Breathing Membranes Gut Processing Methods and Innovation

Breathing Membranes - Gut Processing Methods and Innovation. Processing of animal intestines in Greenland.

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Front picture: *Pooq,* Sofie Amondsen's work (2025).

Photographer: David Ottosen (2025). Copyright: Greenland National Museum.

First edition (2025).

The booklet is also written in Greenlandic.



Introduction

This booklet emerged from the project Puggut anernerat – Breathing Membranes, Gut Processing Methods and Innovation (2024–2026), which explored inalukkat (Gut-Skin) in Greenland.

The project began when artist Julie Bach, drawing on her practical experience with animal gut, initiated a collaborative workshop. Together with seamstress Sofie Amondsen and the Greenland National Museum, she engaged in a shared exploration of this unique material.

Following the workshop, Sofie Amondsen conducted an extended study focusing specifically on seal gut. By examining traditional Greenlandic processing techniques, she collected valuable knowledge with the museum, which is now shared in this publication.

"we hope this booklet will be useful to many.

If you wish to work with animal gut, may you find inspiration here"

— The workshop participants

This booklet was made possible thanks to sponsors and funding from:





















Puggut anernerat - Breathing Membranes

Breathing Membranes - Gut processing methods and innovation (2024-2026)

The project was created by seamstress Sofie Amondsen, textile artist Julie Bach, and the Greenland National Museum. Rooted in seal gut as a material, the project combined artistic practice with the sharing of cultural heritage knowledge. And culminates in a special exhibition (October 2025 – February 2026).

Its purpose was to teach methods of working with animal gut in a way that is accessible to all, thereby helping to prevent the slow disappearance of this tradition in Greenland. The project leaders emphasize that the meaning of gut processing—the material itself, the ways it is handled, and the techniques involved—are vital cultural practices that must be addressed and preserved. The project unfolded through experimental tasks that encouraged both the expansion of knowledge and hands-on exploration of gut techniques. In this process, new collaborations emerged among cultural practitioners, fostering the preservation and renewal of important traditions.

A dried intestine is a remarkable material: light, breathable, and waterproof. Drawing on this knowledge, Sofie Amondsen and Julie Bach each developed exhibitions at the museum. These exhibitions reveal how historic gut-sewn objects, preserved in collections, can inspire both contemporary artistic experiments and innovative practices—creating a dialogue between the work of our ancestors and today's creative expressions.

In the special exhibition, Sofie Amondsen presented her designs Pooq and Qaamasortaq. She highlights how gut-crafted objects can once again become relevant to modern life when integrated into the home. Pooq, a basket, is designed to hold knitting yarn and pouches for calm, cozy evenings, or to contain small treasures. Qaamasortaq, a lampshade made of gut, transforms the glow of a bulb into a soft, calming atmosphere.



Qaamasortaq (lampshade), by Sofie Amondsen (2025). Made of bearded seal intestines (ussuup inalugaa). Photo by NKA.

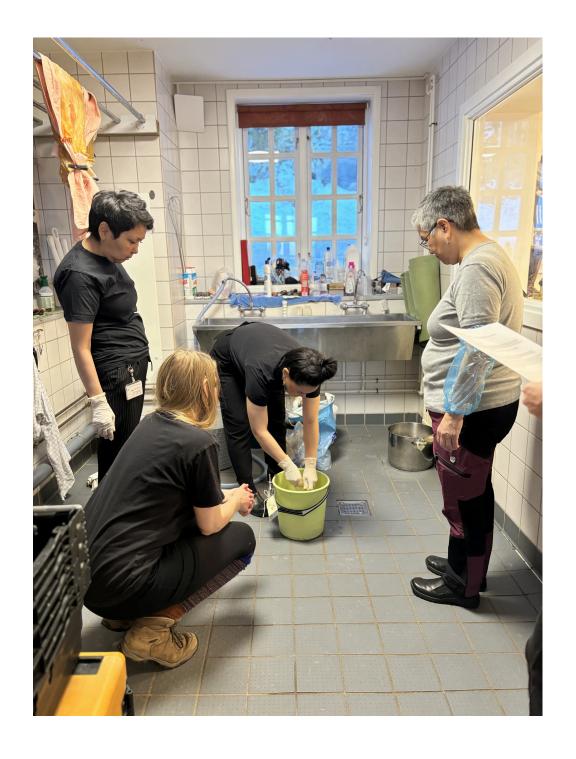
Julie Bach's contributions include works such as *My Mother's Hands*, *I Have My Father's Legs* and *Where it all began*. Her art emerges from the foundations of her life and heart. Together with her mother, she made sound recordings—capturing both her mother's voice and the subtle rustling of gut being worked—which became part of the exhibition.

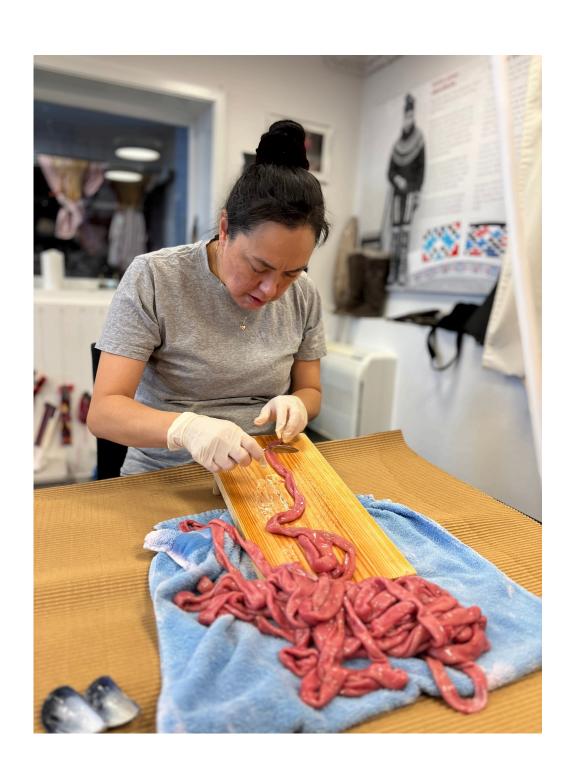
These contemporary works were exhibited alongside objects from the Greenland National Museum's collections, including traditional gut-processing tools. Together, they demonstrated how innovation and art can be meaningfully connected to ancestral knowledge.

