

## The SkinBase Project: Providing 3D Virtual Access to Indigenous Skin Clothing Collections from the Circumpolar Area

### Le projet SkinBase : Offrir un accès virtuel en 3D aux collections de vêtements en peaux de la région circumpolaire

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#### Résumé de l'article

En 2014, le Musée national du Danemark (NMD), en collaboration avec le Musée national et les Archives du Groenland (Nunatta Katersugaasivia Allagaateqarfialu [NKA]), ainsi qu'avec le Musée d'histoire culturelle d'Oslo, lancé le site internet Skin Clothing Online (« Vêtements de peau en ligne »). L'ensemble des 2170 vêtements de peau de la collection du NMD provenant des régions circumpolaires, datés entre 1830 et 1950 environ, y a été présenté. Les vêtements peuvent être étudiés dans leurs plus menus détails grâce à des photos ayant une très haute résolution. Cent costumes complets ont été photographiés de tous les côtés. Par ailleurs, 107 morceaux de vêtements ont été mesurés au moyen de la technologie 3D, ce qui a permis de dessiner des patrons précis en deux dimensions. La documentation est accessible au public par le site internet, à condition de respecter les licences Creative Commons BY-SA pour les photos et BY-SA-NC pour les patrons. Le site se base sur la banque de données SkinBase. Depuis 2017, une partie de la collection de vêtements de peau archéologiques de Qilakitsoq (environ 1475 après J.-C.) du NKA de même que des éléments vestimentaires historiques ou issus de la mode contemporaine ont été rendus accessibles, suivant les mêmes règles par rapport au droit d'auteur que pour les photos. Le personnel du NKA a enregistré sans difficulté les objets dans la base de données en utilisant un réseau privé virtuel (RPV). Les musées nationaux danois et groenlandais encouragent des partenaires internationaux à contribuer au site par l'enregistrement de nouveaux objets. Le but est de créer un forum collaboratif d'information et de recherche, facilitant pour tous l'accès à un pan unique, mais fragile du patrimoine culturel circumpolaire. Le Musée polaire de Cambridge sera le prochain à contribuer au site par des vêtements des peuples de l'Arctique, ainsi que par des vêtements utilisés lors d'expéditions en Antarctique.

# The SkinBase Project: Providing 3D Virtual Access to Indigenous Skin Clothing Collections from the Circumpolar Area

Anne Lisbeth Schmidt<sup>i</sup>

## ABSTRACT

In 2014, the National Museum of Denmark (NMD), in conjunction with the Greenland National Museum and Archives (Nunatta Katersugaasivia Allagaateqarfialu [NKA]), as well as the Museum of Cultural History, Oslo, launched the website Skin Clothing Online. The site presents the NMD's total collection of 2,170 historic skin clothing items, dating from circa 1830 to 1950, from the circumpolar area. The clothing can be studied in minute detail due to high-resolution photos; 100 complete suits were photographed from all sides. Furthermore, 107 items of clothing were measured by means of 3D technology, which can be used to draw precise two-dimensional patterns. The documentation is made accessible to the public through a website, in compliance with creative commons licenses: CC-BY-SA for the photos and CC-BY-SA-NC for the patterns. The website uses content from the database SkinBase. Since 2017 parts of the NKA's collection of archeological skin clothing from Qilakitsoq (circa 1475 AD), as well as historical garments and contemporary fashions, have also been made accessible, in keeping with the same copyright rules for photos. The NKA staff entered the items into the database without difficulty using a Virtual Private Connection (VPN). The Danish and Greenlandic national museums encourage international partners to contribute items to the website. The aim is to create a collaborative open forum for information and research with easy access for everybody to unique, fragile pieces of circumpolar cultural heritage. With clothing from Arctic peoples and clothing used on expeditions to Antarctica, the Polar Museum in Cambridge will be the next museum to contribute to the website.

