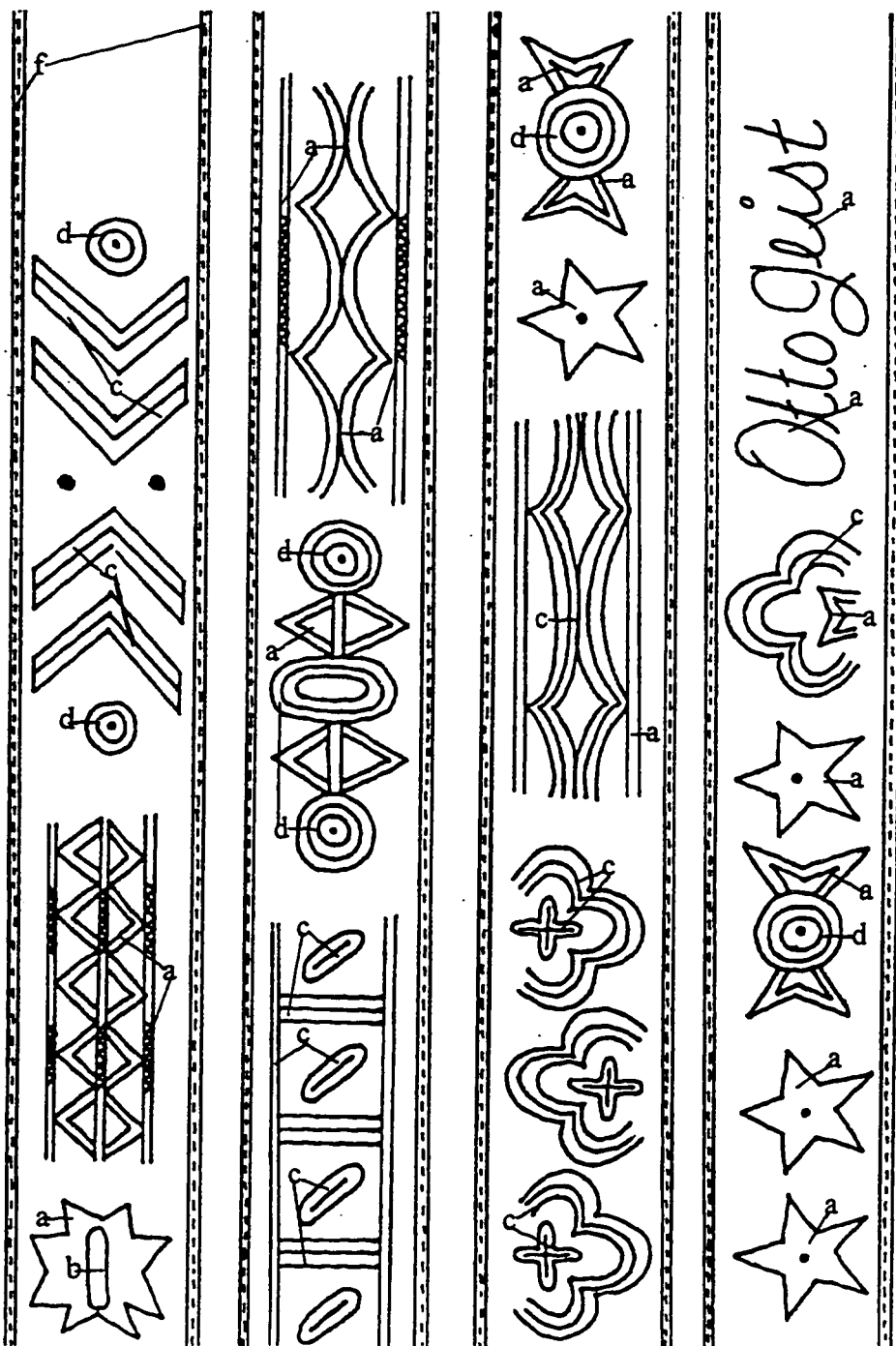
ARTIFACT WORKSHEET #D-1 (cont.)

Museum: University of Alaska Museum at Fairbanks

Artifact #: UA 64.21.136 **Date:** 1/12/94

Sketches:

#	a	b	c	d	e	f



ARTIFACT WORKSHEET # D-2**Museum:** University of Alaska Museum at Fairbanks**Artifact:** Belt with pouch **Date:** 2/11/94**Accession:** # UA 64.21.137 **Acc. Date:** N/A**Location of artifact w/in collection:** on Display in main Gallery**Donor:** Otto W. Geist**Donor's address (if available):** N/A**Collector (if known):** Otto W. Geist**Object name:** Personal gear: belt, men's**Provenance:** St. Lawrence Island (Gambell), Alaska**Detailed description of the artifact:** Tanned sealskin belt with one pouch attached to the belt. The belt has an ivory buckle and is decorated with reindeer hair and thread embroidery. The belt is outlined with a small strip of bleached sealskin which is attached with sinew. The embellishment motifs on the belt and pouch represent primarily geometric designs rather than floral ones. The belt is lined with tanned sealskin concealing the embroidery stitches. The underside of the belt is embroidered to the point that it attached to the backing with the belt holes.**Artist/Cultural Affiliation:** St. Lawrence Island Yuit**Date:** ~1927**Condition:** Very good - There are several places of deterioration on the belt but far less than the other artifacts studied.**Function:** The belt would have functioned as a hunting belt. The style of belt with pouches has been pictured to be worn around the outer garment, bloused over the belt with only the pouches visible.**Materials:** tanned sealskin, bleached sealskin, reindeer hair, cotton thread: tan and red, glass beads, walrus ivory, and sinew.**Construction Methods:** The belt was embroidered before the backing was attached. The pouch was attached between the two belt layers. Both running and whip stitches were used in the belt construction.**Embroidery techniques:** A wide solid line of hair embroidery constructed by crisscrossing hair around stitches was used. Another embroidery technique used was a twisted simple line of hair couched onto the skin.**Detailed description of the embroidery:** See attached sketches for intimate details of the embroidery stitches.**Colour(s) used:** White hair embroidery, red and tan cotton thread for the embroidery.**Other embellishment techniques used:** The pouch has three glass trade beads attached for embellishment. The belt is outlined with bleached sealskin to give a colour contrast.**Identification Technique:** I located this artifact on display in the main gallery. Hair embroidery was unidentified in the artifact description.

Accession # UA 64.21.137

Description of motif: The motifs used in embellishment are a combination of geometric, floral, and simple line motifs.

Function of the artifact both its uses and roles (if known): The belt was entirely functional and appears to have been occasionally worn. The amount of embellishment indicates the belt was given as a special gift or worn for special occasions.

Dimensions of the artifact:

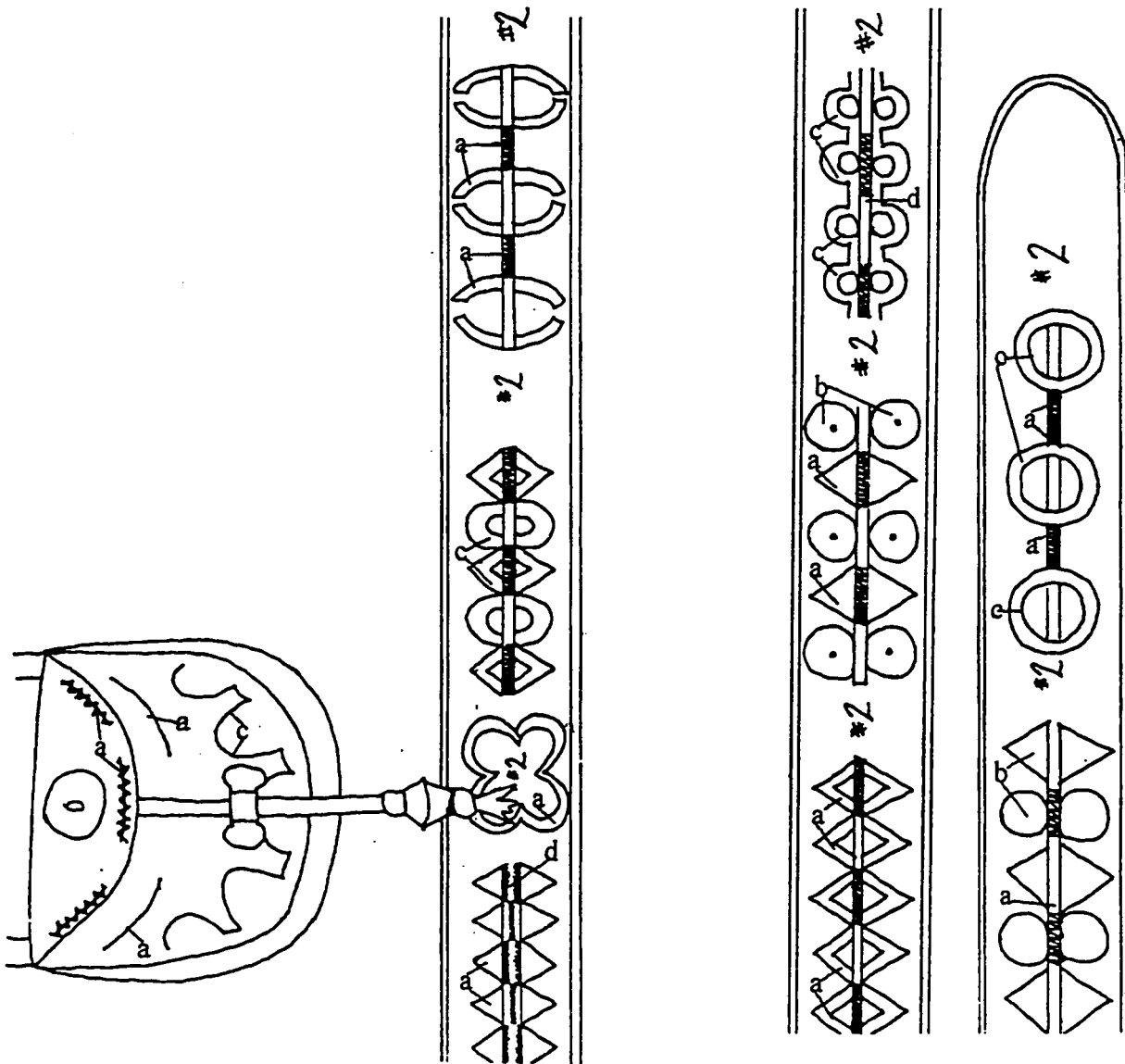
Height: N/A

Width: N/A

Other: N/A

Sketches: Credit to Michelle Zerwig

#	a	b	c	d



ARTIFACT WORKSHEET D-3**Museum:** University of Alaska Museum at Fairbanks**Artifact:** pouch**Date:** 1/12/94**Accession #** UA 64.21.139 **Acc. Date:** ~1927**Location of artifact w/in collection:** N/A**Donor:** Otto W. Geist**Donor's address (if available):** N/A**Collector (if known):** Otto W. Geist**Object name:** Personal gear: pouch**Provenance:** St. Lawrence Island (Gambell), Alaska.

Detailed description of the artifact: Non-functional sealskin pouch (w/o hair) has both beaded and hair embroidered floral motifs. The front of the pouch, made of tanned sealskin, is embroidered with reindeer hair and colour thread. The pouch front is trimmed with a thin twisted strip of bleached sealskin. The back of the pouch, made of bleached sealskin, is beaded and trimmed with a pink strip of twisted sealskin. The flap is trimmed with pink cotton fabric, lined with calico fabric, and secured with a brown plastic (?) button. The straps are made of tanned sealskin with a bleached sealskin strip applied around the edges with a running stitch.

Artist/Cultural Affiliation: St. Lawrence Island Yuit**Date:** ~1927

Condition: Good condition, occasional pencil marks, used to mark the design motifs, are apparent. The hair embroidery and beading remain intact and exhibit occasional indications of use.

Function: non-functional pouch (perhaps made for gift or trade)**Materials:** Bleached sealskin, tanned sealskin, pink cotton fabric, calico fabric, cotton thread, sinew, beads, reindeer hair, and plastic (?) button.**Construction Methods:** running stitch, whip stitch, and button hole stitch.

Embroidery techniques: A wide solid line of hair embroidery constructed by crisscrossing hair around stitches. Another technique used is a twisted simple line of hair couched onto the skin.

Detailed description of the embroidery: The larger 8 of 12 embroidered motifs are decorated using the crisscross stitch technique, the twisted simple line technique, and the crisscross technique again. This design uses ~3-5 reindeer hair. The remaining four smaller motifs which outline the central motif use the crisscross technique alone (~3-5 hairs).

Colour(s) used: white reindeer hair, pink and white trimmings, several colours of beads and red and green thread

Other embellishment techniques used: beading, sealskin embroidery

Identification Technique: The artifact was located prior to my arrival and placed on the ethnology work table. The artifact was identified with hair embroidery.

Artifact # UA 64.21.139

Description of motifs: The motifs are both floral and geometric.

Function of the artifact both its uses and roles (if known): the artifact was fashioned after a pouch that would be placed on a belt. The design of this pouch prohibits it from being useful. The item appears to be a gift or tourist item that is intended for show.