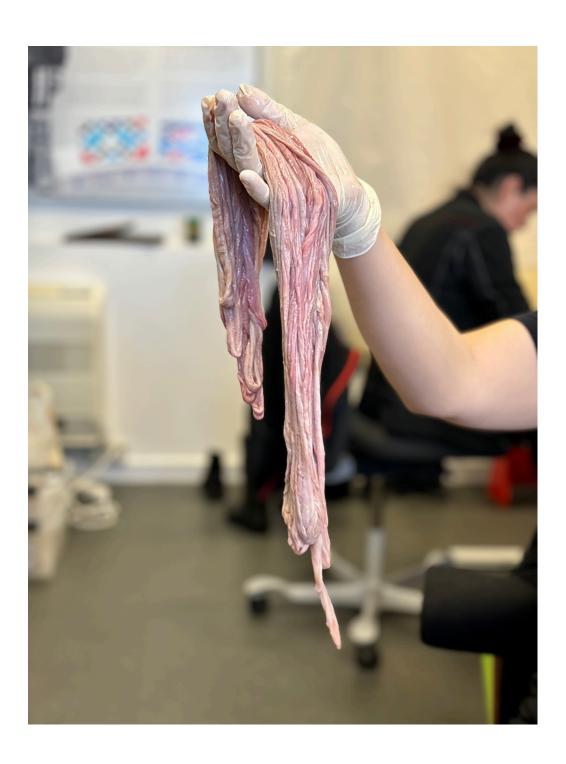


My mother's hands II, by Julie Bach (2025). Made of pig intestines. Photo by Soffi Chanchira Larsen (2025).









At the top: Examination of a preserved kapiseq at the Greenland National Museum. Cleansing of bearded seal intestines.

At the bottom: Cutting of harp seal intestines, and intestines after cleaning and scraping. All photos were taken during a sharing workshop (2025).

Workshop and sharing knowledge

In February 2025, ahead of the exhibition, a knowledge-gathering workshop on traditional gut-working was held in Nuuk. Participants explored methods of cleaning, drying, splitting, and sewing gut with fine, waterproof stitches.

In collaboration with the sewing workshop Kittat in Nuuk, the group combined hands-on craftwork with the sharing of cultural expertise. From Kittat, Sara Marie L. Berthelsen and Johanne Markussen contributed their knowledge of sewing techniques and terminology. From the Greenland National Museum, curators Aviâja Rosing Jakobsen and Randi Sørensen Johansen gave presentations on the museum's collections and archival materials related to gut work. The process unfolded step by step through experimentation, with space for both learning and innovation.

The workshop used the intestines of a bearded seal, harp seal, blue-sided seal, and pig. From the outset, a key focus was to compare thickness and strength between species. New methods were also tested, such as machine-dyeing gut. Drying was carried out under different temperature conditions—from freezer, to cold outdoor air to indoor warmth—to observe variations in outcome.

After drying, participants experimented with cutting the gut in different directions, revealing how the material changes shape depending on handling. Various sewing techniques were also tested. While waterproof finishing seams were not always achieved, the experiments opened new perspectives on possible techniques.

Overall, the workshop was considered highly rewarding, not only for the technical insights it produced but also for the collaborative sharing of knowledge.

Experiments included drying techniques, coloring, sewing with fine and waterproof stitches.







At the top: Scraping of seal intestines.

At the bottom: Dyeing the intestines with watercolor, and discussing the process learned during the workshop.



How our ancestors worked with gut

Knowledge of tanning and leather preparation has always been essential for survival in the Arctic. Our ancestors knew which animal hides were suited for specific purposes and how each type of hide should be processed. Hides and skins were prepared for tools, garments, and other functional objects, adapted carefully to their intended use. Tanning was never finished work—leather and gut products required continuous care and repair throughout their use.

In sewing, hides from both land and sea animals were cut, shaped, and stitched to create tools and clothing. Bird skins, fish skins, and even animal intestines—such as trachea, membranes, stomach, tendons, and gut—were also used in tanning and handcrafting.

Gut-working, in particular, was a highly developed practice. When prepared correctly, gut becomes a lightweight, flexible, and waterproof material. Everything made from it was rooted in practical use.



Seal gut washed in seawater, 1935, East Greenland. Photo by Robert Gessain, NKA.

Historical evidence shows that Greenlandic Inuit long produced objects from animal gut, including seal, walrus, whale, and polar bear intestines. Gut was stretched, shaped, and sewn for a wide range of purposes. One example is gut windows: translucent coverings for stone and turf houses, which allowed light to enter while protecting against wind and weather. Gut was also used as tent drapes, bags, waterproof clothing such as anoraks, toys, and even ceremonial objects like drum skins. A hundred years ago, the making of these items was already in decline. This became evident after surveys carried out in certain places in Greenland in 1948–49, following the introduction of imported goods into colonial trading posts.

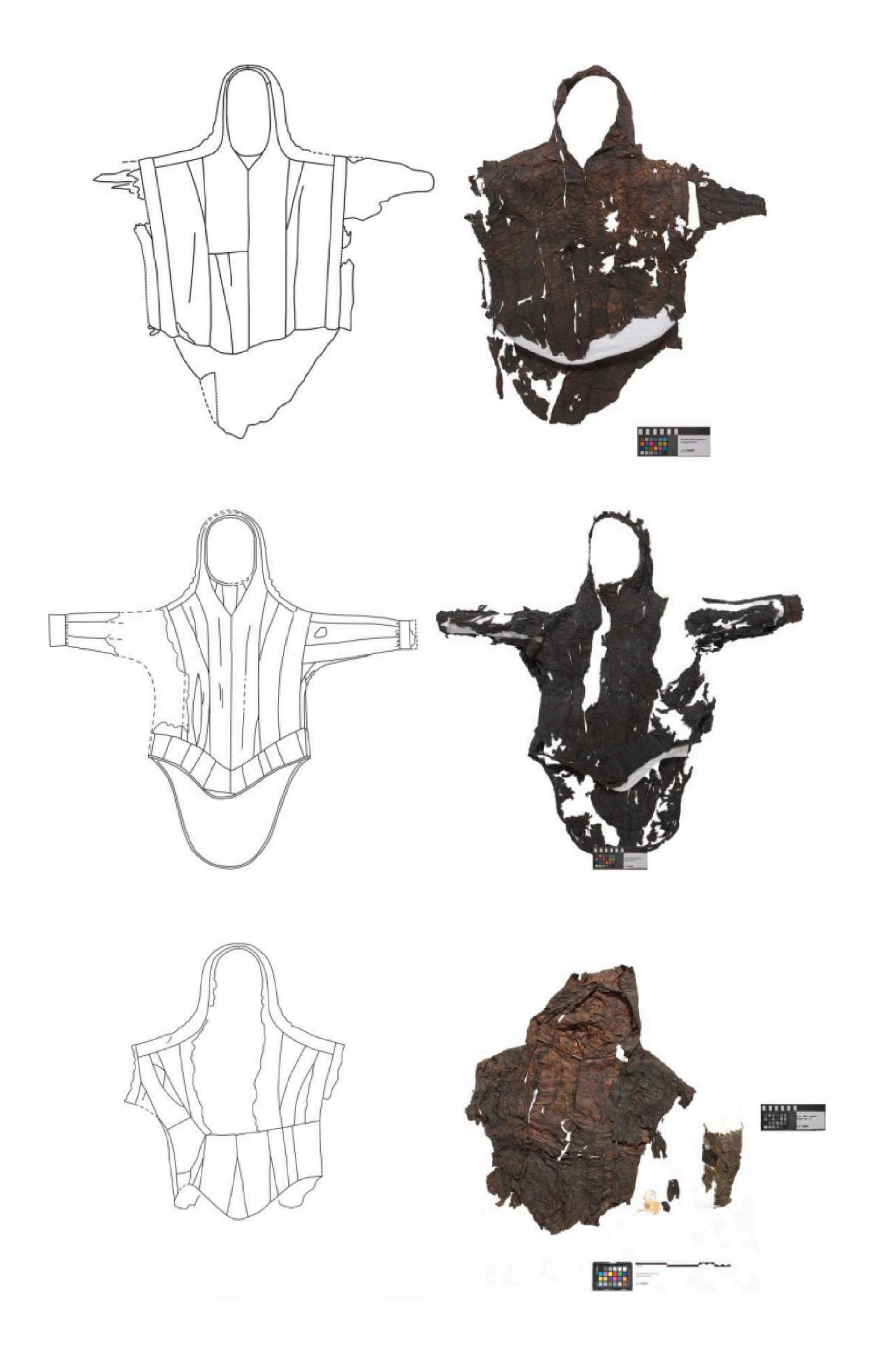


A person with a kapiseq. Photo from the Greenland National Museum and Archives collection.