## RÉSUMÉ

**Le projet SkinBase: Offrir un accès virtuel en 3D aux collections de vêtements en peaux de la région circumpolaire**

En 2014, le Musée national du Danemark (NMD), en collaboration avec le Musée national et les Archives du Groenland (Nunatta Katersugaasivia Allagaateqarfialu [NKA]), ainsi qu'avec le Musée d'histoire culturelle d'Oslo, lancé le site internet Skin Clothing Online (« Vêtements de peau en ligne »). L'ensemble des 2170 vêtements de peau de la

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collection du NMD provenant des régions circumpolaires, datés entre 1830 et 1950 environ, y a été présenté. Les vêtements peuvent être étudiés dans leurs plus menus détails grâce à des photos ayant une très haute résolution. Cent costumes complets ont été photographiés de tous les côtés. Par ailleurs, 107 morceaux de vêtements ont été mesurés au moyen de la technologie 3D, ce qui a permis de dessiner des patrons précis en deux dimensions. La documentation est accessible au public par le site internet, à condition de respecter les licences Creative Commons BY-SA pour les photos et BY-SANC pour les patrons. Le site se base sur la banque de données SkinBase. Depuis 2017, une partie de la collection de vêtements de peau archéologiques de Qilakitsoq (environ 1475 après J.-C.) du NKA de même que des éléments vestimentaires historiques ou issus de la mode contemporaine ont été rendus accessibles, suivant les mêmes règles par rapport au droit d'auteur que pour les photos. Le personnel du NKA a enregistré sans difficulté les objets dans la base de données en utilisant un réseau privé virtuel (RPV). Les musées nationaux danois et groenlandais encouragent des partenaires internationaux à contribuer au site par l'enregistrement de nouveaux objets. Le but est de créer un forum collaboratif d'information et de recherche, facilitant pour tous l'accès à un pan unique, mais fragile du patrimoine culturel circumpolaire. Le Musée polaire de Cambridge sera le prochain à contribuer au site par des vêtements des peuples de l'Arctique, ainsi que par des vêtements utilisés lors d'expéditions en Antarctique.

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**T**he National Museum of Denmark (NMD) holds a unique collection of skin clothing from circumpolar Indigenous Peoples, collected between circa 1830 and 1950 from Greenland, Arctic Canada, Alaska, Siberia, and Fennoscandia. The collection comprises 2,170 items of historical skin clothing for men, women, and children. The various garments were made from a wide range of skins of marine and terrestrial mammals, with and without hair, and from intestines (gut skin), as well as skins from birds- and fish. Around 900 items of clothing were collected among the Greenlandic Inuit before 1920 by expeditions and various donors, while most of the North American collection, which contains around 850 items, was donated to the NMD by the Fifth Thule Expedition (1921–1924), the Danish Expedition to Arctic North America, and the Gjøa Expedition (1903–1906), which discovered the Northwest Passage and was led by the Norwegian polar explorer Roald Amundsen (1872–1928). The Siberian collection contains around 300 items, most of which were purchased and donated to NMD in 1928 by the Danish polar explorer and anthropologist Knud Rasmussen (1879–1933), while most of the Saami collection, of about 120 items, was gathered in the early twentieth century.

From 2009 to 2014 the NMD conducted a research program named Northern Worlds that encompassed more than twenty-five interdisciplinary projects on various Arctic research topics. One project, Skin Clothing from the North, developed systematic, non-destructive methods to facilitate research on skin garments of Indigenous circumpolar peoples, which are now housed at the NMD

(Schmidt 2014). The new documentation has been entered into a database called SkinBase and provides “hands-on” information by enabling users to examine all parts in detail, without handling the physical object, via high-resolution photos of the skin clothing. The fragile skin objects are thus spared the risk of damage (Ibid.: 290) and can be studied over and over again by researchers, the public, and people of the communities from where the garments originated.

On October 4, 2014 the NMD, in conjunction with the National Museum and Archives of Greenland (Nunatta Katersugaasivia Allagaateqarfialu [NKA]) and the Museum of Cultural History in Oslo, launched the website Skin Clothing Online to make the entire NMD collection of skin clothing accessible online (<http://skinddragter.natmus.dk/>). The content—photos, measurements, material identification, maps, patterns, and so on—is taken from documentation in the database SkinBase. From 2014 to 2017 the website was visited by approximately 9,300 unique users, at first mostly from Europe and North America, but lately also from Russia and China.

