
MATERIAL MATTERS

The On-Line Newsletter of the Smithsonian Institution's Material Culture Forum

www.si.edu/publications/

Issue No. 56

May 2008

Fall Forum: Dress as Identity

November 1, 2007

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*Guest Editor, Dress as Identity section of Material Matters
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This year the Material Culture Forum's fall meeting was held – fittingly – the day after Halloween, a holiday during which we tend to think of personal dress and identity in more unusual ways. On that day, we dress to scare, mock, and define ourselves in ways that are beyond the societal norms of the everyday. How we identify ourselves within (or stretching) those norms was the topic of the fall Material Culture Forum.

Personal identity can be seen through the materials and alterations we make or add to our bodies including clothing, hair styles, jewelry and accessories such as tattoos, piercings, and make-up. We dress to reflect personal identity, to fit in and be accepted, to stand out in rebellion. In essence, we establish our personality visually for ourselves and others.

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THIS ISSUE OF *MATERIAL MATTERS* APPEARS IN TWO PARTS:

- ❖ The first half (pages 1 through 16) covers the Fall Forum, “Dress as Identity,” held at the National Museum of the American Indian.
- ❖ The second half, which begins on page 17, covers the Winter Forum, “The Lost Material World of James Smithson,” held at the Smithsonian Institution Castle.

For a note from Steering Committee Chairperson Stephanie Hornbeck – and for plans for the next Quarterly Meeting on May 14, 2008 – see pages 29-30.

Winter Forum: The Lost World of James Smithson

January 30, 2008

Pamela Henson

*Guest Editor, James Smithson section of Material Matters
Director, Institutional History Division, Smithsonian Institution
Archives*

Biographers revel in paper while studying their subjects – they look to diaries, letters, financial documents, birth, death and marriage certificates, among others. They do usually broaden their gaze to study photographs and other images – looking for character in a face, social status in a living room, family dynamics in the snapshot of a picnic, work relationships in the group photo. But when all those documents are compiled, biographers often have an embarrassment of riches with which to write their biography, and rarely look at material culture in-depth. If those documents don't exist, biographers usually move on to another subject.

The Castle fire of 1865 took those resources away from potential biographers of James Smithson, but he remained an intriguing topic. Why would a little-known English chemist and mineralogist bequeath his fortune to a country he had never visited? Who was he? How did he live and think? What kind of research did he do? What was the impact of his research? Who did he know and what did they think of him? What did he mean by “the increase and diffusion of knowledge among men”? When Heather Ewing started the Smithson biography – undaunted by a lack of resources – she turned to non-traditional sources for additional information and turned for assistance to colleagues expert in material culture analysis. At the Smithsonian alone, she consulted experts in rare books, portraiture, forensic anthropology, personal memorabilia, scientific instruments, meteoritics, mineral sciences, and chemistry.

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Aside from personal choice, dress is influenced by numerous factors, including social and cultural environments, era and location.

The speakers at this fall's forum shared a variety of ways people communicate identity through dress. The National Museum of American Indian hosted the event, which began with Curator Emil Her Many Horses leading a tour through "Identity by Design: Tradition, Change and Celebration in Native Women's Dresses," which continues on display to August 3, 2008. Emil kicked off the afternoon presentations with a lecture on the topic of native women's dress. He was followed by Carrie Beachamp of the National Museum of Natural History who presented "A Legacy of Style: Clothing Collections as Cultural Resource." Philippa Rappoport from the Smithsonian Center for Education and Museum Studies shared insights into connections between mythology and hairstyles in "If it Dries Out, it's No Good: East Slavic Bride, Hair, and Mermaid Beliefs." Susan Brown of the Cooper-Hewitt Museum ended the talks with an interesting and amusing look at interactive fabrics in her talk, "Self-Expression and Social Interaction in Electronic Fashions."

Any discussion of the relationship between dress and identity in such a brief space can only scratch the surface of the topic. Our sparkling lecturers presented a number of ways to investigate this correlation. I would like to take the opportunity to add one which was not discussed, the topic of uniform dress. Within the National Postal Museum we have a variety of clothing and accessory pieces that were used to identify and aid postal employees in completing their duties – from the daily rounds through snow and sleet to working the mail out of public sight.

A recent addition to the museum's exhibits is a hazardous

materials suit, clothing used by U.S. postal inspectors while investigating possible biological hazards in the mail. The suit is on loan to the museum from the U.S. Postal Inspection Service. While discussing the loan we learned of an unexpected aspect of identity and dress. Postal inspectors agreed readily to lend the item, but insisted on being present when we dressed the mannequin, telling us that different policing entities have their own way of securing hazmat suits, and only a postal inspector could "dress" the mannequin in correct postal inspector detail. We never imagined that the style of use of duct tape on connecting suit pieces could have such meaning.