Archaeological finds of gut-based objects are rare, since gut decomposes quickly. However, Kapisit — gutskin parkas — are among the few surviving examples. Some found in Greenland date back up to 600 years. Excavations at Nuulliit in northern Greenland uncovered three kapisit, providing valuable insight into traditional techniques.

The findings revealed two sewing methods: running stitch and overcast stitching. The kapisit were made from intestines of spotted seal and walrus, with widths ranging from 4 to 13 cm depending on the animal's size. Details of cutting, stitch density, and thread material were preserved: threads were made from beluga and minke whale sinew, edge seams used continuous pinched-seam stitching with 20–30 stitches per 10 cm, and decorative elements were attached with running stitch using hairless sealskin.

Kapisit were worn in wet conditions and especially during kayaking in rough seas, as an outer layer over clothing. They were practical for both land and sea, and were worn by men, women, and children alike.



Photos and drawing of kapisit. Photographer:
Roberto Fortuna, images from the National
Museum of Denmark
(2020). Illustrations
based on Erik Holtved's drawings from 1954.

Traditionally, knowledge of tanning and gut-working was passed down orally through demonstration, from generation to generation. For the past 300 to 200 years, written descriptions by explorers, missionaries, and colonial officials also provide information about gut work and gut-made objects in Greenland.

According to historical sources, fresh intestines were first soaked in sealoil for several days. The maker then carefully scraped them with their teeth, removing fat and membranes to leave only the gut material. Sealoil was sometimes poured inside the gut to ease the process. After scraping, the intestines were rinsed in water to remove blood, inflated by blowing air into them, dried, and prepared for sewing. Both large and small intestines from seals, as well as intestines from walrus and beluga, were used in crafting.

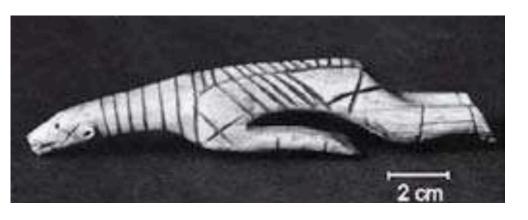


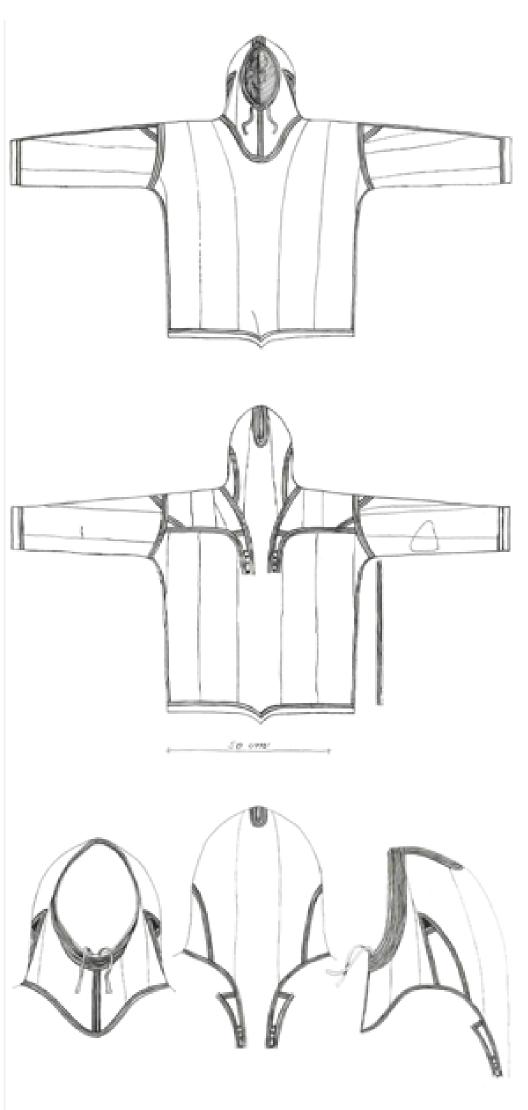
Amulets sewn on clothes

In oral stories and myths, it is often said that our ancestors believed in a close relationship between humans and animals—that the strength of animals could be transferred to people. This belief is also reflected in museum collections, where tools, weapons, and garments were decorated not only for beauty but for purpose. Decorations could bring joy to the owner, attract animals, enhance hunting abilities, and ensure a safer life. Two kapitsat preserved in collections are decorated with amulets. These decorative additions were believed to transfer animal ability, endurance, and strength to the wearer.

The patterns. One kapiseq from Tasiilaq, sewn in 1935, shows decorations inspired by the bones of a polar bear. Made of gut and adorned with hairless sealskin, the decorations were tightly sewn with running stitches, while the edges were overcast. This means the amulet was added after the kapiseq was constructed. Similar amulets are commonly found among Inuit across the Arctic. Carved from tusk, this type of amulet has origins in Igloolik in Canada and has been traced back to around the year 500, making it one of the oldest known examples. The strength of the bear was highly valued and believed to be transferred to humans.







Personal kapiseq, belonging to Jens Rosing.

Now preserved at the Greenland National Museum.

The kapiseq is from Tasiilaq, 1935. Jens Rosing himself drew the illustration.

At the top right: the oldest known figure from Igloolik, Canada.

In Greenland, the souls of walruses were considered just as precious as those of polar bears. Another preserved kapiseq features tusk-inspired decorations. Hunting walruses was challenging, often requiring cooperative efforts to haul them across the ice. Walruses are remarkable for their ability to hold their breath underwater for long periods, a trait admired by the Inuit and symbolically transferred through these amulets. The kapiseq was decorated along the sides with leather, highlighting both artistry and reverence.

Not all kapitsat included amulets. Most were decorated at functional points such as the wrists, hood, and waistband. While the amulets were symbolic rather than functional, they also served to protect the seams of the garment



Illustration of a seal being gutted. Illustrated by Magda-Maria Treur (2025).

Contemporary observation

Today, guts are prepared as food and enjoyed, often eaten alongside other traditional foods, especially during ceremonial occasions. The most common type is cooked gut, which becomes soft and can be served as is or with blubber. Dried guts are also eaten and are highly nutritious. Although gut remains a popular food, its use as food has evolved over the years.