## Background

The systematics of SkinBase and Skin Clothing Online are primarily inspired by the work of the Danish archaeologist and cultural geographer Aage Gudmund Hatt (1884–1960). His dissertation, *Arktiske Skinddragter i Eurasien og Amerika. En etnografisk Studie* (1914), was translated into English in 1969 as *Arctic Skin Clothing in Eurasia and America: An Ethnographic Study*. Hatt centred his research on the works of the Danish geographer Hans Peter Steensby’s (1875–1920) *Om Eskimokulturens Oprindelse (On the Origin of the Eskimo Culture, 1904)*, in which Steensby located the origins of Paleo-Eskimo culture in the regions west of Hudson Bay, and *Contributions to the Ethnology and Anthropology of the Polar Eskimos* (1910), where Steensby, after his journey to Greenland, explained how Inuit migrated from the Canadian Arctic to northern Greenland. In addition, Hatt based his archival studies on the works of the founder of modern anthropology, the German American anthropologist Franz Boas (1858–1942). Two of his works, *The Central Eskimo* (1888) and *The Eskimo of Baffin Land and Hudson Bay* (1901–1907), describe the Inuit from Canada’s central and eastern Arctic, and are illustrated with hand drawings. A few other late nineteenth- and early twentieth-century researchers were of key interest to Hatt. He was inspired by John Murdoch (1852–1925), whose book *Ethnological Results of the Point Barrow Expedition* (1892) was based on fieldwork in northwest Alaska. This publication is richly illustrated with elaborate drawings of clothing and meticulously detailed patterns. Also important were the results of the Jesup North Pacific Expedition (1897–1902) to Siberia, Alaska, and the northwest coast of Canada. The Russian ethnographer Waldemar Bogoras (1865–1938), in his book *The Chukchee* (1909), dealt with the Chukchi in northeastern Siberia, and the Russian ethnographer Waldemar Jochelson (1855–1937) wrote

*The Koryak* (1908) about the people living in the coastlands of the Bering Sea in the Russian Far East. His book was also illustrated with some sketches and patterns of clothing.

Hatt argued that two distinct cultural groups inhabited the Arctic regions. One group, the Inuit, migrated to North America and Greenland from Siberia, whereas another group populated Siberia and the Saami areas. Hatt based his theory on a comprehensive comparative study of Arctic skin clothing from museum collections across northern Europe. He found two distinct clothing designs, where the unique design of parkas, trousers, and footwear indicated the range of Inuit migrations (Hatt 1914: 220–240; Hatt and Taylor 1969: 100–110). Hatt's theory was later widely questioned. One critic was the Danish anthropologist and member of the Fifth Thule Expedition, Kaj Birket-Smith (1893–1977), who, after studying these items, suggested a different migration route of the Inuit (Birket-Smith 1929).

Although Hatt's theory has lost some validity, his dissertation has an importance that cannot be underestimated. For example, it inspired the Fifth Thule Expedition, whose aim was to “attack the great primary problem of the origin of the Eskimo” (Rasmussen 1927: ix). Hatt's studies of Arctic skin clothing were groundbreaking in their meticulousness and scope. He collected his empirical data from four museums across Europe: the NMD; the Museum of Cultural History in Oslo; the National Museum of Finland (Kansallismuseo); and Ку́сткаме́ра (Kunstkamera) in Saint Petersburg (Hatt 1914: foreword; no reference in the English version). He thereby created the first overview and documentation of the circumpolar peoples by making precise drawings of their skin clothing. In fact, the clothing and patterns were drawn by his wife, the Danish artist Emilie Demant Hatt.

More than one hundred years later, no one has attempted to follow in Hatt's footsteps by undertaking a cross-cultural study of circumpolar clothing, probably because anthropology has moved away from generalizations. Instead, a number of special studies have focused on clothing from various Inuit communities, as well as on Saami and Siberian peoples. A few recent studies on Inuit clothing, which focus on tradition and design, were important for the preparatory work for the database: Cunera Buijs's (2004) dissertation, *Furs and Fabrics: Transformations, Clothing and Identity in East Greenland*, gives a comprehensive survey up to the twenty-first century of the use of traditional clothing in East Greenland, and the clothing is illustrated with hand-drawn patterns and photos of people in traditional clothing. Betty Kobayashi Issenman's (1997) *Sinews of Survival: The Living Legacy of Inuit Clothing* gives detailed information on Inuit clothing, including spiritual and cultural dimensions. Informative pattern drawings and sewing instructions, as well as photos of people in traditional clothing, are presented from various Inuit communities in Canada. Jill E. Oakes and Roderick R. Riewe's (1998) *Spirit of Siberia: Traditional Native Life, Clothing, and Footwear* provide a survey of Siberian clothing,

including photos and drawings. On the subject of Saami clothing traditions, Katarina Ågren published “*Samisk dräktskick i Västerbotten*” in 1970, which provides detailed information on this subject from a historical perspective. This paper is richly illustrated with old and recent photos, as well as instructive hand drawings of clothing designs. These works are illustrated with photos, drawings, and patterns, thereby showing any skilled seamstress how to make and sew parkas, trousers, or footwear.