At the other end of the spectrum from the hazardous material suit are the iconic clothing pieces and accessories that are commonly recognized as postal service uniforms. The nation's first city letter carriers were not required to wear uniforms when they first began working in 1863. Within a decade, uniforms were becoming mandatory across the country for carriers. It was not long before the blue-grey jacket and pants of early carriers became easily recognized uniforms of nation's primary communication network. Carriers' uniforms changed styles over the years, but a major color change did not come until the Cabinet-level Post Office Department was transformed in 1971 to the U.S. Postal Service, an independently operating establishment of the executive branch. Along with vehicles and mailboxes, letter carrier uniforms underwent visual transformations. Blue-grey uniforms were replaced by bright "American flag" blue jackets and pants. Blue or red jacket patches displaying the "running pony" logo of the old Post Office Department were replaced with white patches presenting the service's new eagle logo. Few Americans may have understood the complexity of the 1971 postal service administrative transformation, but the visual clues of uniform color and patch iconography demonstrated that a dramatic change had just occurred in the service. §



Participants in the "Dress as Identity" Fall Forum:

From left to right:

- Emil Her Many Horses, NMAI;
- Philippa Rappoport, SCEMS;
- Nancy Pope, NPM (forum organizer);
- Carrie Beauchamp, NMNH; and
- Susan Brown, Cooper-Hewitt.

Identity by Design: Tradition, Change, and Celebration in Native Women's Dresses

Emil Her Many Horses

Curator, National Museum of the American Indian

For generations, Native women from the Plains, Plateau, and Great Basin regions of the United States and Canada have designed dresses renowned for their beauty. But each dress has the ability to tell its own story. They speak of an individual designer's artistic vision; a family's status; tribal values; and social and cultural change.

The stories of the dresses in this exhibition are revealed through the words, insights, and memories of contemporary Native women designers. For these artists, dresses are more than simple articles of clothing. They are evidence of a proud and unbroken tradition, links to the generations of women who have gone before them, and bridges to the future.

Partners

In December 2005, the National Museum of the American Indian invited six celebrated Native women artists whose many skills include designing dresses to the museum to discuss the dress collection. The wisdom and experiences they shared help to explain how the past influences the present and describe what is being done to assure that future generations reinforce cultural identity through making and wearing dresses. Additional dress designers and dancers also generously shared their knowledge.

19th-Century Style

For centuries, Native women have provided for their families by designing clothing for themselves and their relatives. Most of the dresses in this exhibition were created for special occasions, and each one is unique.

In the early 19th century, the physical environment and an influx of new materials through trade influenced Native women's dress styles. Using game hunted by men—mostly deer, elk, and bighorn sheep—women prepared, cut, and decorated hides with natural and man-made materials, many of which came from Europe.

Three popular styles were side-fold, two-hide, and three-hide dresses. By the 1830s, most women in the Northern Plains,

Plateau, and Great Basin preferred two-hide dresses because the full skirts were more practical for their mobile lifestyle on horseback. On the Southern Plains, women wore three-hide dresses, which, in addition to full skirts, had separate capes. No matter which style prevailed, dresses reflected a woman's identity—her tribal and family traditions and individual artistic skill and expression.

Side-Fold Dress

Made of one or two large pieces of hide, the side-fold dress has only one seam and a fold that forms a flap from the wearer's neck to waist. It was adapted from styles worn when tribes on the Northern and Central Plains lived farther east and led a more agricultural existence. By the mid-1800s, the side-fold dress had fallen out of fashion.

Two-Hide Dress

The two-hide dress consists of two large hides of similar color, shape, and size joined along the shoulders and below the arms. This style has a yoke—a shaped piece that covers the chest, shoulders, and upper back—that is formed when the rear legs of the animals are folded over toward the wearer's chest and back. The skirt is formed from the forelegs, producing a fuller lower half. Originally, the tails were left intact and incorporated into the design of the dress.

From the 1870s on, yokes completely covered in beadwork became a trademark of dresses made by Sioux women. To get a larger decorative surface, women used three hides, but still followed a two-hide pattern.

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Three-Hide Dress

A three-hide dress is a skirt made from two hides and a cape-like top made from a third hide that is sewn to or worn over the skirt. Originally, the cape was not sewn to the skirt, and it was removed when temperatures became uncomfortably hot.

We try to use everything in its natural form. When

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you folded a deerhide over to make the top for a three-hide dress, two legs would hang on each side of the dress. They were kept as a marker to show that we still respected the animals that the hides came from. —Keri Jhane Myers (Comanche), 2005

Full Circle of Life

In the 19th century, much like today, Native women learned about their tribal and family traditions from female relatives. Artistic, spiritual, and historical knowledge was passed from one generation to the next through dress design.

Dresses created for young girls demonstrated a family's love and honor for them. They also impressed upon children the importance of artistic expression and the meaning of fashion. When girls reached adolescence, their participation in rites of passage—which required wearing special dresses—gave them confidence, self-respect, and a sense of belonging to the tribe.