Dimensions of the artifact:

Height: 21 cm

Width: 16 cm

Other: N/A







ARTIFACT WORKSHEET #D-3

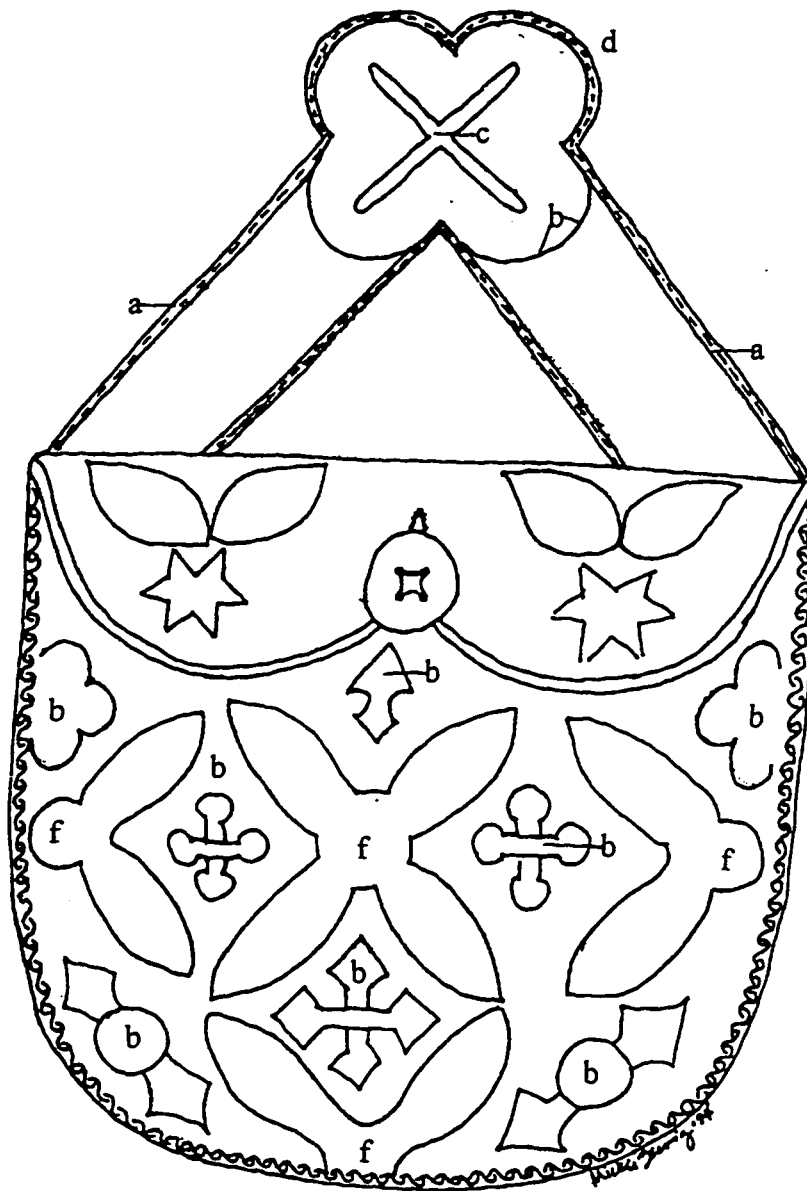
Museum: University of Alaska Museum at Fairbanks

115

Artifact #: UA 64.21.139 **Date:** 1/12/94

Sketches: Credit to Michelle Zerwig

#	a	b	c	d	e	f
						



ARTIFACT WORKSHEET # D-4**Museum:** University of Alaska Museum at Fairbanks**Artifact:** Bag **Date:** 1/13/94**Accession:** # UA 64.21.839 **Acc. Date:** N/A**Location of artifact w/in collection:** The storage box is too small for the artifact causing abrasion when the artifact was removed.**Donor:** Otto W. Geist (?) Same set of accession numbers**Donor's address (if available):** N/A**Collector (if known):** Otto W. Geist (?)**Object name:** Personal gear: Bag, Tundra Swan Foot**Provenance:** Togiak, Bristol Bay, Alaska**Detailed description of the artifact:** The bag is made from the foot of a tundra swan. The top casing on the bag is constructed from a plain weave red cotton calico and lined with white fabric. The rest of the bag appears unlined. The utilization of the bones of the foot for embellishment give the bag its unusual shape. Two simple lines of hair embroidery along with triangle pieces of gut are incorporated into the overall design. The bag has eight claws for ornamentation; two on the back and six along the bottom edge. Tundra swan skin appears scaly with larger scales on or near the bones and smaller scales on the webbing.**Artist/Cultural Affiliation:** Yuit**Date:** 1927**Condition:** fair - the hair embroidery appears damaged by an insect infestation. Insect residue was visible around the hair embroidery.**Function:** possibly a tobacco pouch**Materials:** Tundra swan foot, reindeer hair, cotton fabric, and gut.**Construction Methods:** The natural shape of the foot was utilized by stitching the openings closed. The back of the bag has a Y-shaped stitching pattern while the front has minimal stitching. The embellished top portion was attached to the foot with a running stitch.**Embroidery techniques:** The embroidery technique employed consists of a twisted simple line of hair couched with thread onto the bag.**Detailed description of the embroidery:** See the sketches for full embroidery details.**Colour(s) used:** White reindeer hair**Other embellishment techniques used:** The natural shape of the foot and the claws are incorporated into the overall design. Triangles of gut are used for embellishment.**Description of motif:** use of geometric triangles and line embroidery.**Function of the artifact both its uses and roles (if known):** Possibly a tobacco pouch.**Identification Technique:** The artifact was located prior to my arrival and placed on the ethnology work table. The artifact was identified with hair embroidery.

ARTIFACT WORKSHEET # D-4

Museum: University of Alaska Museum at Fairbanks

Artifact #: UA 64.21.839 **Date:** 1/13/94



Dimensions of the artifact:

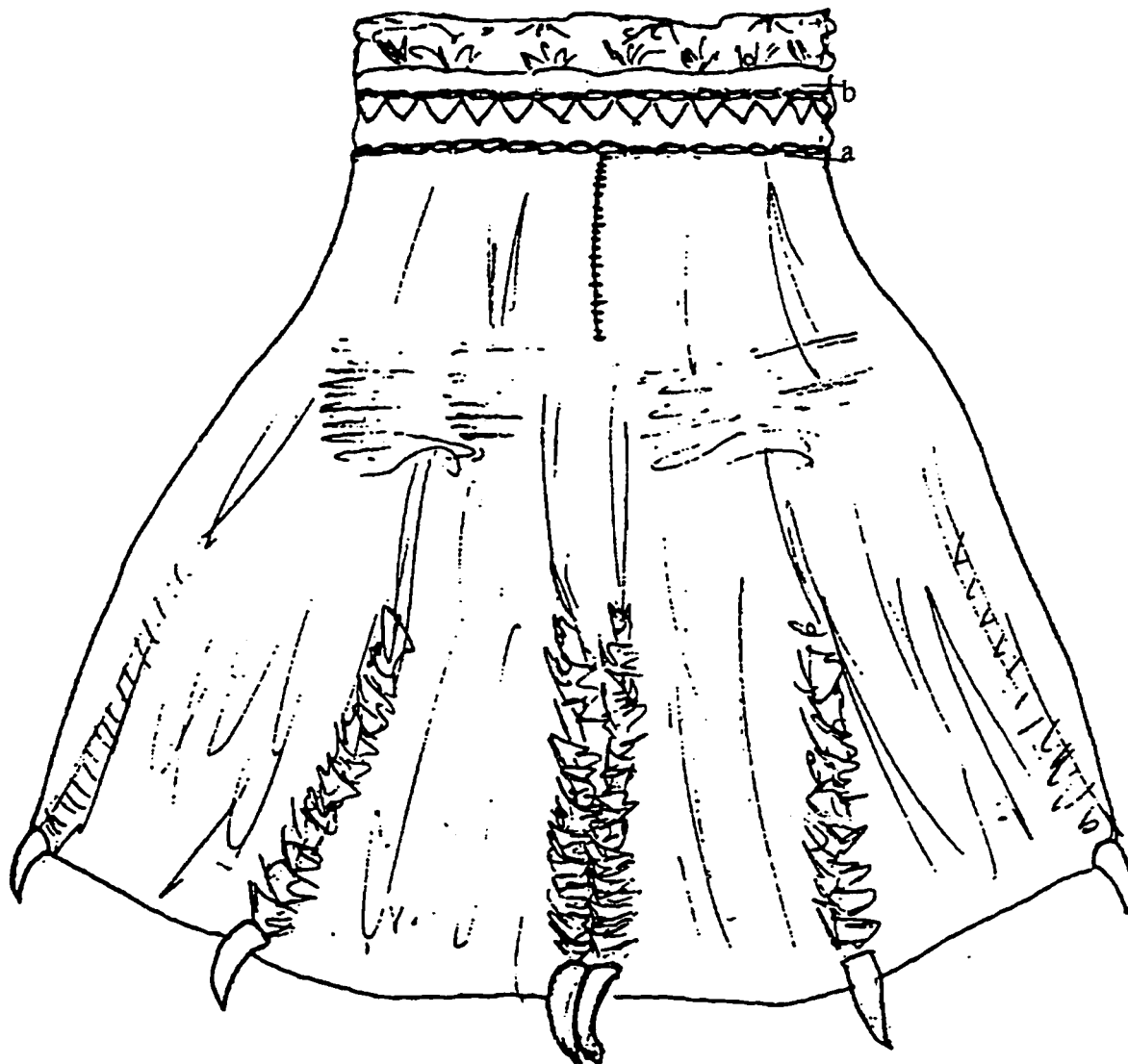
Height: 19.5 cm

Width: Top: 8.5 cm

Other: Bottom edge: 35 cm

Sketches: Credit to Michelle Zerwig

#	a	b
		



ARTIFACT WORKSHEET # D-5

118

Museum: University of Alaska Museum at Fairbanks

Artifact Belt **Date:** 1/12/94

Accession # UA 64.21.859 **Acc. Date:** N/A

Location of artifact w/in collection: Storage box

Donor: Otto W. Geist

Donor's address (if available): N/A

Collector (if known): Otto W. Geist

Object name: personal gear: Belt, Men's

Provenance: St. Lawrence Island (Gambell), Alaska

Detailed description of the artifact: Men's sealskin belt with hair embroidery employing geometric and floral designs. The belt has a walrus ivory buckle without buckle holes.

Artist/Cultural Affiliation: St. Lawrence Island Yuit

Date: ~1927

Condition: Poor, Damage to hair embroidery resulting from pest infestations.

Function: Non-functional: due to lack of holes on the belt to attach the buckle.

Materials: tanned sealskin, walrus ivory, reindeer hair, cotton thread (various colours), and sinew

Construction Methods: The belt consists of two layers which are attached together with a running stitch. The back portion of the belt was applied after the embroidery was complete. The end of the belt opposite the buckle is separated from the top for 27 cm.

Embroidery techniques: A wide solid line of hair embroidery constructed by crisscrossing the hair around stitches is used. The second embroidery stitch is a twisted simple line of hair couched onto the skin with contrasting cotton thread.

Detailed description of the embroidery: The embroidered motifs display the crisscross stitching method, the twisted simple line, and the crisscross stitch again. These designs use ~4-5 reindeer hairs for the embellishment.

Figure 1: appears 3 times on the belt

Figure 2: appears 4 times on the belt

Figure 3: appears 6 times on the belt

(See sketches for details)

Colour(s) used: white reindeer hair, red and blue cotton thread attached with green and brown thread.

Other embellishment techniques used: None

Description of motif: The motifs are floral and geometric, the latter being more prominent.

Function of the artifact both its uses and roles (if known): non-functional because of lack of holes for the belt buckle.

Dimensions of the artifact:

Height: 4 cm

Width: 114 cm

Identification Technique: The artifact was located prior to my arrival and placed on the ethnology work table. The artifact was identified with hair embroidery.

ARTIFACT WORKSHEET # D-5

Museum: University of Alaska Museum at Fairbanks

Artifact #: UA 64.21.859 **Date:** 1/12/94

Sketches: Credit to Michelle Zerwig

Figure 1: Appears 3 times on the belt

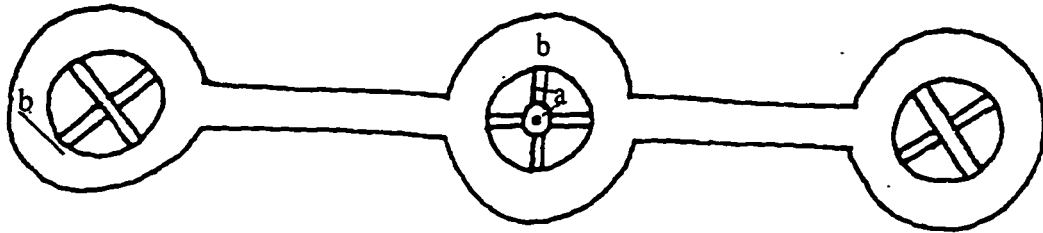


Figure 2: Appears 4 times on the belt

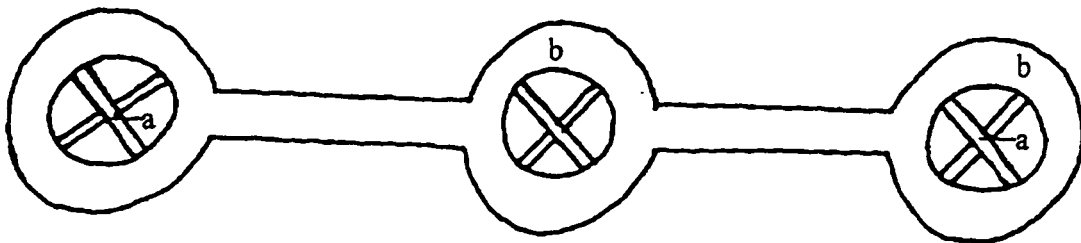
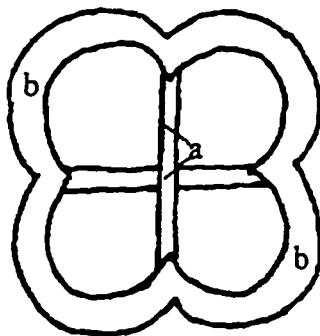