A circumpolar clothing study such as Hatt’s would be difficult and time-consuming to do today because the number of skin clothing collections has grown considerably since his time, as has the size of these collections. For instance, the NMD’s collection of skin clothing from Inuit cultures is currently larger than the four museum collections that Hatt consulted for his dissertation.

A solution has been to create a digital platform: Skin Clothing Online. Open access enables museums to upload information and images from their circumpolar skin collections, thus creating a shared digital catalogue on the internet. Both laypeople and scholars can now conduct comparative studies on a much larger scale than before. Furthermore, the website (and database) functions as a digital archive for storage and preservation of important archaeological, anthropological, and historical information. As mentioned above, it also protects the items, since scholars no longer need to touch and handle the fragile skin clothing.

In contrast to this open-access policy, organizations like such as Canadian Great Lakes Research Alliance for the Study of Aboriginal Arts and Cultures (GRASAC) restrict online access to their digital materials, in keeping with policy guidelines they have developed. As explained on the organization’s website, GRASAC began as a question raised by three researchers in 2004: “Would it be possible to use information technology to digitally reunite Great Lakes heritage, which is currently scattered across museums and archives in North America and Europe, with Aboriginal community knowledge, memory and perspectives?” So far, access to digitized materials is still controlled and limited to researchers, and especially to Indigenous community members, due to issues of sacredness and copyright laws. The website stresses that “GRASAC was founded upon the principle of reciprocity. Members not only use the site for their own research, but are expected to contribute their knowledge to it.”

## **SkinBase**

SkinBase draws upon three sources of information. General information—such as provenance of item, accession year, expedition or donor, and the culture code from *Outline of World Cultures* (Murdoch 1963), which classifies museum objects by cultural affiliation—is drawn from the NMD’s central objects database (GENREG). High-resolution photos of the skin items are provided by a photo database (Cumulus). Last, but not least, SkinBase provides additional information

in the form of detailed descriptions. The development of SkinBase has been previously described (see Schmidt 2011, 2012, 2014).

To create SkinBase, taxonomies or glossaries were prepared with the aim of promoting better and more consistent documentation; consequently, the scope for free text in the entry fields was limited. The function of the glossaries is described below. Besides Hatt's work, the reports from the Fifth Thule Expedition, published from 1927 to 1952, were important to development of the glossaries. The literature also inspired development of a new method for pattern documentation, described below. The Fifth Thule Expedition reports documented and illustrated skin clothing from some of the larger Indigenous groups of the North American Arctic (Mathiassen 1928; Birket-Smith 1929, 1945). Other regional studies were invaluable for identifying and defining characteristics such as item name, clothing element, skin material, and pattern design (Balicki 1970; Boas [1888] 1964, 1901; Chaussonnet 1988; Oakes 1991; Pharand 2012). General studies of Inuit clothing (Issenman 1997) and footwear (Oakes and Riewe 1996) were keys to choosing uniform names for items of clothing, skin material, sewing methods, and pattern designs, mostly from Canadian and Alaskan Native groups. For Greenlandic skin clothing technology, the terms and patterns were identified by various sources (Bahnsen 1997; Birket-Smith 1924; Kapel 2005; Kleinschmidt and Petersen 2012). For Siberian and Saami skin clothing, fewer relevant sources were available (Hatt 1914; Hatt and Taylor 1969; Ågren 1970; Fitzhugh and Crowell 1988; Oakes and Riewe 1998). More archival research will be needed in the future.