Changes in eating practices and the availability of other foods have influenced its use. Nevertheless, this cultural knowledge has been preserved in many communities and passed down to younger generations. Thus, the project demonstrates that gut can be used for more than crafting, sewing and artistry and can still be applied in innovative ways in contemporary society. It also provides opportunities for creating new works.

Today, gut is still prepared and enjoyed as food, often eaten alongside other traditional dishes, especially during ceremonial occasions. The most common preparation is cooked gut, which becomes soft and can be served on its own or with blubber or meat. Dried or stuffed gut, is also consumed and valued for its high nutritional content. While gut remains a popular food, its use has evolved over time. Changes in eating habits and the availability of other foods have influenced how it is consumed, yet this cultural knowledge has been preserved in many communities and passed down to younger generations.

The project demonstrates that the gut is more than a food source—it can also serve as a material for crafting, sewing, and artistic creation, with potential for innovative applications in contemporary society. It highlights how traditional practices can inspire new works and ideas.







Kukkarnaaq. Intestine filled with seal blood. Photograph from Tasiilaq, 1935. Photographer: Robert Gessain. Image from the Greenland National Museum and Archives collection. At the top right: intestines hanging to dry. Photograph from Qaarusuk, 1936. Photographer: Jette Bang, Danish Arctic Institute.

At the bottom: boiled seal intestine eaten with fat. Private photo (2025)

When crafting sewn objects, gut preparation is approached with careful attention to traditional techniques, followed step by step. The project also documented knowledge on methods such as soaking, drying, splitting, and sewing with fine, waterproof stitches. The results of this comprehensive study are now presented, along with detailed observations of step-by-step techniques.

Thoughts from the Experiment Which Seal?

"I remember hearing that the intestines of a bearded seal used for making a kapiseq were also used for windows," says Sofie Amondsen, adding further explanation.

"They filmed a teaching session on Oqausimut Quviasuutiqarniq and Uqauhimut Quviahuutqarneq (Language Celebration) in Iqaluit, which was presented during Nattiq 2024. I asked whether they had seen people working with seal gut and if they had knowledge of it. One person answered: 'I remember as a child seeing people using bearded seal gut."



Sofie Amondsen is gutting a harbour seal and removing the intestines, photograph from Hysværet, Norway (2025). Private photo.

At the bottom: bearded seal intestines, freeze-drying (2024), first experiment. Private photo.

In Norway, at Hysværet in April 2025, six new spotted seals were examined during a workshop attended by Sofie Amondsen. The intestines of two of the larger seals were studied in detail. The first intestines were large, but unfortunately, one seal had been in the water for three days, and its intestines had already turned green and odorous, making them unusable. The last spotted seal was big, but its intestines were not very wide—they resembled those of a harp seal. The length of the examined intestine was approximately 18–19 meters, and the intestines of a smaller spotted seal were nearly the same length.

During a joint experiment with Kittat in Nuuk in February 2025, it became clear that the most resilient and widest intestines came from the bearded seal. Through testing different types of seal gut, Sofie Amondsen observed that the intestines of a large bearded seal are particularly strong and well-suited for crafting. Their width is most apparent after the intestines have been stretched during preparation. When inflated, dried, and cut open, the intestine unfolds completely, providing an ideal material for sewing and other uses.

Based on these experimental observations, detailed instructions on how to work with gut can be found in the following pages.



Gut processing

Seal blubber oil (if available)

In this section, we present the methods we have used for gut processing. It is important to remember that gut can be processed in a variety of ways, and different techniques may be used depending on the desired outcome.

The first step is to obtain the gut you wish to work with. It can be either fresh or previously frozen. If using frozen gut, it should be thawed and soaked in cold water before use. There are some differences between fresh and frozen gut: frozen gut tends to have stickier membranes, but both types are equally suitable for processing.

Once you have the gut, the following tools are needed:

Tools for drying: Tools for gut processing: Tools for sewing: Slippery scraping board Water Drying rack Seashell Seal blubber oil (Iginneq) Thread Needle or awl Needle Spoon Bucket Senew (tendon thread) String Trash can Frame for stretching

Cloth

Processing

Step One – Prepare Yourself

Sit or stand comfortably to avoid fatigue, and make sure you are working in a well-ventilated space. Proper posture and lighting make the process easier and safer.

Scraping

If using fresh gut, rinse it thoroughly with fresh or sea water to remove blood and contents. Repeat several times until it is completely clean. Even fresh gut may have dark spots; if it smells or appears spoiled, cut away the affected parts and discard them.

Top: Harp seal intestines being cleaned (2025) Bottom: Bearded seal intestines cleaned (2025)



Scraping board

Place the gut on the scraping board and begin by cutting open one end. Turn the gut toward yourself and scrape along its entire length. Wooden boards provide better grip and make handling easier. The quality of the wood affects how slippery the board is. Historically, small scraping boards made from bone were often used.



Top: Beginning of the bearded seal intestine scraping process (2025). Bottom: The scraping board is made of bone, shown with Gut-Skin and senew thread. Collected in Tasiilaq, 1885. Preserved at the Greenland National Museum. Photographer: NKA (2025)

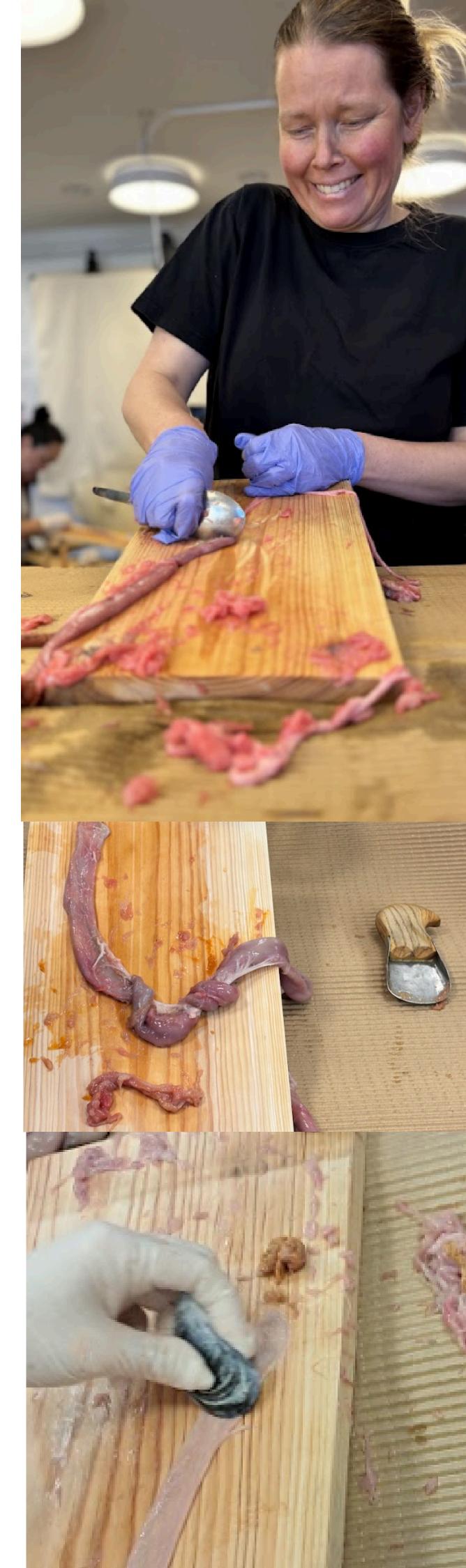
The scraper and scraping:

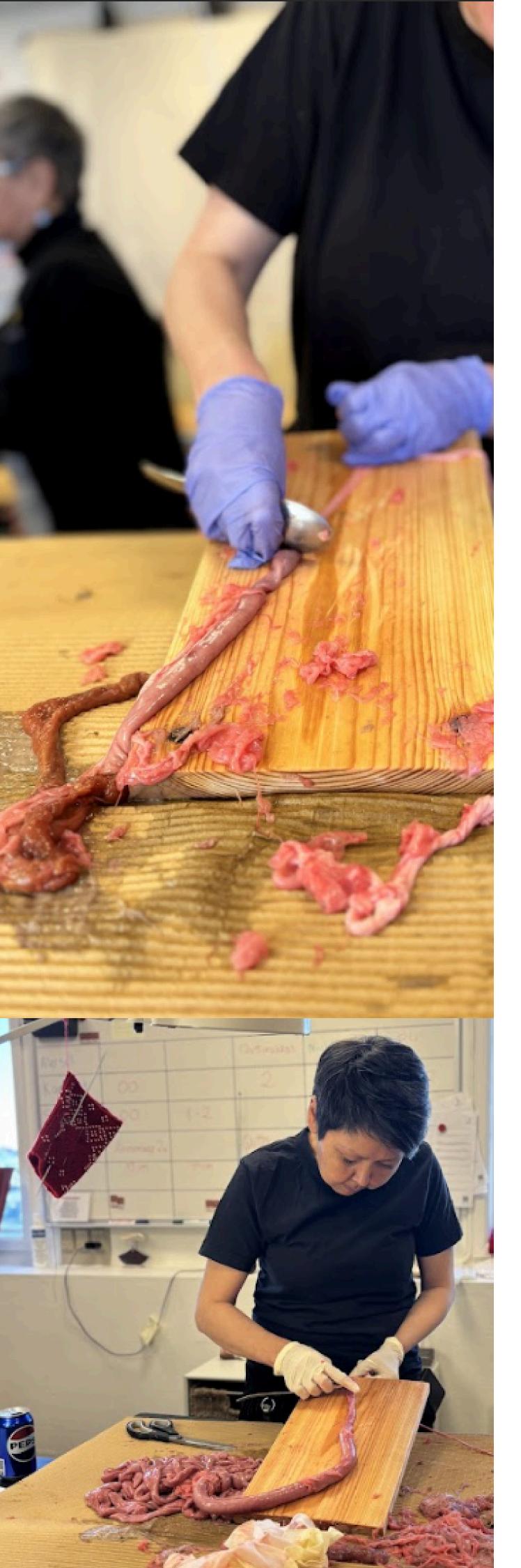
The type of scraper affects how tightly the gut can be pressed without tearing. A seashell is commonly recommended, as it is neither too sharp nor too blunt. If using a spoon, more forceful scraping is required. The choice of scraper also depends on the animal: guts from smaller animals are more fragile and require gentle handling, while bearded seal gut is tougher and can even be scraped with an ersorseq (scraper).

Top: Intestine being scraped with a spoon.

Middle: Scraping with an ersorseq, a scraper.

Bottom: Scraping with a shell.





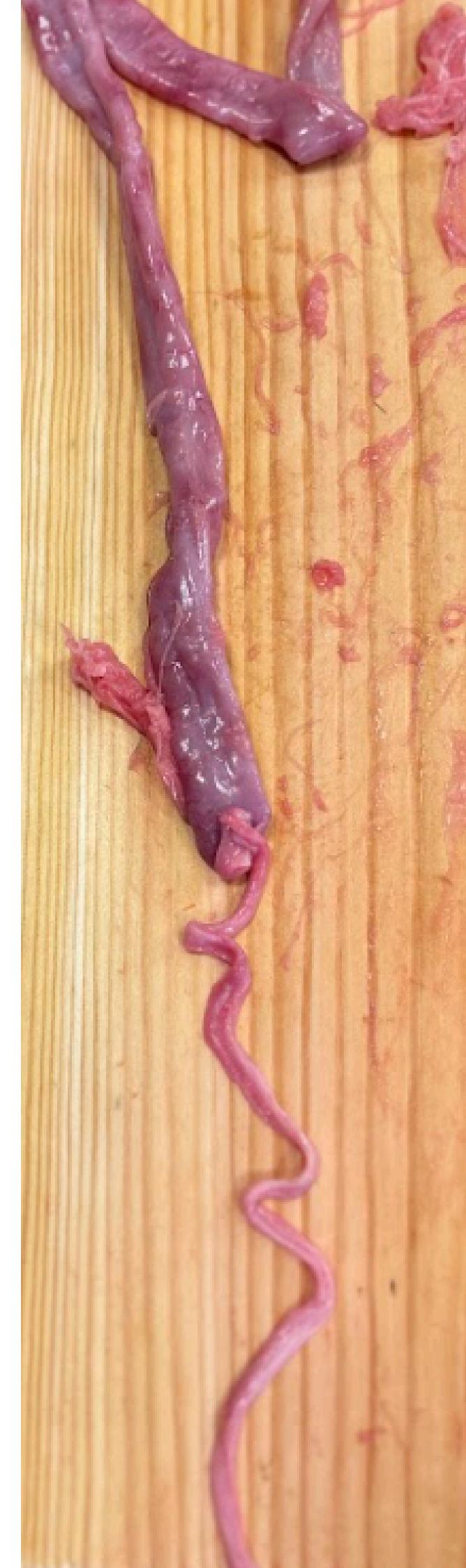
Outer Membrane

During scraping, fat and tissue collect inside the gut. Press residue out through the opening at the starting end, and if the gut is long, also at the far end. Hard spots may appear on the outer membrane, which require extra caution. Do not press directly on these areas; instead, place them on the board and cut away or remove the hard sections carefully to avoid holes.