Figure 3: Appears 6 times on the belt






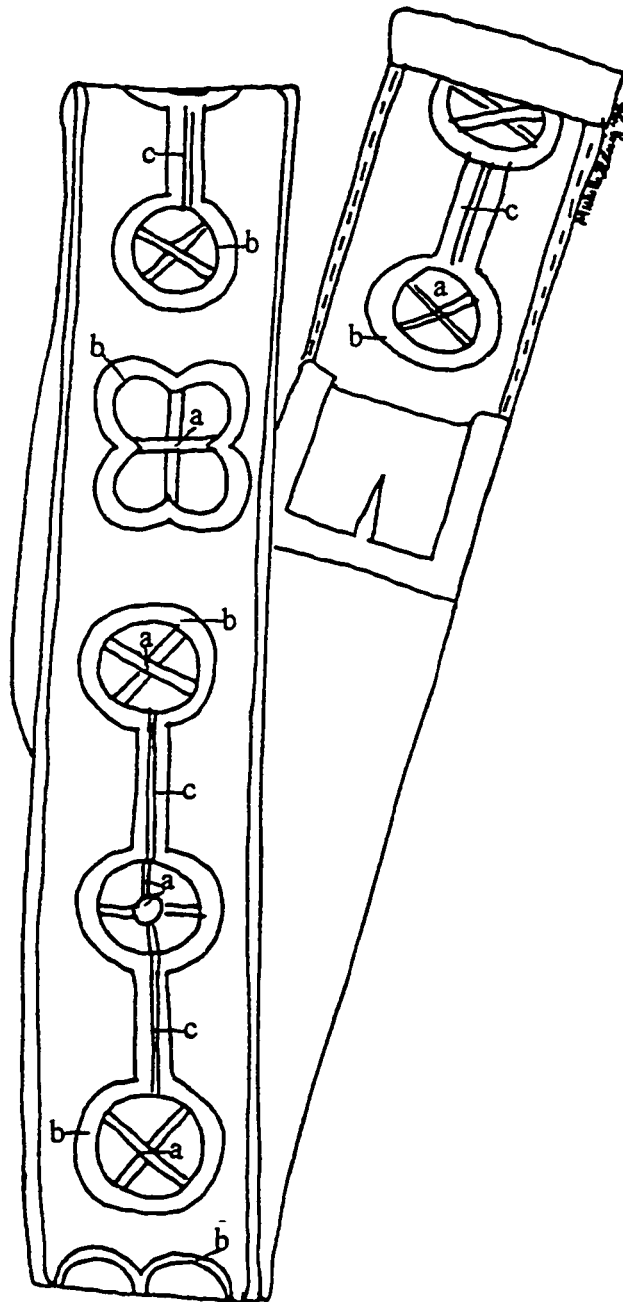
ARTIFACT WORKSHEET # D-5

Museum: University of Alaska Museum at Fairbanks

Artifact #: UA 64.21.859 **Date:** 1/12/94

Sketches: Credit to Michelle Zerwig

#	a	b	c
			



ARTIFACT WORKSHEET # D-6

121

Museum: University of Alaska Museum at Fairbanks

Artifact: Salmon skin bag **Date:** 1/13/94

Accession: #UA 610-5917 **Acc. Date:** N/A

Location of artifact w/in collection: Storage box

Donor: Lola Albright Heron and her husband, John Albright

Donor's address (if available): residents of Bethel, AK

Collector (if known): Lola Albright Heron & John Albright

Object name: Personal gear: Bag, Salmon skin

Provenance: Southwestern Alaska; Yukon/Kuskokwim Delta

Detailed description of the artifact: The salmon skin bag is trimmed in unborn seal hair and sewn together with sinew. The back has salmon scales remaining with a piece of gut(?) covering the fin hole. The gut(?) embellishment on the back is decorated with a simple line of hair embroidery. The pouch interior is dyed with alder bark(?) to give a reddish colour, the skin appears 'hairy'. The front of the bag is decorated with hair embroidery and trimmed with baby seal fur. The bottom three motifs appear to be gut, or some similar material, and decorated with hair embroidery. The top three motifs appear to be the dyed inner salmon skin. The hole on the flap of the bag is gut(?) with two rows of hair embroidery for embellishment.

Artist/Cultural Affiliation: Yuit

Date: 1920s/1930s

Condition: Poor - pest residue can be visibly on the bag surface.

Function: This bag appears to be non-functional.

Materials: Salmon skin, dyed salmon skin, un-born seal fur, reindeer hair, sinew, and gut(?).

Construction Methods: The bag was constructed from two pieces of salmon skin. The trimming was applied with a whip stitch.

Embroidery techniques: A technique of hair embroidery where the twisted hair was applied to the skin with a couching stitch. The other technique used is an X-shape design that forms a diamond motif. The hair was secured on all four corners.

Detailed description of the embroidery: See the sketches for the embroidery details.

Colour(s) used: white reindeer hair.

Other embellishment techniques used: None

Description of motif: The motifs on this bag are very interesting. Two of the designs employ the tongue motif. The other motifs are modified geometric designs.

Function of the artifact both its uses and roles (if known): I am uncertain as to the function of this bag.

Dimensions of the artifact:

Height: 19 cm

Width: 21.5 cm

Other: Open: 29.5 cm x 21.5 cm

Identification Technique: The artifact was located prior to my arrival and placed on the ethnology work table. The artifact was identified with hair embroidery.

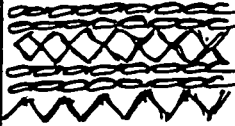
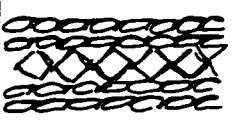
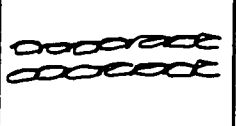

ARTIFACT WORKSHEET # D-6

Museum: University of Alaska Museum at Fairbanks

122

Artifact #: UA 610.5917 **Date:** 1/13/94

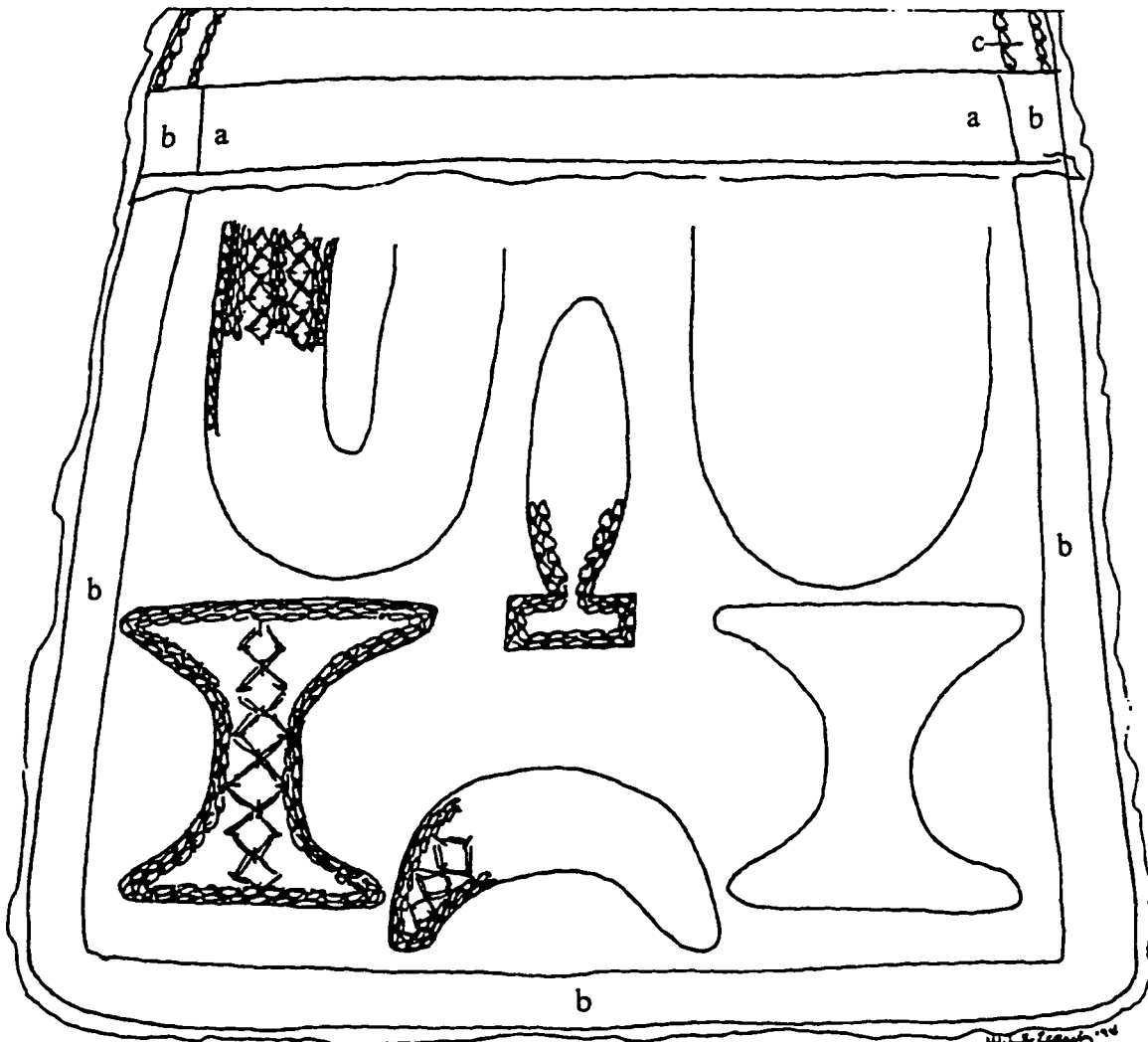
Sketches:

#	a	b	c	d
				

Front View



Back View



ARTIFACT WORKSHEET # D-7**Museum:** University of Alaska Museum at Fairbanks**Artifact:** Pouch **Date:** 1/13/94**Accession:** # UA 610.M.5918 **Acc. Date:** N/A**Location of artifact w/in collection:** Storage box**Donor:** Lola Albright Heron and her husband, John Albright**Donor's address (if available):** residents of Bethel, AK**Collector (if known):** Lola Albright Heron & John Albright**Object name:** Personal gear: pouch, tobacco**Provenance:** Southwestern Alaska; Yukon/Kuskokwim Delta

Detailed description of the artifact: The pouch is constructed of cotton cloth and reindeer fur. The top of the pouch consist of a draw string inside a muslin casing. The casing is attached to a blue and brown twill fabric. A piece of red fabric (~1cm in width) with hair embroidery is placed on top of the twill. The twill fabric (~2.5cm in width) is embellished with hair embroidery and attached to the main body. This intersection is embellished by a strip of red yarn embroidery and a .5cm wide piece of baby seal fur. The main portion of the pouch consists of reindeer fur attached to the twill fabric which is attached to a band of hairless reindeer skin. The back of the pouch repeats the front. The only difference between the front and the back is a ~3cm² piece of twill and melon coloured fabric with hair embroidery centred on the pouch front. All the embroidery is complete before the pouch is constructed. The tobacco pouch is embellished with crude reindeer hair and commercial thread embroidery. The majority of the embroidery is applied onto fabric rather than skin, thus creating a loose appearance. The embroiderers attempt to conceal the beginning and end of the embroidery appears nonexistent.

Artist/Cultural Affiliation: Yuit**Date:** 1920s/1930s**Condition:** Poor - The reindeer fur was almost completely destroyed**Function:** The pouch may have been used to carry tobacco, it shows signs of use.**Materials:** Cotton Muslin, reindeer hair, red plain weave cotton, blue & brown twill, baby seal fur, reindeer fur, reindeer skin, melon coloured fabric.**Construction Methods:** Reindeer fur was attached to the twill fabric with the hair embroidery, other fabrics, and hairless skin attached. The embroidery was applied before completion of the initial pouch construction. All sewing on the pouch utilized commercial thread.**Embroidery techniques:** One embroidery technique used on the pouch consists of a twisted simple line of hairs (~4) couched onto the skin. A series of hair being twisted up and down and held in place by stitches forming a V-shaped detail is used for embroidery.**Identification Techniques:** The artifact was located prior to my arrival and placed on the ethnology work table. The artifact was identified with hair embroidery.

Accession # UA 610.M.5918

Detailed description of the embroidery: See the sketches for the detailed descriptions¹²⁴ of the embroidery throughout the tobacco pouch.