SkinBase uses a network of twenty hierarchically interconnected glossaries. The glossaries include item name, gender, measurement, clothing element, skin material, animal species, tanning methods, sewing material, sewing methods, and so on. The glossary hierarchies make registration easy and fast, while keeping the information consistent. In addition, the database structure makes it easier to train people who wish to enter new records into the database, even at a long distance. On the other hand, the hierarchy provides the database with a rigid structure, and the initial choice of item name is thus decisive when a new record is being entered (Figure 1). One must, at the outset, very carefully choose the proper item name; later adjustment is possible, though somewhat laborious. To help people make this key initial choice, the glossary of item names is currently limited to thirty-four terms. As of 2018, the glossaries in the database are available in three languages: English, Danish, and Greenlandic. We hope to extend the glossaries to include East and North Greenlandic dialects, Inuktitut, Yupik, Saami languages, and Siberian languages, as well as Norse, Swedish, Finnish, Russian, French, and German.

As mentioned above, SkinBase allows limited free text but this possibility has been rarely used so far. The connected glossaries seem to meet the present need for description. By means of a report server, a number of queries and categorizations can be carried out.

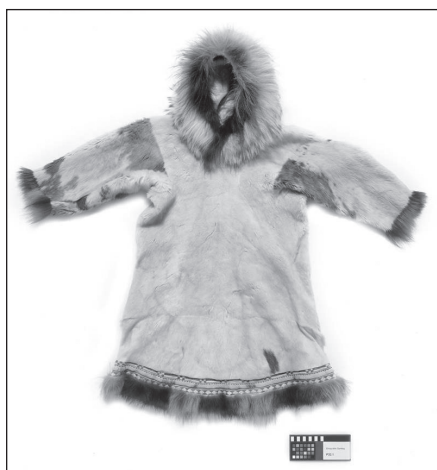




**Figure 2.** Photographing skin clothing in a horizontal position. Photo credit: Roberto Fortuna, National Museum of Denmark.



**Figure 3.** Preparing for a surround photo of mounted suits of skin clothing. Photo credit: Roberto Fortuna, National Museum of Denmark.



**Figure 4.** Horizontal photo (available on the website) of woman's parka collected in Alaska in 1924 on the Fifth Thule Expedition. Made from caribou skin, possibly a reindeer hide from the Chukchi of Siberia. Edged with wolverine skin. Walrus design not visible. Inventory number P32.1. Photo credit: Roberto Fortuna, National Museum of Denmark.



**Figure 5.** Vertical photo (available on the website) of the same parka, mounted on a mannequin. Walrus design with pointed hood roots now visible. Photo credit: Roberto Fortuna, National Museum of Denmark.

All items were measured according to a specially prepared manual, and the measurements were entered into the database. All clothing elements belonging to the garment were then be identified. For a parka, for example, this implied front, back, hood, sleeve, and edgings, including hood edging, sleeve edging, and lower edging. Then, precise information on the clothing elements—materials, animal species, tanning, hair direction, decoration, stitches, and so on—was recorded. Text could be freely added to note where samples—for DNA tests, for example—were taken. Moreover, it was possible to write a prose text, usable in a catalogue or as exhibition text, as well as to make references to literature where the garment was mentioned. As mentioned above, pattern sketches of clothing items (parka, trousers, boots etc.) have been published in many works (including Hatt 1914; Birket-Smith 1924, 1929; Buijs 2004; Hatt and Taylor 1969; Oakes and Riewe 1996; Issenman 1997; Kleinschmidt and Petersen 2012; Pharand 2012). The patterns, obviously based on tape measurements of the clothing, were used to compare designs from various Indigenous groups. Skin Clothing from the North required developing an automated technique that could more accurately measure the patterns without damaging the often fragile skin clothing. In conjunction with the Laboratory of Geoinformatics at Aalborg University, a new benign technique was developed to create a three-dimensional model and the corresponding two-dimensional pattern for items of skin clothing (Jensen, Schmidt, and Petersen 2012). The new method also made it possible to calculate the total amount of skin used for each clothing item. A selection of 107 items of clothing for men and women was documented in this way, and it was possible to measure total skin usage for a total of twenty-two Inuit suits (Schmidt 2014: 283–286).

## Website

In October 2014 the NMD launched the website Online Collections (<http://samlinger.natmus.dk/>),<sup>2</sup> together with Skin Clothing Online. It thus became possible to download, for free, a very large proportion of the 750,000 images that the Digital National Museum made available to the program. The NMD wished to share the large photo collection in an open source environment.