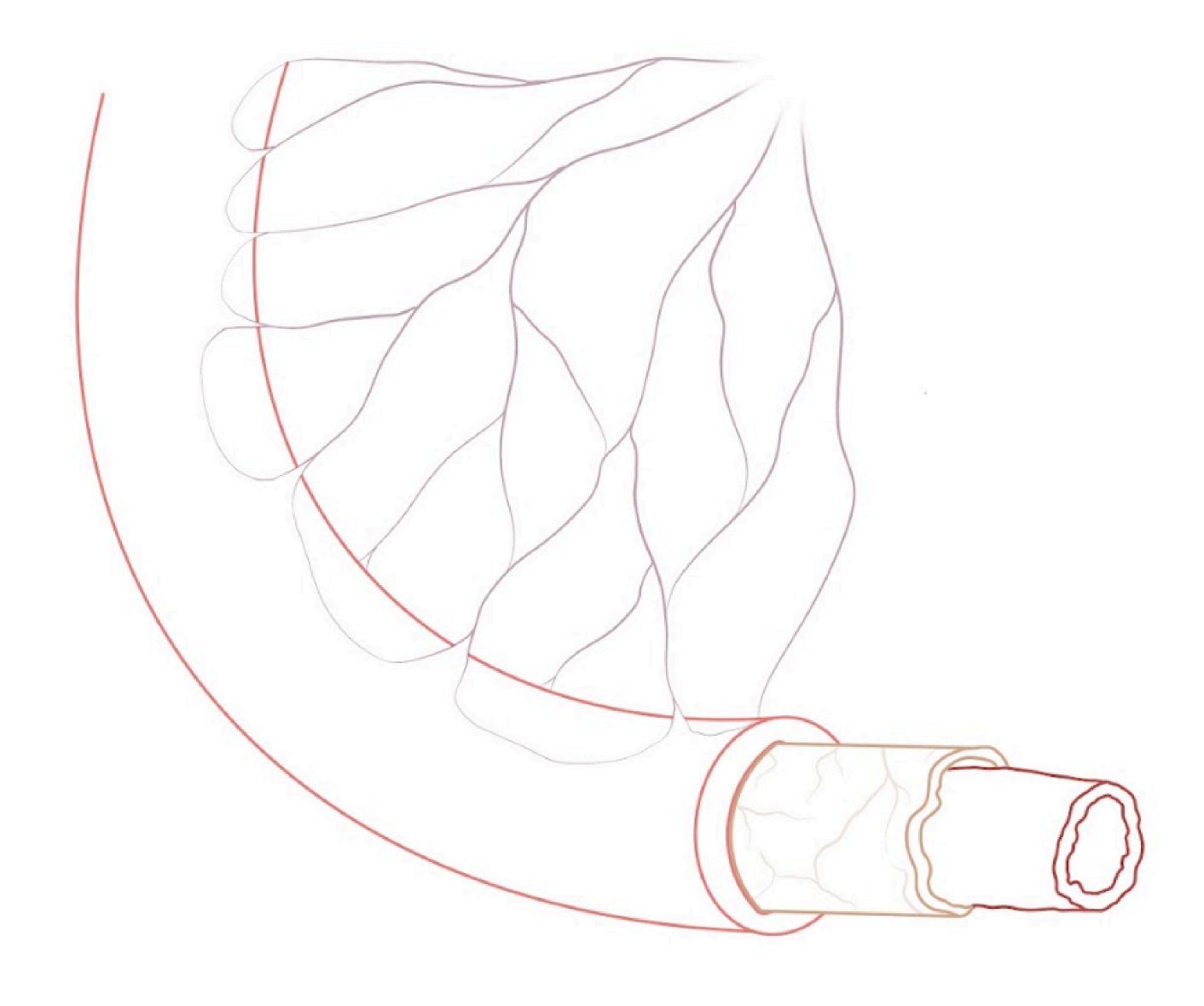
Outer membrane scraped with a spoon.

The Gut

Once fully scraped and cleaned, the gut can be soaked in salted water. The goal of soaking is to remove all remaining blood. As the gut sits in water, the blood may change the color of the water. It can usually be soaked for up to three days in a cool, dark place without damage. Leaving it too long, however, can lead to decomposition or unpleasant odors.



Harp seal intestines, with outer and inner membranes scraped off.



Structure of the intestine. Illustrated by Magda-Maria Treur (2025). The structure consists of the outermost membrane, called qiaq, and the inner membrane, called seqiaq. The clean gut-skin is in the middle.

Drying

After soaking, remove the gut from the bucket. Begin by gently wiping it with a cloth or textile. Then, tie one end of the gut with thread to prepare it for inflation.

Method for working alone

Tie one end of the gut. Depending on the size of your stretching frame, the gut can be shortened to the desired length. After inflating, tie the other end. The inflated gut can also be wiped clean for further handling.



Top: Image of working with gut inflation independently (2025).

Bottom: Image of working with gut inflation alone, 1934.

Photographer: Robert Gessain, NKA.

Stretching with Assistance

Insert air from the other end. For very long guts, it is easier to do this with help. The assistant should carefully monitor for holes: if none appear, the gut will inflate fully. Once inflated, the thread should be ready to tie off the end.

If holes are present, air will escape. Locate each hole, press carefully, and seal it by wrapping thread around it. If the gut deflates during inflation, repeat the process until all holes are sealed. Once complete, the assistant can tie off the starting end of the inflated gut.





Freezer-dried gut

For freezer-drying, use a container or cold winter air. Tie the ends of the gut to a frame with thread to keep it secure. As the gut inflates, it may stretch unevenly; gently stretch the ends outward and ensure the gut does not touch the floor or any surface. Contact with surfaces can leave marks or cause sticking. When properly freezer-dried, the gut turns white.

Drying outdoors

In cold conditions, stretch the gut without letting it touch the ground. Once frozen and dried outdoors, the gut becomes white.

Drying indoors

The same principle applies indoors: stretch the gut without letting it touch the floor or other surfaces. If there is no frame to tie the ends, suspend them from above using strings. Indoor drying preserves translucency, and the gut does not turn white.

Top: Freeze-drying. Temperature: -18°C to -21°C. Middle: Drying outdoors. Ambient temperature: app. -5°C to -8°C. And bottom photo: Indoor drying.



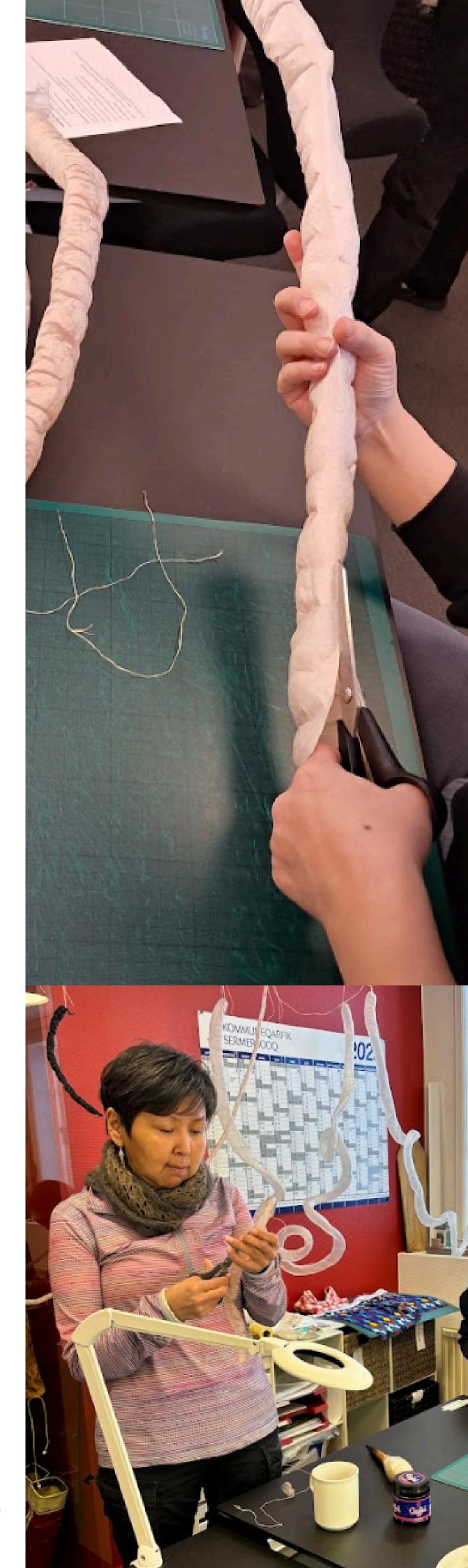
Bearded seal intestines: the one on the right is freeze-dried. The middle one is also dried outdoors, and the last one is dried indoors; note that the intestine has turned slightly translucent.