Colour(s) used: white reindeer hair, cotton fabric of blue/brown, red, and melon

Other embellishment techniques used: Yarn embroidery

Description of motif: linear and geometric

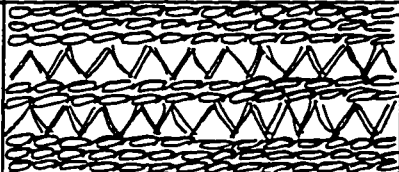
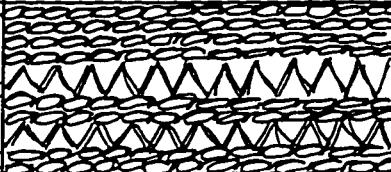
Function of the artifact both its uses and roles (if known): tobacco pouch

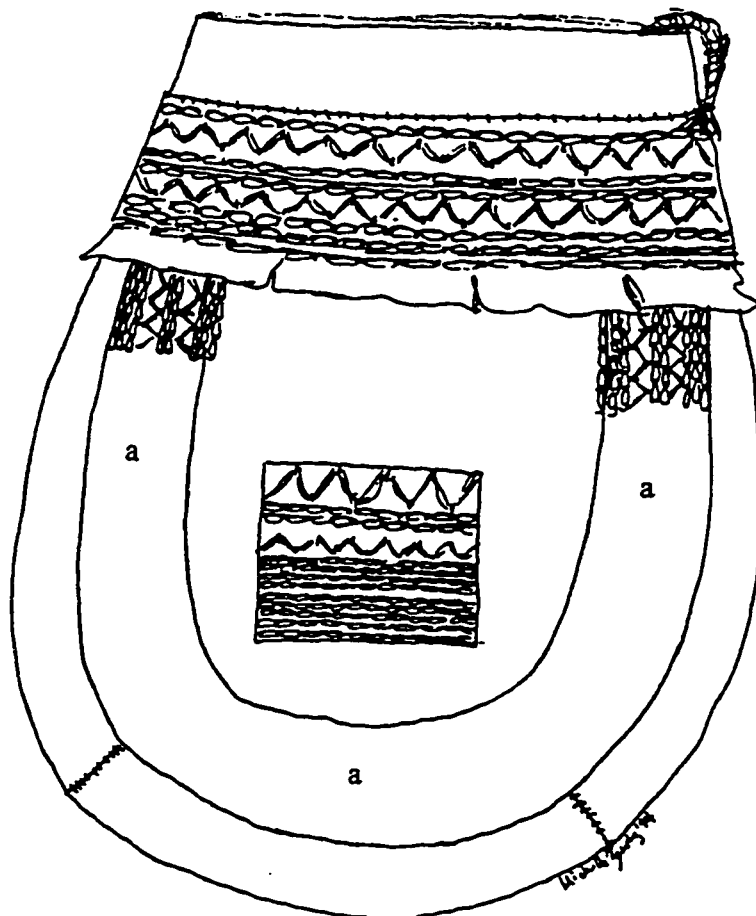
Dimensions of the artifact:

Height: 15.5 cm

Width: 12.5 cm

Sketches: Credit to Michelle Zerwig

#	a Front	b Back
		



ARTIFACT WORKSHEET # D-8

125

Museum: University of Alaska Museum at Fairbanks**Artifact:** Pouch **Date:** 2/11/94**Accession:** # UA 610.5920 **Acc. Date:** May, 1954**Location of artifact w/in collection:** in compact storage unit**Donor:** George Gulcher**Donor's address (if available):**N/A**Collector (if known):** Lola Albright Heron & John Albright

Object name: Personal Gear: pouch, tobacco**Provenance:** Southwestern Alaska; Yukon/Kuskokwim Delta**Detailed description of the artifact:** A tobacco pouch made of tanned hide and decorated with reindeer hair embroidery, blue glass beads, and small amounts of pink yarn. The top of the pouch has a 1.5cm cotton casing with draw string attached to a piece of dyed sealskin turned inside out. The top piece of sealskin is embellished with reindeer hair embroidery and blue beads. The intersection between the main body and top of the pouch is embellished with pink yarn embroidery and a strip of baby sealskin. The main body consists of sealskin (inside out) has been dyed with alder bark(?). The embellishment consists of hair embroidery with brown, red, and black thread and blue glass beads. The outer edge of the pouch is trimmed with sealskin and purple yarn embroidery. The embroidery is completed before the final construction of the pouch.**Artist/Cultural Affiliation:** Yuit**Date:** N/A**Condition:** Fair - the hair and yarn embroidery on this pouch have been exposed to pests which caused some damage. The damage was minimal compared to other hair embroidered artifacts.**Function:** carrying tobacco(?)**Materials:** dyed sealskin (inside out), reindeer hair, yarn, cotton thread, baby sealskin, and undyed sealskin.**Construction Methods:** The construction method for this pouch was described previously in the detailed description of the artifact.**Embroidery techniques:** One embroidery technique used on the pouch consists of a twisted simple line of hairs (~4) couched onto the skin. The other form of embroidery is a series of hair being twisted up and down and held in place by stitches forming a V-shaped detail.**Detailed description of the embroidery:** See the detailed sketches for a complete description of the embroidery on this tobacco pouch.**Colour(s) used:** white reindeer hair; thread: brown, red, and black; and yarn: purple and pink.**Other embellishment techniques used:** yarn embroidery and small glass beads.**Identification Techniques:** Located by Dinah Larsen as having hair embroidery, the artifact was hidden from view within the storage unit.

Accession # UA 610.5920

126

Description of motif: The overall motif resembles a U-shaped or tongue motif.

Function of the artifact both its uses and roles (if known): Tobacco pouch

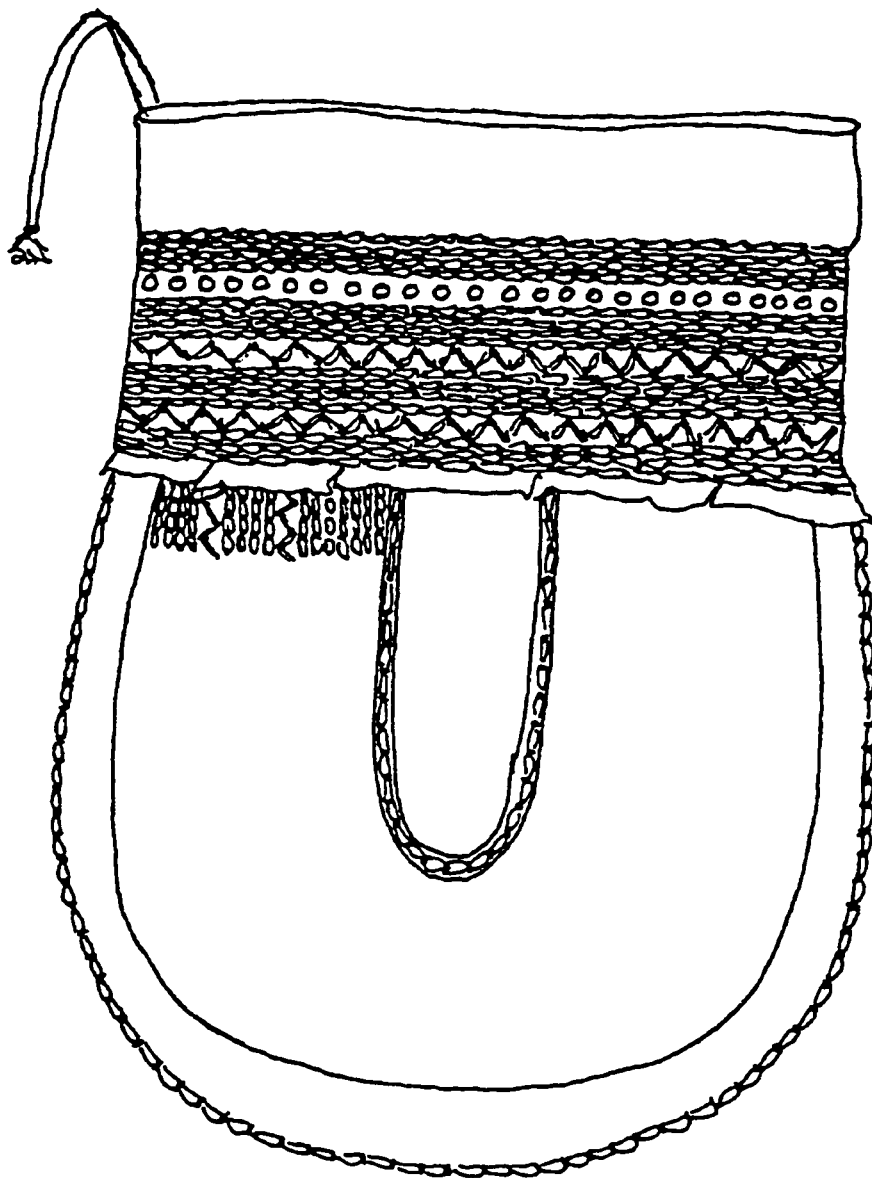
Dimensions of the artifact:

Height: 16.5 cm

Width: ~10 cm

Other: Top: 7 cm (width)

Sketches: Credit to Michelle Zerwig



ARTIFACT WORKSHEET # D-9

127

Museum: University of Alaska Museum at Fairbanks

Artifact: bag **Date:** 1/13/94

Accession: # UA 67.98.133 **Acc. Date:** N/A

Location of artifact w/in collection: No storage, found on work table during research

Donor: Rhoda Thomas

Donor's address (if available): N/A

Collector (if known): N/A

Object name: Personal gear: Bag, small

Provenance: Unknown

Detailed description of the artifact: The small gut(?) bag is embellished with strips of dyed gut(?) and hair embroidery. The strip embellishment has hair embroidery centred and attached. The hair embroidery placed within the side seam is attached with black thread. The front opening has a sealskin strip with the hair attached for decoration.

Artist/Cultural Affiliation: Unknown; Aleut(?)

Date: N/A

Condition: Very poor - The small bag has been exposed to pest infestations. The hair and portions of the dyed gut(?) have been destroyed.

Function: Unknown

Materials: Gut(?), dyed gut(?) (red, green, and black), seal skin (undyed), and reindeer hair.

Construction Methods: Hair had been placed within the seams for added ornamentation. The strips of gut(?) were attached with the couching stitches of the hair embroidery. The strap was attached on the back with knotted thread.

Embroidery techniques: The embroidery technique used to embellish this small bag was a twisted simple line of hair couched with black thread. The only other variation was the outside line of hair embroidery whip stitched into place.

Detailed description of the embroidery: See sketches at the end of the report for full descriptive drawings.

Colour(s) used: white reindeer hair, strips of gut(?) dyed red, green and black.

Other embellishment techniques used: Dyed gut(?) strips embellished with hair embroidery.

Description of motif: V-shaped motif along with a U-shaped or tongue motif.

Function of the artifact both its uses and roles (if known): Unknown

Dimensions of the artifact:

Height: 11 cm

Width: 8 cm

Other:

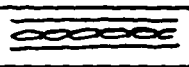
Identification Technique: I found the artifact on the ethnology work table without any documentation indicating the mode of embellishment.

ARTIFACT WORKSHEET # D-9

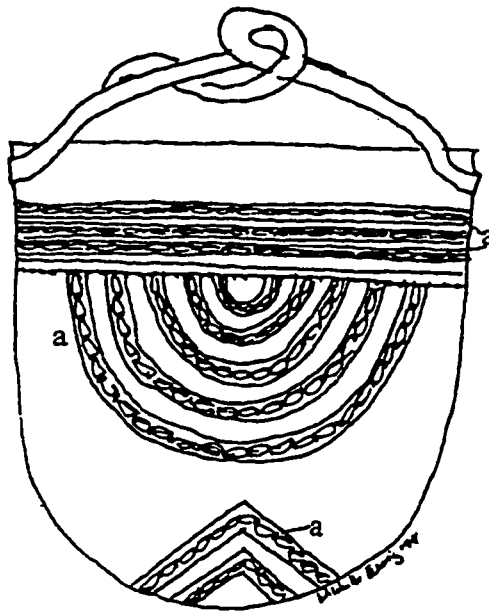
Museum: University of Alaska Museum at Fairbanks

Artifact #: UA 67.89.133 **Date:** 1/13/94

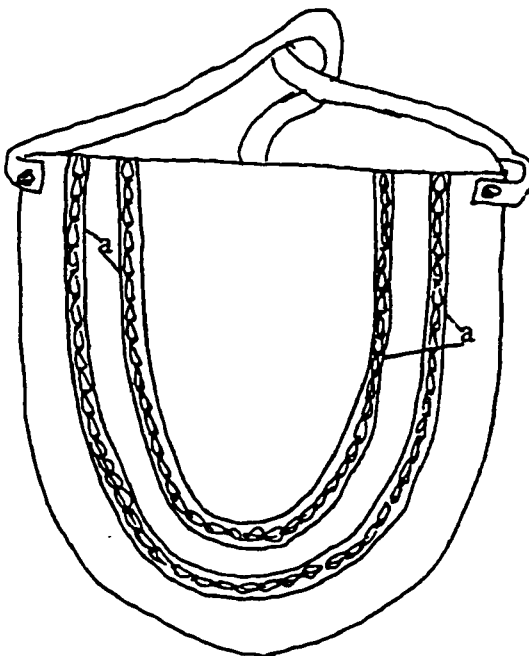
Sketches: Credit to Michelle Zerwig

#	a
	

Front View



Back View



ARTIFACT WORKSHEET # D-10

129

Museum: Sheldon Jackson Museum

Artifact: Salmon skin bag **Date:** 2/15/94

Accession # II.H.18 **Acc. Date:** N/A

Location of artifact w/in collection: on Display

Donor: N/A

Donor's address (if available): N/A

Collector (if known): N/A

Object name: Personal gear: bag, salmon skin

Provenance: Lower Yukon and Kuskokwim Region

Detailed description of the artifact: The bag shape differs from artifact II.H.79, in that, II.H.8 is shorter and oval shaped. The embellishment consists of dyed background skin inset into the salmon skin bag. The insets have small geometric patterns made from a lighter skin or gut. The light coloured skin has hair embroidery applied which appear almost invisible. The motifs include the tongue and circular motifs, similar to artifact II.H.79. See the attached sketches for full design detail.

Artist/Cultural Affiliation: Yuit

Date: N/A

Condition: Fair - a true assessment would require removing the bag from its display. Some insect damage was visible.

Function: clothing storage

Materials: Salmon skin, dyed skin or gut, reindeer hair, and sinew.

Construction Methods: The gut or dyed skin embellishment strips were sewn to the bag providing a gathered appearance to the salmon skin. The bottom of the bag consists of a separate skin piece attached to the main body.