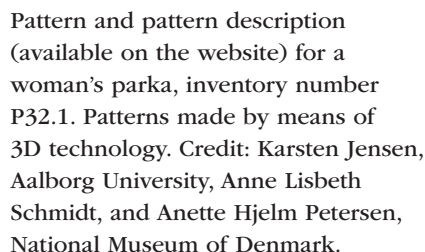
With regards to the website Skin Clothing Online, the NMD and later also the NKA chose Creative Commons license BY-SA for those photos and images that were under museum copyright.<sup>3</sup> The photos can therefore be shared on Facebook and used for PowerPoint presentations or commercial projects, as long as the names of the photographer and the museum are indicated.

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2. Although the website is in Danish, it is connected to Google Translate.

3. See Creative Commons, CC BY-SA 2.5 DK, <https://creativecommons.org/licenses/by-sa/2.5/dk/deed.en>.

200 | Anne Lisbeth Schmidt

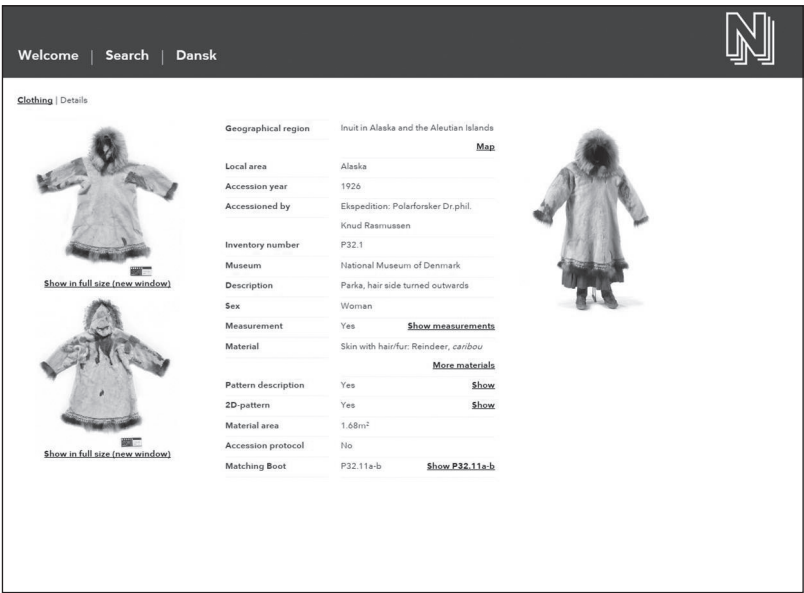


**Figure 6b.**

transformed, or built upon, the same license as the original still applies and governs how the altered material will be distributed.<sup>4</sup> Access to the photos and patterns is thus free to anybody, without distinction. The NMD and the NKA's copyright rules are listed on the website, and the user has the responsibility of ensuring strict compliance with the rules.

The copyright regulations are included in both licenses to ensure respect for Indigenous communities, particularly communities where ownership of Inuit nonmaterial and material culture is an ongoing concern. This is the case across the Canadian Arctic where, since the 1980s the Pauktuutit Inuit Women of Canada has been especially concerned about the policy on commercial access to Inuit clothing design.

Furthermore, the website Skin Clothing Online, besides photos and patterns (Figure 7), provides measurements, detailed information on materials, maps, and, original accession data. Currently, the website languages are English and Danish. A query function can be used to search for information on the basis of item name, gender, geographical region, material, and 3D documentation.



**Figure 7.** Woman's parka, P32.1, presented on Skin Clothing Online December 2016. Screen shot.

4. See Creative Commons, CC BY-NC-SA 2.5 DK, <https://creativecommons.org/licenses/by-nc-sa/2.5/dk/deed.en>.

## Future prospects

It is well known that in the 1980s and 1990s more than 35,000 items were repatriated from the NMD in Copenhagen to the NKA in Nuuk (Pentz 2004). Since then, and on the basis of a signed agreement, the two national museums have cooperated continuously and enthusiastically on many projects and partnerships. In autumn 2016 the NKA commissioned the NMD to photograph selected skin clothing at the museum in Nuuk for the SkinBase project. There were eighty items of clothing, including archaeological garments from the mummies at Qilakitsoq dating from circa 1475 AD, as well as historical and repatriated items from the NMD and contemporary modern Greenlandic designs. These items were photographed horizontally. In addition, twenty surround photos of mounted suits of clothing were produced during one week in 2016 (Figure 8). During the stay, a museum curator was trained to document the items in SkinBase, which was made accessible by connecting a Virtual Private Connection (VPN) to the NMD server and database. The NKA has likewise chosen Creative Commons license BY-SA for their photos. At present, no NKA clothing patterns have been measured by the new 3D method.