Cutting

Keep in mind that gut has natural lines, and some areas are thicker and stronger than others.

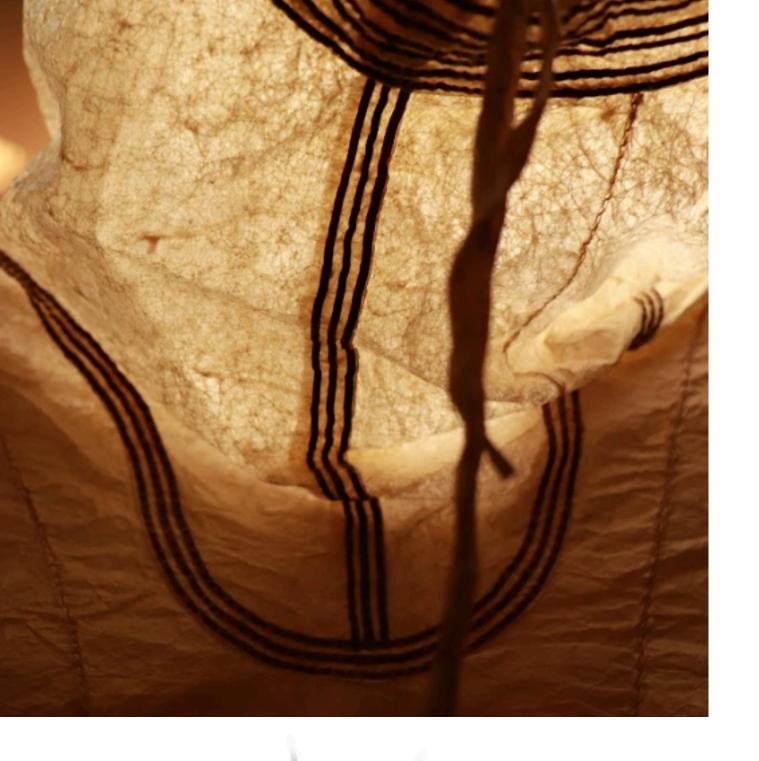
Once dried, the gut can be carefully cut open to allow it to unfold. For straighter, cleaner edges—especially if you plan to sew the gut—cut along the rounded side. This method provides well-defined edges and makes sewing easier.

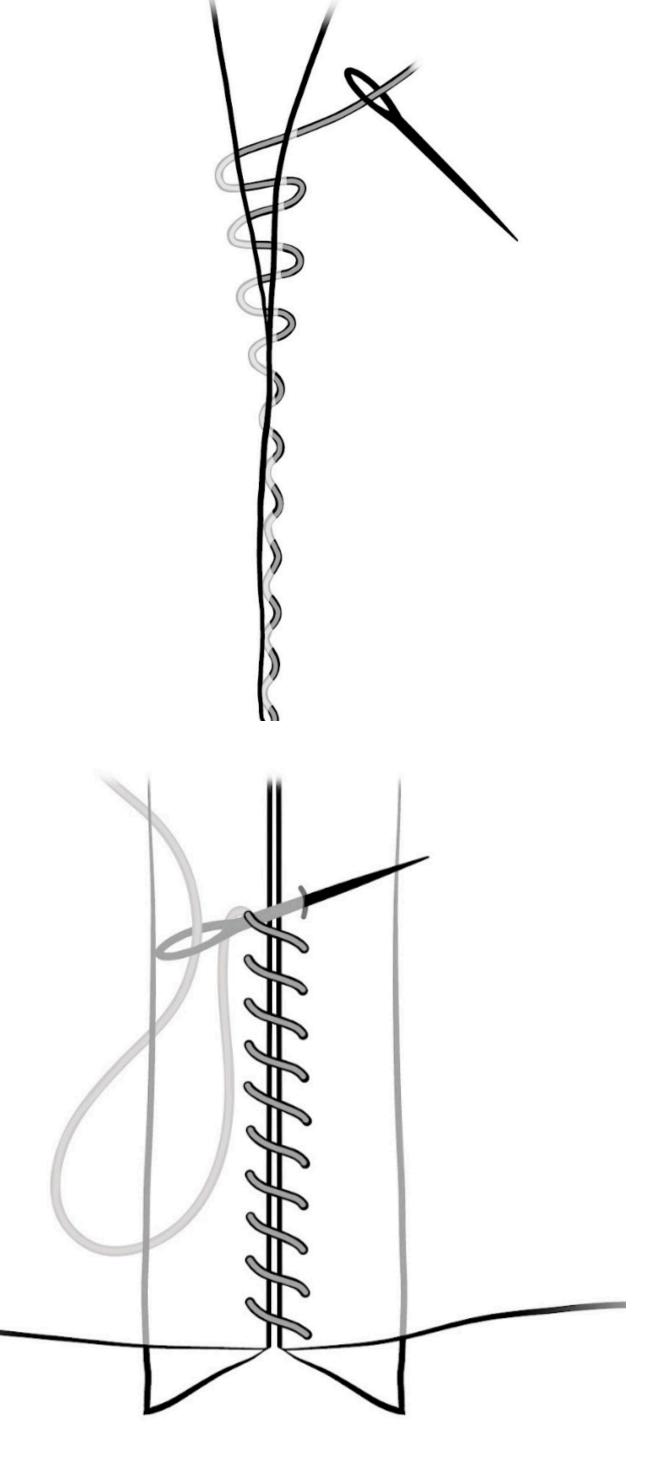
Cutting along the rounded side may result in slightly wavy edges. The choice of cutting technique ultimately depends on the intended use of the gut and the type of object you are creating.



Dried intestine cut with scissors. Top: bearded seal being cut.

Bottom: harp seal





Sewing

Among the collections at the Greenland National Museum, one can see how gut objects were traditionally assembled—that is, how they were sewn.