Embroidery techniques: The embroidery technique used on this salmon skin bag was a twisted simple couching of hair applied to the skin.

Detailed description of the embroidery: See the attached sketches for full embroidery details.

Other embellishment techniques used: Gut or dyed skin appliqué

Description of motif: The motifs are geometric in nature: circle and U-shaped tongue motif.

Function of the artifact both its uses and roles (if known): Clothing storage

Dimensions of the artifact:

Height: 25.4 cm



Width: 40.2 cm

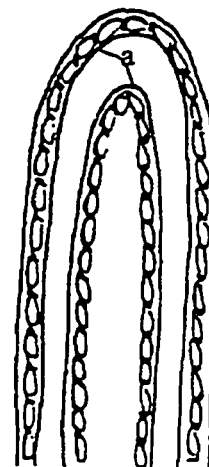
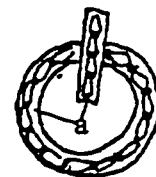
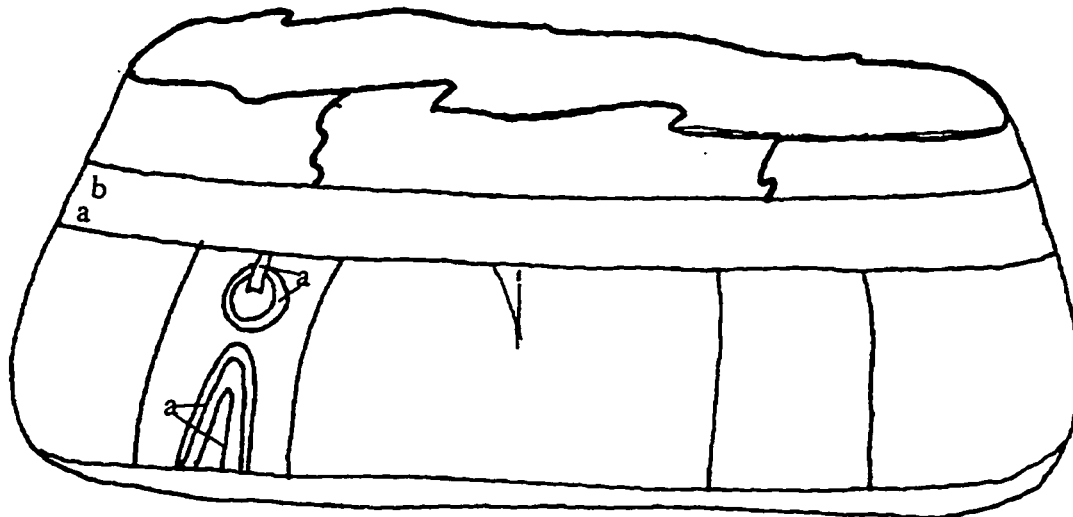
Other:

Identification Technique: I identified this artifact through a visual analysis of its attributes.

ARTIFACT WORKSHEET # D-10
 Museum: Sheldon Jackson Museum
 Artifact #: II.H.18 Date: 2/15/94

Sketches: Credit to Michelle Zerwig

#	a	b
		



ARTIFACT WORKSHEET # D-11

131

Museum: Sheldon Jackson Museum

Artifact: Goose foot bag **Date:** 2/15/94

Accession # II.H.28 **Acc. Date:** N/A

Location of artifact w/in collection: On display

Donor: Sheldon Jackson

Donor's address (if available): N/A

Collector (if known): Sheldon Jackson

Object name: Personal gear: bag, goose foot

Provenance: Yukon/Kuskokwim Delta

Detailed description of the artifact: The goose foot bag has a separate band at the top with horizontal cotton thread embroidery twisted and couched onto the bag. A strip of fabric is applied between the sealskin top and the main body of the bag. The main body is constructed from alternating skin from a goose foot and sealskin in vertical strips. The vertical bands with the thread embroidery are made from dyed sealskin. The vertical bands with reindeer hair embroidery are made from sealskin both dyed and bleached. The bottom of the bag consists of skin from a goose foot.

Artist/Cultural Affiliation: Yuit

Date: 1892

Condition: Good - signs of damage are unnoticable.

Function: Unknown

Materials: Goose foot, sealskin (dyed and bleached), reindeer hair, cotton thread (red & brown), and fabric.

Construction Methods: The construction appears to be pieced together, alternating between webbing from goose feet to seal skin. The bottom was stitched onto a strip of seal skin which attaches to the sides of the bag.

Embroidery techniques: The embroidery technique used on this bag consists of a twisted simple line of hair couched onto the skin.

Detailed description of the embroidery: The bag has two strips of hair embroidery that can be located with possibly two more strips obstructed from view. The bag was on display, thus concealing one side from view.

Other embellishment techniques used: There are possibly thirteen strips of cotton thread embroidery on the bag. The thread embroidery uses the same technique as hair embroidery. The application of the sealskin strips is also ornamentation.

Description of motif: The motifs used on this bag are linear and geometric in nature.

Function of the artifact both its uses and roles (if known): Unknown

Dimensions of the artifact:

Height: 22.8 cm

Width: 11.4 cm (at bottom)

Identification Technique: I identified this artifact through a visual analysis of its attributes.


ARTIFACT WORKSHEET # D-11

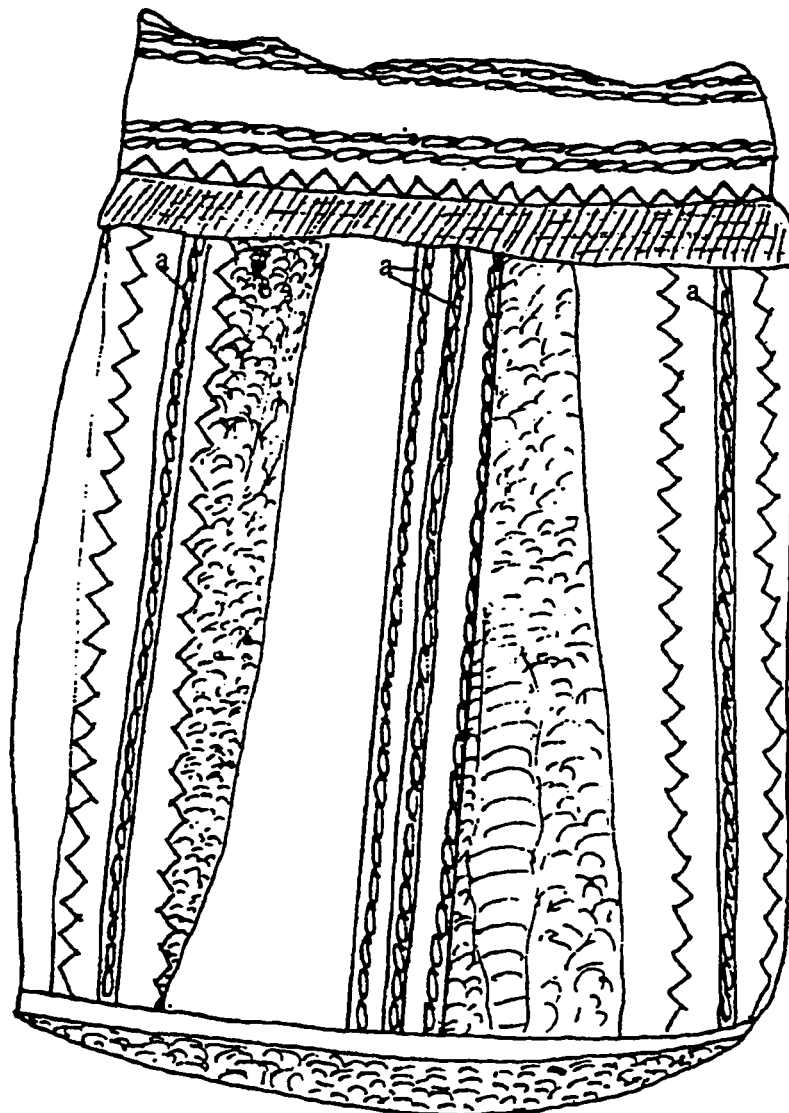
Museum: Sheldon Jackson Museum

Artifact #: II.H.28 **Date:** 2/15/94

Note: The goose foot has the same appearance as the Tundra swan foot bag at the University of Alaska Museum.

Sketches: Credit to Michelle Zerwig

#	a
	



ARTIFACT WORKSHEET # D-12

133

Museum: Sheldon Jackson Museum**Artifact:** Salmon skin bag **Date:** 2/15/94**Accession #** II.H.79 **Acc. Date:** N/A**Location of artifact w/in collection:** On Display**Donor:** N/A**Donor's address (if available):** N/A**Collector (if known):** N/A

Object name: Personal gear: bag, salmon skin**Provenance:** Lower Yukon, Yuit

Detailed description of the artifact: This large salmon skin bag is used for storing food. The decorative features include a brown (possibly gut) strip about 11.4 cm from the top with two light strips inside (one was wider than the other). There are three rows of reindeer hair embroidery on this horizontal strip. The smaller light strip has one row of embroidery and the thicker strip has two embroidery rows. Vertically, there are four brown (possibly gut) strips sewn into the salmon skin spaced about 15.2 cm apart. The vertical strips extend up to the horizontal embellishment strip. The dark vertical strips have two tongue motifs and one circle motif of light gut(?) attached and embellished with hair embroidery. The circles are located above the tongue shaped design motif. The bottom of the bag is presumably undecorated and attached as a separate piece of salmon skin.

Artist/Cultural Affiliation: Yuit**Date:** N/A**Condition:** Fair - a true assessment would involve removing the bag from display.**Function:** food storage**Materials:** Salmon skin, gut(?), reindeer hair, and sinew

Construction Methods: The gut(?) embellishment strips are sewn on the salmon skin giving it a gathered appearance. The bottom of the bag was a separate piece of salmon skin and was attached to the main body with stitching.

Embroidery techniques: The embroidery technique employed on the salmon skin bag was a twisted simple line of hair couched onto skin.

Detailed description of the embroidery: See the attached sketches for full embroidery details.

Colour(s) used: white reindeer hair**Other embellishment techniques used:** gut(?) applique

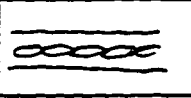
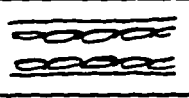
Description of motif: The motifs are geometric in nature: a circle and a U-shaped tongue motif.

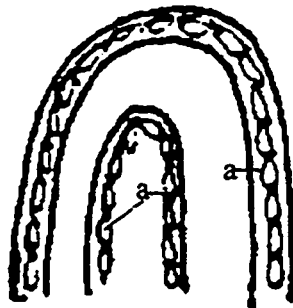
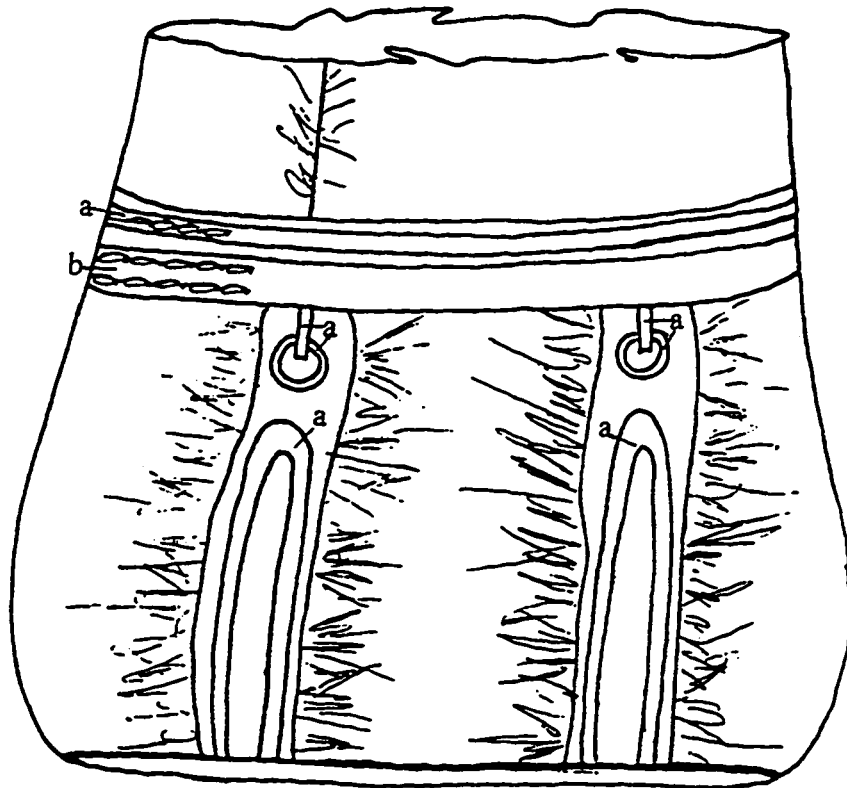
Function of the artifact both its uses and roles (if known): food storage**Dimensions of the artifact:****Height:** 31.4 cm**Width:** 33.2 cm

Identification Technique: I identified this artifact through a visual analysis of its attributes.