**Figure 8.** In autumn 2016 a number of skin clothing items belonging to Nunatta Katersugaasivia Allagaateqarfialu, Greenland National Museum, were documented in Nuuk. Photo credit: Roberto Fortuna, National Museum of Denmark.

The Greenlandic collection was made accessible at Skin Clothing Online on August 25, 2017. Thus, a milestone was reached, and a virtual, reciprocal repatriation was initiated between the two national museums, which now share their unique clothing collections on a common platform. The prospect of adding the NKA's remaining clothing, about nine hundred items, is another goal for the website. With clothing from the Arctic peoples of Greenland, North America, Siberia, and the Saami homeland, the Polar Museum in Cambridge will be the next museum to contribute to the website. The collection includes clothing that has Inuit- or Saami-inspired designs and that was used on early expeditions to Antarctica. In 2019, the Moesgaard Museum in Aarhus will add skin clothing from Siberia, collected from 1991 to 2007, to Skin Clothing Online.

It is our common aim to encourage many other museums to enrich the database with information on Arctic clothing items in their collections. This sharing is easily done by means of a VPN. The NMD currently offers partners free hosting of their data. The recent collaborative work with NKA has pinpointed further room for improvement of the database and the website, including the translation of glossaries into Indigenous languages to achieve one of the website's primary aims: using open access to make the Arctic's rich cultural heritage available to as many cultural and scientific organizations as possible. By sharing information from Indigenous people on these items, we can greatly increase the value of the database. In fact, future development of the database depends on dialogue not only with museums and other institutions but also with Indigenous seamstresses, craftspeople, and other specialists from northern communities.

## References

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ÅGREN, Katarina

1970 "Samisk dräktskick i Västerbotten", *Västerbotten*, 3: 131-198.

BAHNSON, Anne

1997 "Ancient Skin Clothing passing through Copenhagen". In R. Gilberg and H.C. Gulløv (ed.), *Fifty Years of Arctic Research: Anthropological Studies from Greenland to Siberia*, p. 47-56. Copenhagen, The National Museum of Denmark.

BALICKI, Alex

1970 *The Netsilik Eskimo*. New York, The American Museum of Natural History.

BOAS, Franz

1964 [1888] *The Central Eskimo*. Originally published as part of the Sixth annual report of the Bureau of Ethnology, Washington, Smithsonian Institute. Washington, University of Nebraska Press.

1901 "The Eskimo of Baffin Land and Hudson Bay, from Notes Collected by Captaine George Comer, Captaine James S. Mutch and Reverend. E.J. Peck", *Bulletin of the American Museum of Natural History* 15, Part 1. New York, American Museum of Natural History.

BOGORAS, Vladimir

1909 *The Chukchee. Material Culture*. Leiden, E.J. Brill Ltd.

BIRKET-SMITH, Kaj

1924 "Ethnography of the Egedesminde District: With Aspects of the General Culture of West Greenland, Copenhagen", *Meddelelser om Grønland*, 66: 1-484.

1929 *The Caribou Eskimos. Report of the Fifth Thule Expedition 1921-24. Volume 5*. Copenhagen, Gyldendal.

1945 *Ethnographical Collections from the Northwest Passage, Report of the Fifth Thule Expedition 1921-24. Volume 6*. Copenhagen, Gyldendal.

BUIJS, Cunera

2004 *Furs and Fabrics: Transformations, Clothing and Identity in East Greenland*. Mededelingen van het Rijksmuseum voor Volkenkunde, Leiden.

CHAUSSENET, V.

1988 "Needles and Animals: Women's Magic". In William W. Fitzhugh and Aron Crowell (ed.), *Crossroads of Continents: Cultures of Siberia and Alaska*, p. 209-226. Washington, Smithsonian Institution Press.

FITZHUGH, William W., and Aaron CROWELL (ed.)

1988 *Crossroads of Continents: Cultures of Siberia and Alaska*. Washington, Smithsonian Institution Press.