Some preserved objects, including kapisit, reveal common sewing techniques. Around the neckline, wrists, and abdomen, garments are often finished with leather strips and decorated with avittat (appliqué patterns). The leather strips were attached using the running stitch, a sewing technique used in appliqué. This stitch begins on the inside of the material and emerges at the surface, moving up and down as the sewing progresses. In addition, the collections include examples of items sewn with pinched seams, where pieces are joined edge to edge and sewn along the seam so the edges of the material meet precisely.

Top: Close-up photo of a kapiseq. The leather strips were attached using the running stitch. The intestine is sewn with overcast stitching. Middle: Illustration of running stitch by Magda-Maria Treur (2025).

Bottom: Illustration of overcast stitch by Magda-Maria Treur (2025)

The thickness

During her research, Sofie Amondsen collaborated with Inuit from Alaska who had experience working with seal gut. She learned that the thread should ideally be thicker than the needle. This allows seams to be drawn tightly—a crucial factor for waterproof pieces.

Meqqutip isaa - Ujalussiap silissusaa naatsorsuutigalugu meqqutip isaanut nuisinnaasumik meqqutilerneqartariaqarpoq. Ujalorisap suunera apeqqutaanerpaavorli.

Differences Between Guts

The drying method also affects sewing. Gut dried outdoors tends to be more brittle and requires careful handling, while gut dried indoors is more pliable but slightly stiffer. These properties influence how the material can be stitched and how tightly seams can be drawn.

To make sewing easier, it is recommended to rub seal oil onto the areas where stitching will take place. This softens the gut and makes it more flexible, helping the needle pass through without tearing the material.



Top: Seal's throat sewn as thread.

Bottom: Seal intestine tested as sewing thread. All threads are dipped in seal oil.



Innovation

Now you can create your own items from gut. The material can be sewn, dyed, painted, and shaped into a variety of objects. Arts, bags, lamp shades, or even earrings can be made from gut—your imagination is the only limit.

Dyeing: In our experiments, we tested fabric dyes in yellow, pink, and black. Dyeing must be done before the gut is inflated and dried, that is, after it has been cleaned and split. If using machine dyeing, follow the instructions on the dye package, including recommended washing temperatures. Even if the gut does not absorb the dye completely, the final result will still show the color applied.

Painting: Painting with watercolors is another method for coloring gut. This is done after the gut has been fully cleaned, prepared, and stretched open. Like painting on other surfaces, the pigment is applied directly on top of the gut, allowing for patterns, designs, or subtle coloration.

Shaping: The final shape of the gut depends on where and how it is dried. For example, when gut is stretched and dried over a large bag, the part in contact with the surface will dry smooth and shiny. In general, gut takes on the form of whatever it is placed against during drying. From our experience, gut can be shaped creatively by placing it on different objects, allowing for unique textures and forms.



For your own crafting

Now that you know how gut preparation can be done, and how innovation is possible, we hope you will be inspired to try working with gut yourself — either alone or together with others.

To get you started, here is a checklist of tools and materials you will need:

I have

Needle, awl Gut String Bucket ☐ Frame for stretching Salt Slippery scraping board Cloth Paints (for experimenting) Spoon or seashell Scissors Seal blubber (if available) Trash can Thread, sewing thread Needle Thread

Sketch your ideas.

Acknowledgements

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Your support enabled Sofie Amondsen and Julie Bach to create arts and objects for exhibition, conduct research, experiment, develop new techniques, and share knowledge. This collaboration was undertaken to revive Greenlandic gut-working traditions and inspire others to engage with this craft. The resulting works serve both as sources of inspiration and as a means to convey knowledge of how gut was used throughout our history. Gut preparation is not merely a technical skill—it is a meaningful practice, connecting past and present through art and daily life.

We also extend heartfelt thanks to seamstresses Sara Marie L. Berthelsen and Johanne Markussen (from Kittat), who joined us in experimenting with gut and co-creating knowledge, which will now be shared with society and presented in exhibitions. Our gratitude also goes to Anne Mette Olsvig, director of the museum in Qasigiannguit, for sharing her extensive knowledge of past and present gut preparation, and to Addison Field, head curator at the Alaska State Museum, for providing access to the publication accompanying their exhibition on gut artifacts: Visceral: Verity, Legacy, Identity: Alaska Native Gut Knowledge and Perseverance by Sonja Kelliher-Combs and Ellen Carrlee.

Most importantly, we thank the hunters who made gut material available: Bearded seal intestines provided by Andrew Wong (Igloolik) and Sommer Tønnesen (Maniitsoq); Harp and ringed seal intestines provided by hunters in Nuuk: Ole Jonathansen, John Ottosen, UjuansinguaK' Kreutzmann and Andreas Olsen; and Beluga whale intestines provided by Niels Mijunge (Qaanaaq). Finally, our sincere thanks to Boas Poulsen, whose invaluable assistance supported Sofie Amondsen throughout the entire process.

References:

Arnat Peqatigiit Kattuffiat (1987). Ujallut. Pilersuiffik.

Biilmann, Martha (1990). Amminik suleriaaseq. Atuakkiorfik.

Birket-Smith, Kaj (2024). Ethnography of the egedesminde district. With aspects of the general culture of west Greenland. Meddelelser om Grønland no. 66.

Buijs, C. C. M. (2004). Furs and fabrics: transformations, clothing and identity in East Greenland. Mededelingen van het Rijksmuseum voor Volkenkunde. CNWS Publications, Leiden.

Cucina A, Schmidt AL, Di Gianvincenzo F, Mackie M, Dove C, Jakobsen AR, Grønnow B, Appelt M, Cappellini E. (2024). Paleoproteomic identification of the species used in fourteenth century gut-skin garments from the archaeological site of Nuulliit, Greenland. Sci Rep.

Danmarkine katerssugausivigssûp naqitertitai (1948). Katerssugausivigssûp kalâtdlit nunâne pâsiniagai. No. 1, amerinek agdlunâtdlo.

Godfredsen, Anne Birgitte. Martin Appelt & Kirsten Hastrup (2018). Walrus history around the North Water: Human-animal relations in a long-term perspective. Ambio 47 (suppl 2).

Hatt, Gudmund (1914). Arktiske Skinddragter. I Evrasien Og Amerika. En etnografisk Studie. København, F. H. Schultz Forlagsboghandel. Geografisk Tidsskrift, Bind 23.

Kalaallit Nunaata Katersugaasivia (1985). Gustav Holmip Katersaatai. Ammassalimmut umiamik ilisimasassarsiornermi 1883-85 katersorneqarsimasut.

Kapel, Finn (2005). Otto Fabricius and the Seals of Greenland. Bioscience. Published by The Danish Polar Center (vol. 55).

Nunatta Allagaateqarfia. H.C. Petersenip allagaatai. P10.00.42.

Pisiniartoq 48 (1978). Annoraap (iggiap) allai. Den Kongelige Grønlandske Handel.

Pisiniartok' 11 (1966). Iggiak. Den Kongelige Grønlandske Handel.

Schmidt, Anne Lisbeth (2022). An Analysis of 600-year-old Gut-Skin Parkas of the Early Thule Period from the Nuulliit Site, Avanersuaq, Greenland. Arctic Anthropology (vol. 59, no. 2).