ARTIFACT WORKSHEET # D-12
Museum: Sheldon Jackson Museum
Artifact #: II.H.79 Date: 2/15/94

Sketches: Credit to Michelle Zerwig

#	a	b
		



ARTIFACT WORKSHEET # D-13

135

Museum: Sheldon Jackson Museum

Artifact: Housewife **Date:** 2/15/94

Accession # II.B.78 **Acc. Date:** 2/15/94

Location of artifact w/in collection: On Display

Donor: N/A

Donor's address (if available): N/A

Collector (if known): N/A

Object name: Personal gear: housewife, salmon skin

Provenance: Andreofski, Alaska; located in the Yukon/Kuskokwim Delta

Detailed description of the artifact: The salmon skin housewife is a typical shape with a shallow pocket and a long flap with a tie. The housewife is embellished with hair and thread embroidery on top of light and dark skin applique. There are twelve rows of hair and two rows of blue thread embroidery around the flap of the housewife. The blue thread embroidery occurs every four rows of hair embroidery. It is outlined with a strip of sealskin around the outside.

Artist/Cultural Affiliation: Yuit

Date: N/A

Condition: Fair - The housewife has discoloured with age, the reindeer hair appears to be yellowed or possibly dyed.

Function: Tool and sewing kit

Materials: Salmon skin, reindeer hair, blue thread, and sealskin

Construction Methods: The housewife was constructed using one piece of salmon skin with the bottom folded up and attached at the sides. There was a strip of sealskin around the edge for decoration.

Embroidery techniques: The embroidery consists of a twisted simple line of hair couched onto the skin.

Detailed description of the embroidery: See the attached sketches for full embroidery details.

Other embellishment techniques used: thread embroidery and sealskin trimming.

Description of motif: The motifs include linear and geometric motifs such as circles, tongue shapes and straight lines.

Function of the artifact both its uses and roles (if known): tool and sewing kit.

Dimensions of the artifact:

Height: N/A

Width: N/A

Other:

Identification Technique: I identified this artifact through a visual analysis of its attributes.

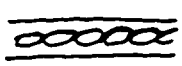
ARTIFACT WORKSHEET # D-13

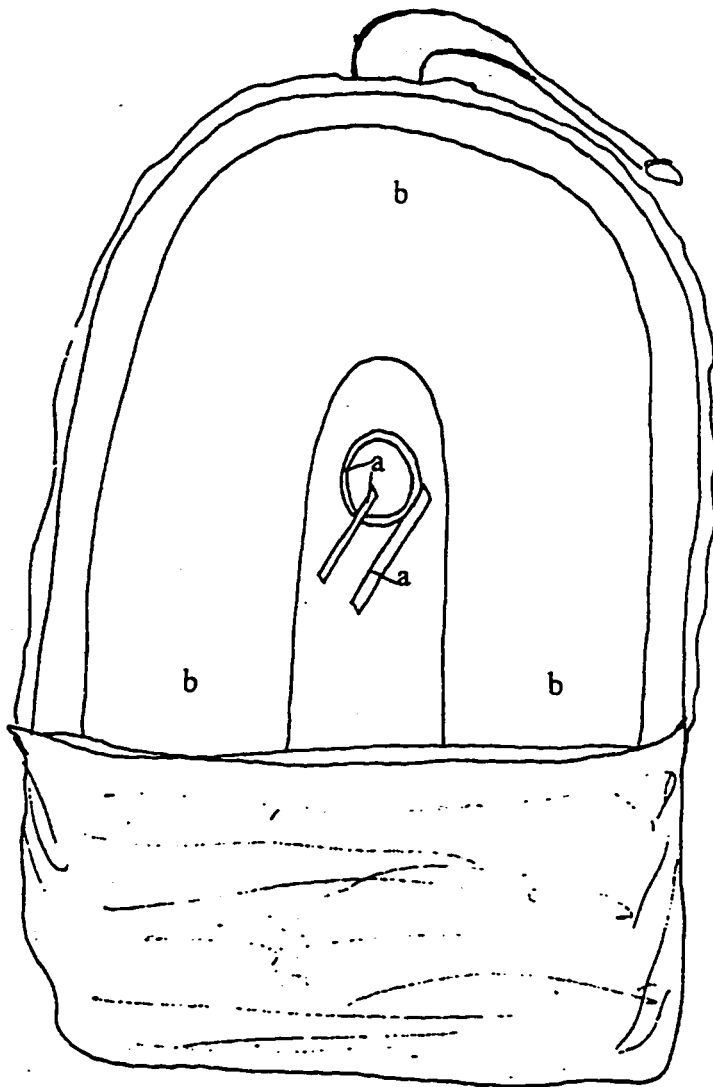
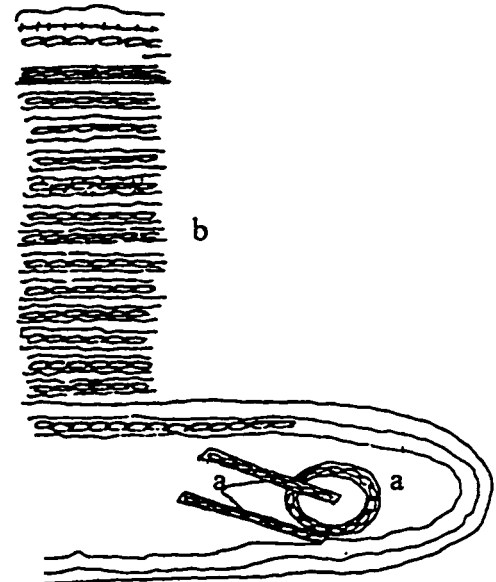
Museum: Sheldon Jackson Museum

Artifact #: II.B.78

Date: 2/15/94

Sketches: Credit to Michelle Zerwig

#	a
	



ARTIFACT WORKSHEET # D-14

137

Museum: Sheldon Jackson Museum

Artifact: Quiver **Date:** 2/15/94

Accession # II.N.20 **Acc. Date:**N/A

Location of artifact w/in collection: in Storage

Donor: Sheldon Jackson

Donor's address (if available): N/A

Collector (if known): Sheldon Jackson

Object name: Personal gear: Quiver

Provenance: Cape Sertze, Siberia

Detailed description of the artifact: A flat quiver constructed from wooden posts at each side with reindeer skin straps attached. One strap had a walrus ivory hook attached to it. The quiver front consists of alternating sealskin and reindeer fur sections. The sealskin sections are embroidered with reindeer hair (8 sections). The bottom reindeer hair section has been pieced together with a whip stitch.

Artist/Cultural Affiliation: Siberian

Date: ~1890

Condition: Fair/Poor - The quiver's embroidery appears to be intact, whereas the hair from the reindeer fur has been destroyed by pests or has broken off.

Function: Used to carry the arrows during a hunt.

Materials: reindeer fur, sealskin, reindeer hair, thread, wood, hair from bear cub(?), walrus ivory, and sinew.

Construction Methods: The quiver appears to be pieced together either to create an interesting pattern or to use extra skin scraps. The pieces were attached together with sinew using a whip stitch. The reindeer skin around the wooded rods were attached to the sealskins by a running stitch.

Embroidery techniques: A wide solid line of hair embroidery constructed by crisscrossing hair around the stitches. Another technique consists of a twisted simple line of hair couched onto the skin.

Detailed description of the embroidery: See the attached sketches for embroidery details.

Other embellishment techniques used: thread embroidery

Description of motif: The motifs appear to be highly geometric, see the sketches for details.

Function of the artifact both its uses and roles (if known): Carry arrows during a hunt and possibly ceremonial purposes. **Dimensions of the artifact:**

Height: ~78 cm (wooden rods)

Width: ~19 cm

Other: 69 cm (height of skin portion)

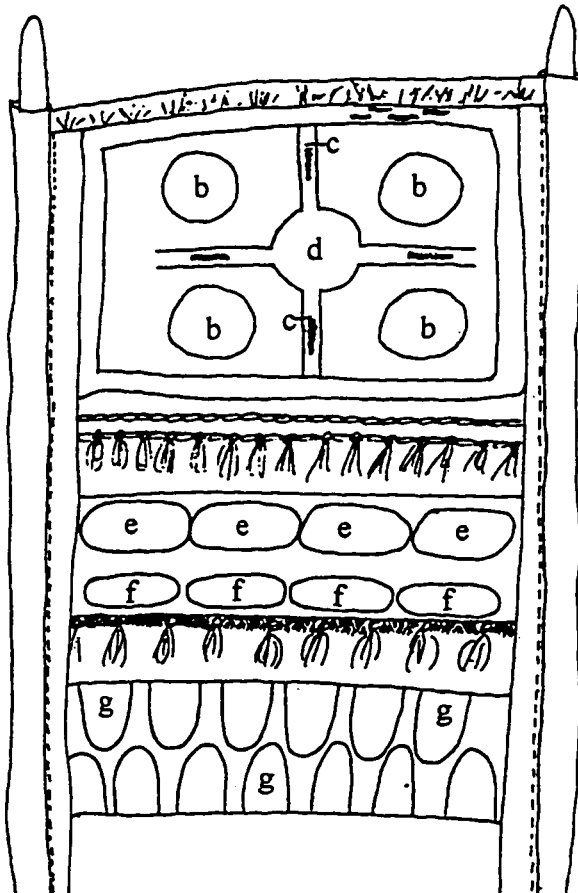
Notes: "Cape Sertze (Kamen) S J" written on back. Dorthey Jean Ray says that "Kamen" means "stone" or "rock" (8-10-78)

Identification Technique: I identified this artifact through a visual analysis of its attributes. The documentation record stated that this artifact was embellished with hair embroidery.

ARTIFACT WORKSHEET # D-14
Museum: Sheldon Jackson Museum
Artifact #: II.N.20 Date: 2/15/94

Sketches: Credit to Michelle Zerwig

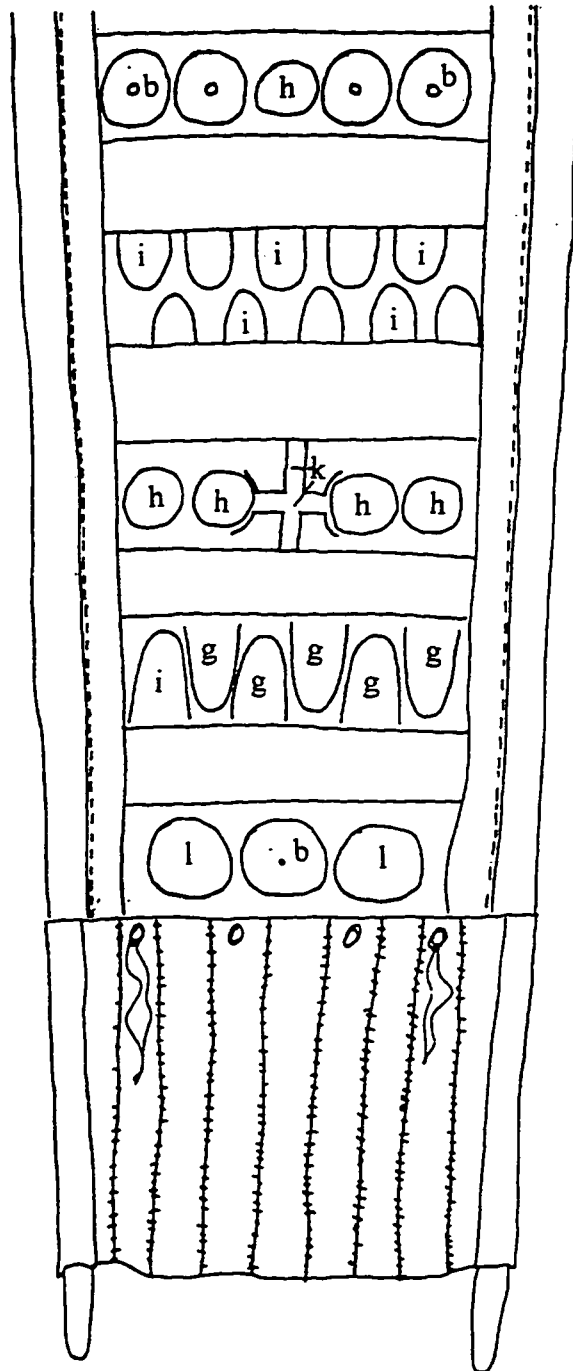
#	a	b	c	d	e	f
#	g	h	i	j	k	l



ARTIFACT WORKSHEET # D-14
Museum: Sheldon Jackson Museum
Artifact #: II.N.20 **Date:** 2/15/94