HATT, Gudmund

1914 *Arktiske Skinddragter i Eurasien og Amerika. En etnografisk Studie*. Copenhagen, J.H. Schultz Forlagsboghandel.

1969 "Arctic skin clothing in Eurasia and America: An ethnographic study" (translated by K. Taylor), *Arctic Anthropology*, 5 (2): 3-132.

ISSENMAN, Betty Kobayashi

1997 *Sinews of Survival: The Living Legacy of Inuit Clothing*. Vancouver, University of British Columbia Press.

JENSEN, Karsten, A. L. SCHMIDT, and A. H. PETERSEN

2012 "Analysis of Traditional Historical Clothing: Automated Production of a Two-Dimensional Pattern", *Archaeometry*, 55 (2): 974-992.

JOCHELSON, Waldemar

1908 *The Koryak: The Jesup North Pacific Expedition*. Leiden, E.J. Brill.

KAPEL, Finn O. Otto Fabricius

2005 *Otto Fabricius and the Seals of Greenland*. Meddelelser om Grønland, Bioscience.

KLEINSCHMIDT, G., and M. PETERSEN

2012 *Kalaallisuuliorneq - arnanut kalaallisuulionermik ilitsersuut - Nationaldragten*. Vejledning i fremstilling af kvindens nationaldragt, Nuuk, Forlaget Atuagkat.

MATHIASSEN, Therkel

1928 *Material Culture of the Iglulik Eskimos. Report of the Fifth Thule Expedition 1921-24. Volume 6*. Copenhagen, Gyldendal.

MURDOCH, G. Peter

1963 *Outline of World Cultures*, New Haven, CT, Human Relations Area Files.

MURDOCH, John

1892 *Ethnological results of the Point Barrow expedition, Ninth Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution, 1887–1888*. Government Printing Office, Washington.

OAKES, Jill E.

1991 *Copper and Caribou Skin Clothing Production*. Hull, Canadian Museum of Civilization.

OAKES, Jill E., and Roderick R. RIEWE

1996 *Our Boots: An Inuit Women's Art*. Toronto, Thames and Hudson.

1998 *Spirit of Siberia: Traditional Native Life, Clothing, and Footwear*. Vancouver, Douglas and McIntyre.

PENTZ, Peter

2004 "The Policy of Returning Cultural Objects: The Danish Perspective". In P. Pentz (ed.), *Utimut – Return. The Return of More than 35.000 Cultural Objects to Greenland*, National Museum of Denmark, Greenland National Museum and Archives, and UNESCO, p. 17-20. Gylling, Narayana Press.

PHARAND, Sylvie

2012 *Caribou Skin Clothing of the Igloolik Inuit*. Iqaluit, Inhabit Media.

RASMUSSEN, Knud

1927 *Across Arctic America: Narrative of the Fifth Thule Expedition*. New York, G.P. Putnam's Sons.

SCHMIDT, A. L.

2011 "Skinddragter fra Nord". In Hans Christian Gulløv, Caroline Paulsen and Birgit Rønne (ed.), *Nordlige Verdener – ændringer og udfordringer. Rapport fra workshop 1 på Nationalmuseet 29. September 2010*, p. 114-118. Copenhagen, The National Museum of Denmark.

2012 "Skin Clothing from the North". In Hans Christian Gulløv, Peter Andreas Toft and Caroline Polke Hansgaard (ed.), *Challenges and Solutions, Northern Worlds – Report from Workshop 2 at the National Museum, 1 November 2011*, p. 205-208. Copenhagen, The National Museum of Denmark.

2014 "Skin Clothing from the North: New Insights into the Collections of the National Museum". In Hans Christian Gulløv (ed.), *Northern Worlds: Landscapes, Interactions and Dynamic. Research at the National Museum of Denmark. Proceedings of the Northern Worlds Conference 28–30 November 2012*, p. 273-292. Copenhagen, The National Museum of Denmark.

STEENSBY, Hans Peder

1904 *Om Eskimokulturens Oprindelse: En etnografisk og antropogeografisk Studie*. Copenhagen, Salmonsens Boghandel.

1910 "Contributions to the Ethnology and Anthropogeography of the Polar Eskimos, Copenhagen", *Meddelelser om Grønland*, 34 (7): 253-406.