139

Sketches: Credit to Michelle Zerwig



ARTIFACT WORKSHEET # D-15

140

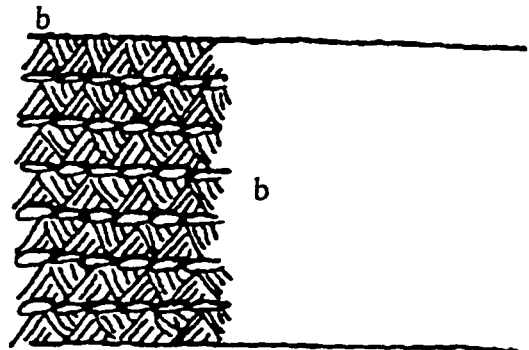
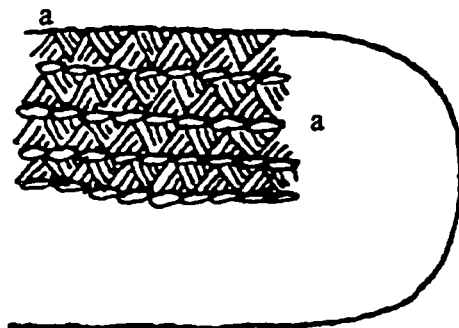
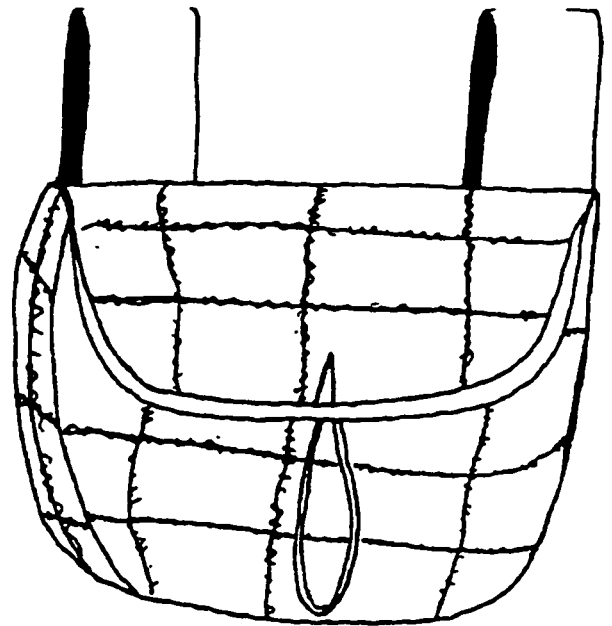
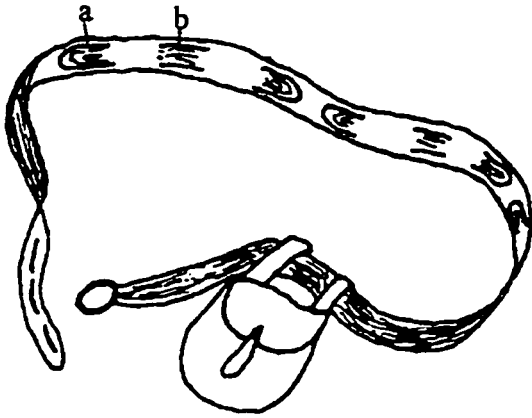
Museum: Sheldon Jackson Museum**Artifact:** Belt w/skin pouch **Date:** 2/15/94**Accession #** II.N.31a,b **Acc. Date:** N/A**Location of artifact w/in collection:** in Storage**Donor:** N/A**Donor's address (if available):** N/A**Collector (if known):** N/A

Object name: Personal gear: belt w/skin pouch**Provenance:** Siberian(?)**Detailed description of the artifact:** Artifact (a) is a pouch made of small pieces of reindeer skin (patchwork) sewn together like an envelope with a flap. The pouch is attached to the belt with two loops that rest on the belt itself. Artifact (b) represents the belt made of sealskin with hair on the inside and has a metal fastener at one end. The metal disc attaches through the slits on the other side. The belt is embellished with hair and thread embroidery and trimmed with bleached sealskin strips.**Artist/Cultural Affiliation:** Siberian, Chukchi or Yuit**Date:** N/A**Condition:** Fair/poor - The skin and hair embroidery appeared highly discoloured and the hair was damaged either from insects or friction from the pouch. The sealskin belt was highly contorted. The pouch was losing its hair and has been exposed to insects infestations.**Function:** Hunting belt used to carry amulets and cinch in outer parka.**Materials:** sealskin, reindeer hair, reindeer skin, sinew, metal, and cotton thread (red and tan)**Construction Methods:** The belt was constructed with one seal skin layer and the pouch consisted of a series of reindeer skin pieces sewn together.**Embroidery techniques:** A wide solid line of hair embroidery constructed by crisscrossing the hair around stitches. Another technique used is a twisted simple line of hair couched onto the skin.**Detailed description of the embroidery:** See the attached sketches for full details.**Other embellishment techniques used:** sealskin applique**Description of motif:** linear and tongue shaped**Function of the artifact both its uses and roles (if known):** The belt was used to cinch in the outer parka to protect against the elements.**Dimensions of the artifact:****Height:** Pouch: 10.2 cm**Width:** 12 cm**Other:** Belt: 1.028 M (length)**Notes:** Notes by J.H. Condit 1931-33 No. 3: "94 belt and bag for bullets and powder." (Possibly amulets and tobacco?)**Identification Technique:** I identified this artifact through a visual analysis of its attributes. The documentation record stated that this artifact was embellished with hair embroidery.

ARTIFACT WORKSHEET # D-15
Museum: Sheldon Jackson Museum
Artifact #: II.N.31a,b **Date:** 2/16/94

141

Sketches: Credit to Michelle Zerwig



ARTIFACT WORKSHEET # D-16

142

Museum: Sheldon Jackson Museum

Artifact: Boots **Date:** 2/15/94

Accession # II.N.92a,b **Acc. Date:** N/A

Location of artifact w/in collection: in Storage

Donor: N/A

Donor's address (if available): N/A

Collector (if known): N/A

Object name: Personal gear: boots

Provenance: Siberia

Detailed description of the artifact: The boot tops are reindeer summer skin and the foot is probably soft-tanned reindeer skin with hard ugruk soles. The top border embellishment stitching is reindeer hair on dehaired sealskin. The Straps are cold-tanned sealskin. The boots have a sinew drawstring. The gussets, piping, and all finishing features are superbly constructed. The boots are embellished with reindeer hair embroidery. The boot foot is embellished with a strip of sealskin that is embroidered using a twisted stitch. The technical terminology is given by Dorothy Jean Ray on August 12, 1978.

Artist/Cultural Affiliation: Siberian, Chukchi(?)

Date: N/A

Condition: Poor - The boots are in danger of losing all of their hair. The hair embroidery was in good condition considering the entire boot condition.

Function: Protection and adornment

Materials: Reindeer hair, reindeer skin, sealskin, and sinew.

Construction Methods:

Embroidery techniques: The embroidery technique used on the boots appeared different from any other looked at. The technique is a meander stitch where the hair is wrapped under the stitch then over the stitch. In some cases the hair is wrapped on both sides of the stitches forming a oval shape.

Detailed description of the embroidery: See the attached sketches for full detail.

Other embellishment techniques used: sealskin embroidery.

Description of motif: linear

Function of the artifact both its uses and roles (if known):

Dimensions of the artifact:

Height: 38.1 cm

Width:

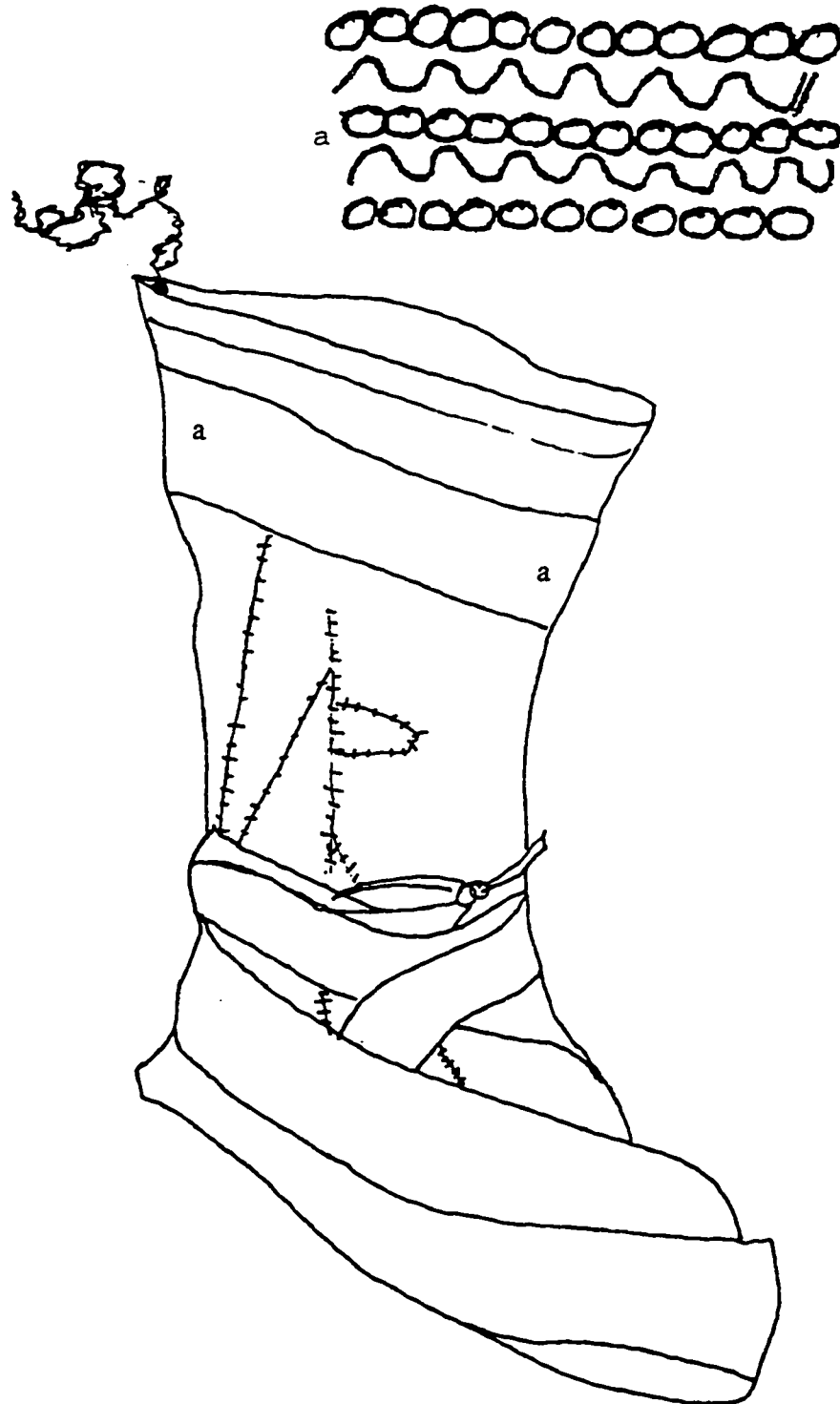
Other: foot 27.9 cm X 11.43 cm

Identification Technique: I identified this artifact through a visual analysis of its attributes. The documentation record stated that this artifact was embellished with hair embroidery.

ARTIFACT WORKSHEET # D-16
Museum: Sheldon Jackson Museum
Artifact #: II.N.92a,b **Date:** 2/16/94

143

Sketches: Credit to Michelle Zerwig



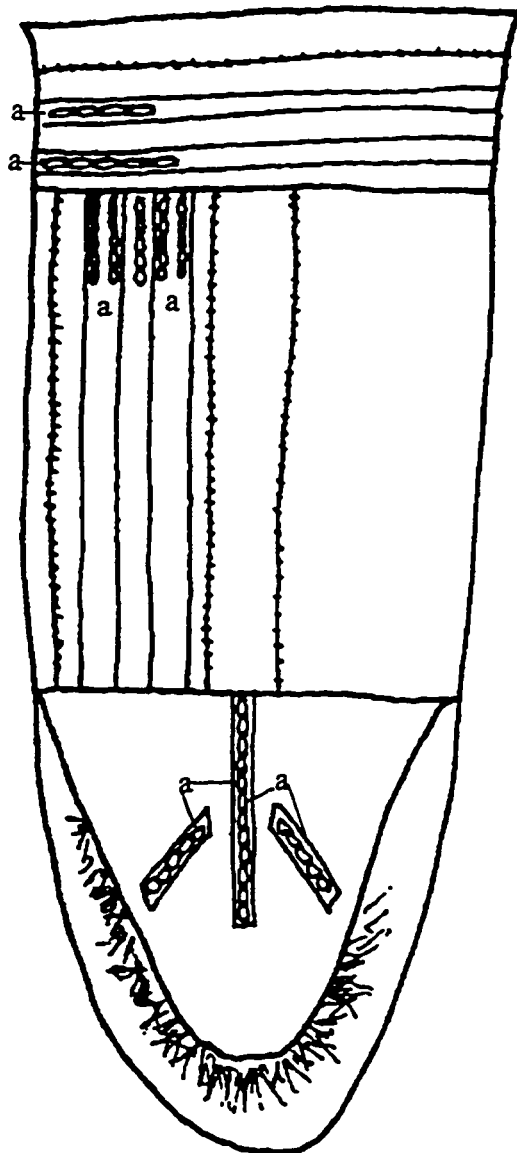
ARTIFACT WORKSHEET # D-17**Museum:** Sheldon Jackson Museum**Artifact:** bag **Date:** 2/15/94**Accession #** II.X.747 **Acc. Date:** N/A**Location of artifact w/in collection:** in Storage**Donor:** N/A**Donor's address (if available):** N/A**Collector (if known):** N/A

Object name: Personal gear: bag, seal gut**Provenance:** Unknown**Detailed description of the artifact:** A very small intestine bag with a decorated skin band at the top. The top consists of three horizontal strips of sealskin. The top and bottom strips are made from bleached sealskin. The centre strip, the wider of the three, is made from dyed sealskin. All three strips had been embellished with white reindeer hair at one time. Only a fraction of hair remains on the top embellished strip. The shape of the bag is severely contorted, faintly representing a once rectangular shape.**Artist/Cultural Affiliation:** Unknown**Date:** N/A**Condition:** Poor - Almost all of the reindeer hair embroidery was destroyed leaving indication of the stitches. The overall condition of the bag was fragile and damaged.**Function:** Unknown**Materials:** seal intestine, sealskin (dyed and bleached), and reindeer hair.**Construction Methods:** The bag was constructed with a seam down the front and back. The top of the bag was applied before the front and back seams were sewn, therefore indicating that the embroidery may have been done before the final construction.**Embroidery techniques:** The embroidery technique consists of twisted simple line of hair couched onto the skin.**Detailed description of the embroidery:** See the attached sketches for a full indication of the two stitches left intact.**Other embellishment techniques used:** Sealskin strip applique**Description of motif:** linear**Function of the artifact both its uses and roles (if known):** Unknown**Dimensions of the artifact:****Height:** 11.4 cm**Width:** 8.8 cm**Other:****Identification Technique:** I identified this artifact through a visual analysis of its attributes.

ARTIFACT WORKSHEET # D-17
Museum: Sheldon Jackson Museum
Artifact #: II.X.747 Date: 2/15/94

Sketches: Credit to Michelle Zerwig

#	a



ARTIFACT WORKSHEET # D-18**Museum:** Sheldon Jackson Museum**Artifact:** bag **Date:** 2/15/94**Accession #** II.X.556 **Acc. Date:** N/A**Location of artifact w/in collection:** in Storage**Donor:** N/A**Donor's address (if available):** N/A**Collector (if known):** N/A

Object name: Personal gear: bag, seal gut**Provenance:** Unknown

Detailed description of the artifact: A very small intestine bag with a decorated skin band at the top. The top consists of three horizontal strips of sealskin. The top and bottom strips are made from bleached sealskin. The centre strip, the wider of the three, is made from dyed sealskin. All three strips had been embellished with white reindeer hair at one time. Only a fraction of hair remains on the top embellished strip. The shape of the bag is severely distorted faintly representing a once rectangular shape.

Artist/Cultural Affiliation: Unknown**Date:** N/A

Condition: Poor - Almost all of the reindeer hair embroidery was destroyed leaving indication of the stitches. The overall condition of the bag was fragile and damaged.

Function: Unknown

Materials: seal intestine, sealskin (dyed and bleached), and reindeer hair.

Construction Methods: The bag was constructed with a seam down the front and back. The top of the bag was applied before the front and back seams were sewn, therefore indicating that the embroidery may have been done before the final construction.

Embroidery techniques: The embroidery technique consists of twisted simple line of hair couched onto the skin.

Detailed description of the embroidery: See the attached sketches for a full indication of the two stitches left intact.

Other embellishment techniques used: Sealskin strip applique

Description of motif: linear

Function of the artifact both its uses and roles (if known): Unknown

Dimensions of the artifact:

Height: 11.4 cm

Width: 8.8 cm

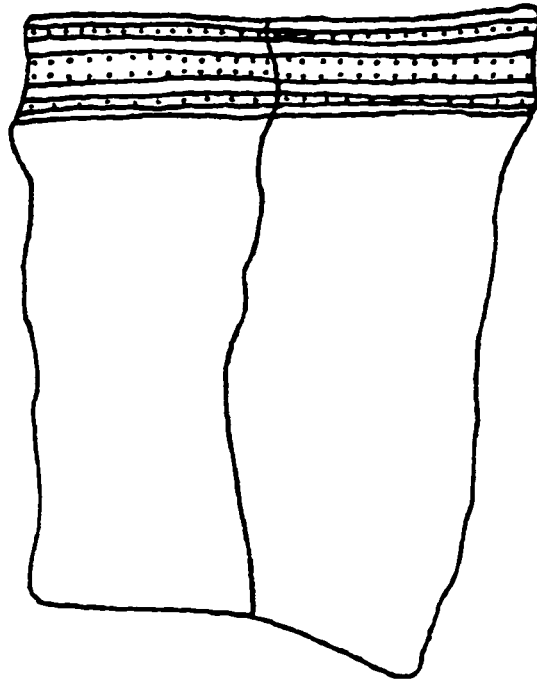
Other:

Identification Technique: I identified this artifact through a visual analysis of its attributes.

ARTIFACT WORKSHEET # D-18
Museum: Sheldon Jackson Museum
Artifact #: II.X.556 Date: 2/15/94

147

Sketches: Credit to Michelle Zerwig



Appendix E

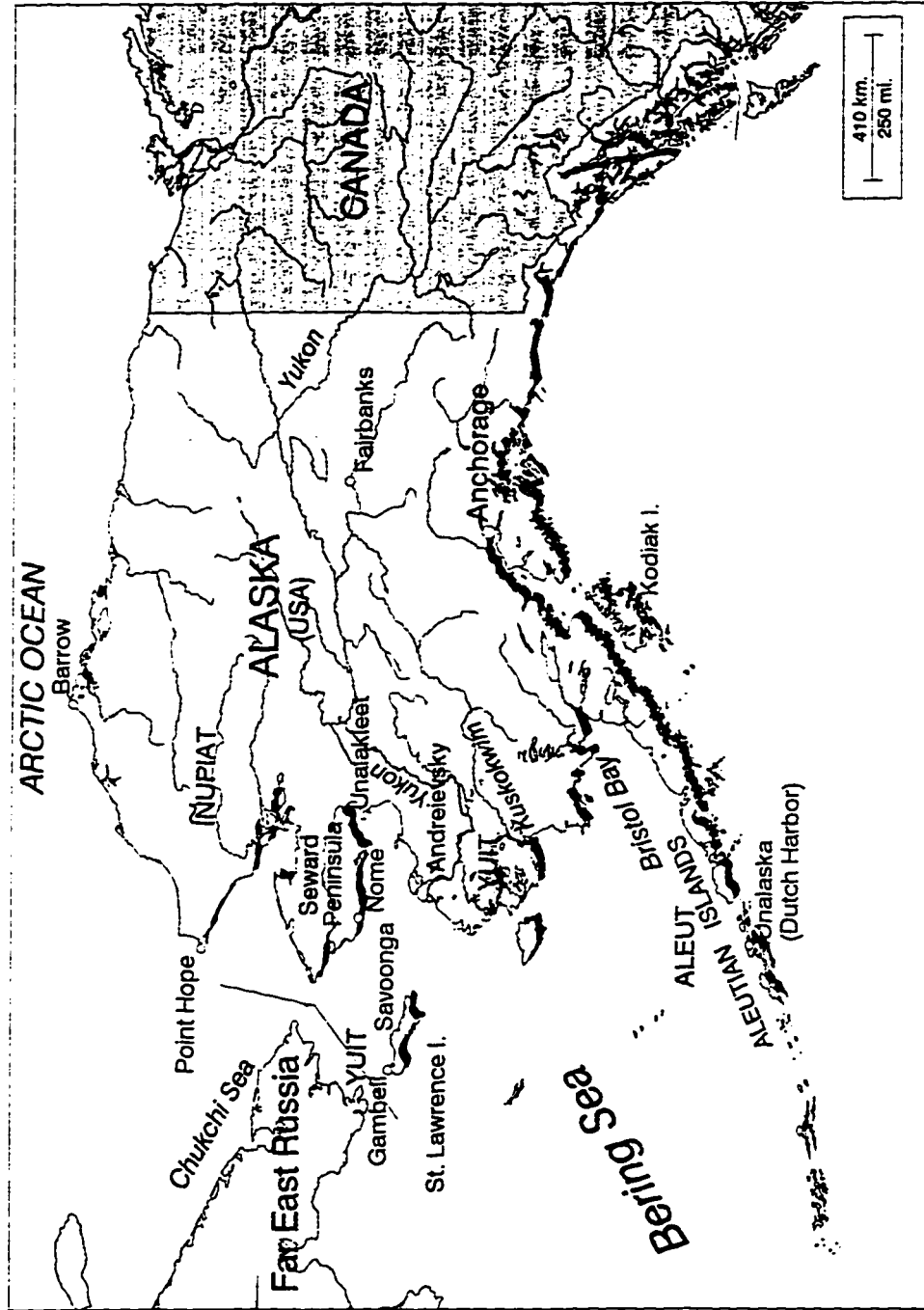


Figure E-1. Map of Alaska and surrounding areas outlining the important cultural distinctions, place names, and bodies of water discussed in my thesis (Custom Map by Michelle Zerwig from PC Globe Maps 'n' Facts, 1993).

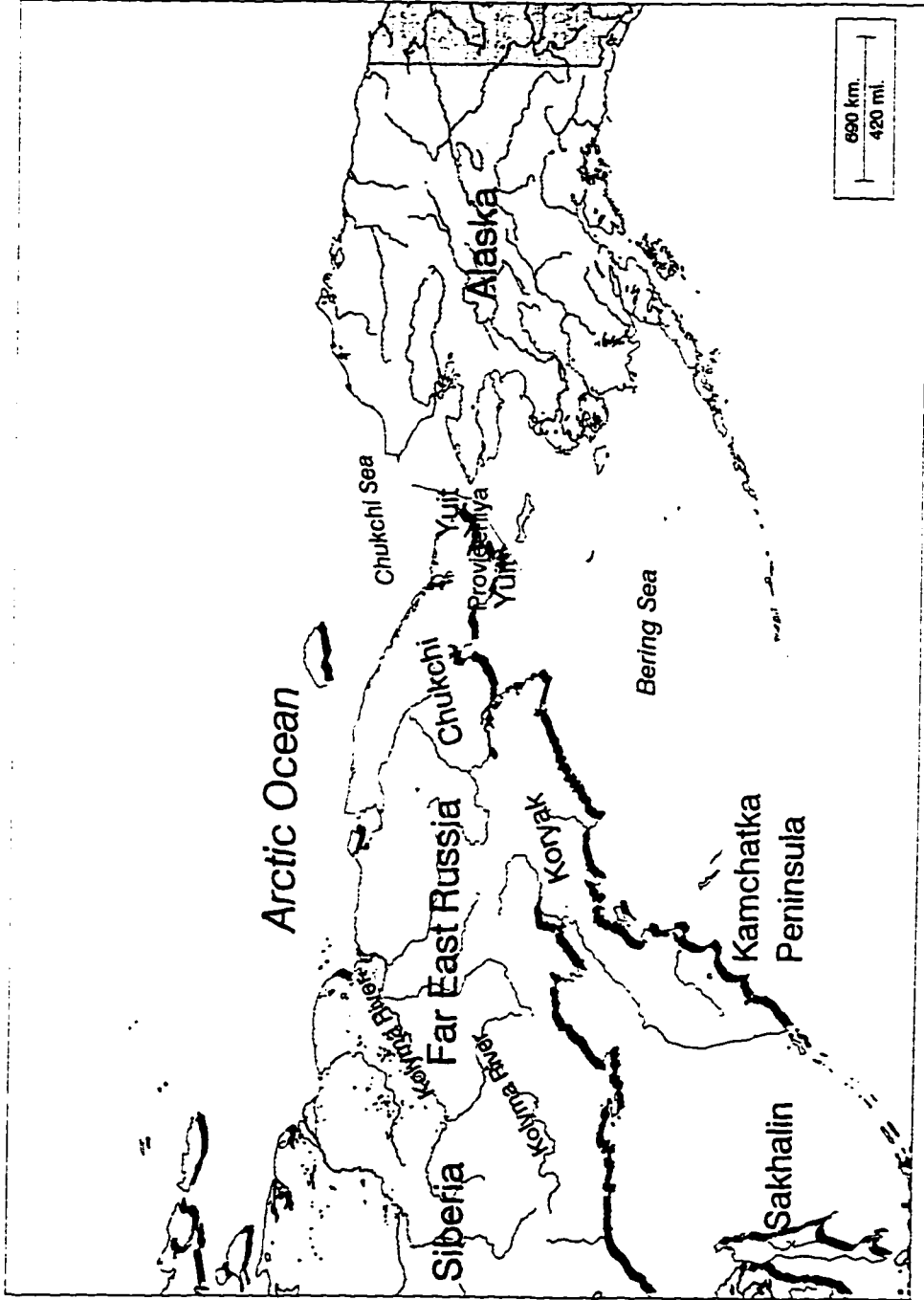


Figure E-2. Map of Far Eastern Russia and surrounding areas outlining the important cultural distinctions, place names, and bodies of water discussed in my thesis (Custom Map by Michelle Zerwig from PC Globe Maps 'n' Facts, 1993).

Appendix F

Table F-1

Distinguishing Ethnographic Artifact Materials
(Florian et al., 1990, p. 53)

Noticeable Swelling in Water

Sinew Fibrils present displaying an oriented and linear pattern; rapidly absorbs aniline blue solution at margins; full range on interference colours with polarized light; contracts when heated; increased expansion in strong alkaline solution.

Hide Fibrils present displaying random orientation of varying thickness; rapidly absorbs aniline blue solution at margins; white interference colours; contracts when heated; increased expansion in strong alkaline solution.

No Noticeable Swelling in Water

Hair May unfold with no noticeable swelling in water; solid individual fibres with centre medulla; circular to oval cross section; surface scales present.

Plant Groupings of compacted fibres or tissues; cellular parts structure with variable shaped cells; negative protein stain reaction; negative melanin bodies.

Gut Groupings of compacted fibres or tissues; cellular structure with variable shaped cells; circular groupings of glandular tissue and apparent blood capillaries present.

Appendix G

Conservation concerns regarding ethnographic objects from porcupine quill were investigated by Jewett in Whitehead (1982). They state that quill is composed of protein, keratin and maintains a similar structure to hair. Jewett states:

the best approach to preservation is to provide a stable environment so that the minimum of treatment is needed. Those artifacts which require conservation should be treated by a professional conservator, but good housekeeping and storage are 99% of the battle (p. 215).

Quill Deterioration Concerns:

- * quillwork is relatively durable;
- * resistant to fungi and bacterial deterioration;
- * susceptible to moth and carpet beetle attack;
- * quills are soluble in alkalis;
- * quills soften by heat.

Potential Deteriorating Factors:

- * any handling will cause breakage and fragment loss;
- * bad storage conditions;
- * low RH causes quill brittleness;
- * crowded display and storage conditions increase mechanical damage;
- * airborne dust and contaminants effect quills.

Housekeeping Advantages:

- * Housekeeping and frequent artifact inspection are the best conservation practices concerning quill protection.

Recommended Storage Conditions:

- * constant temperature at 20°C and 40-50% RH to avoid the brittleness caused by dry environmental conditions or mould growth caused by dampness;
- * Dust free;
- * low light levels;
- * sunlight should be avoided.