As adults, women carefully clothed family members. In some tribes, such as the Cheyenne, Arapaho, and Sioux, gifted artists belonged to artistic societies that upheld aesthetic principles while encouraging creativity. Some women also made and wore dresses as part of their involvement in ceremonial dances and their supportive role in military societies that emphasized tribal values. In this way, women nurtured and strengthened the circle of life.

Indigenous Innovation

Native women have incorporated new materials into their lives for centuries. In the 19th century, extensive intertribal trade networks and European traders supplied women with a wide variety of highly prized materials from all over the globe. A woman's ability to obtain and use trade materials in the designing of dresses became a measure of social respectability for herself and her family.

Never-before-seen imports from Europe—such as cloth, glass beads, and silk ribbon—became regular features of women's dresses. Artists quickly appreciated the possibilities for artistic expression and adapted these materials to their dresses in inventive ways. Glass beads, for example, were stitched to dresses in patterns that followed the traditional use of porcupine quills.

In a short time—less than 50 years—women turned their innovations into a new art form. Beadwork developed as a way for women to identify tribal membership through

preferences for bead colors, techniques, and designs. It also added another dimension to the extraordinary artistic abilities of the designers.

Indian Cloth

The Gloucestershire region of England produced most of the woolen cloth for the Indian trade. Known as “saved-list,” “stroud,” or “Indian” cloth, it often came in dark blue or scarlet. The term “saved-list” refers to the cloth's undyed lists or edges.

At first, Native women used woolen cloth only sparingly on dresses. Later, with the increased availability of cloth, women made cloth dresses that followed the pattern of hide dresses. Even after less expensive dyes were developed around 1850, manufacturers continued to make these white-edged woolen cloths to meet the demand of Native women.

Shells and Beads

Cowrie and dentalium shells were valuable trade items to Native peoples. In 1850, one record states that 10 dentalium shells were equal to one buffalo robe. Europeans imported cowries some 9,000 miles on slave ships.

Dentalium shells were harvested by Native peoples on the Pacific Coast and later brought in from Europe.

Before European contact, Native peoples made beads from shell, bone, stone, and other natural materials. Most of the

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Crow elk-tooth dress with belt and leggings, ca. 1890 & 1900, Photo: National Museum of the American Indian (NMAI)

European glass beads introduced to tribes by French, English, Russian, and Spanish traders were made in Italy. The earliest European beads—which arrived in the early 1800s—were large “pony” beads that came in white, blue, red, and black.

Around 1840, a smaller bead, referred to as a seed bead, was introduced. Artists preferred seed beads because they came in more colors and their size inspired women to do more than just replicate the geometric designs of quillwork. Now, women could create flowers and other complicated motifs. As demand grew, more European countries began to produce an even greater variety of beads.

Forming Cultural Identity

Toward the middle of the 19th century, increasing encounters and conflicts with Euro-Americans motivated many Native peoples to express pride in their ways of life. Now that women had dozens of bead colors, sizes, and appearances to choose from, along with a multitude of other imported and local materials, dresses became a way to identify membership in a particular tribe.

Some tribal styles emerged in beadwork societies, which were based on earlier quillwork societies. These societies had a selective membership consisting of the most gifted artists in each community, and served as a forum in which to share new ideas, often inspired by dreams. The style—including patterns, materials, colors, designs, and techniques—endorsed by the society was adopted by most of the women in the tribe.

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Whether developed in societies or by small groups of women, tribal styles were passed from generation to generation, from master quill- and beadworkers to novice artists. Today, wearing a dress that reflects an historic tribal style is still a way for a woman to express solidarity with her people. But while each tribe has long had its own style, designers could and do share their personal beliefs, emotions, and experiences in their work.

Dancing in Beauty

The richness of a woman’s dress or its designs can carry her emotions and enhance a dance’s meaning. Nowhere is this more evident than in dresses created for military, religious, and social gatherings in the late 19th and early 20th centuries.

During this period, Native peoples experienced traumatic changes to their traditional lifestyle and the land and resources that had once sustained them.

Some dances honored and sought to protect this way of life. Victory dances allowed women—wearing dresses depicting men engaged in warfare or horse-capture—to recognize the sacrifices of warriors. The Ghost Dance of the late 1880s inspired dress designs that communicated opposition to desperate conditions.

Some dances reflected accommodation to changing circumstances. In the 1850s, Native peoples began to be confined to reservations and reserves in both the U.S. and Canada, and both governments banned ceremonies and dances except on patriotic or Christian holidays. These occasions became a focal point for many communities, generating an explosion of new and modified dress designs.

The Powwow World

Today Native people travel great distances to participate in dance competitions throughout Indian Country. Powwows are popular because they allow people to express pride in a particular tribal heritage and strengthen their Native identity. Many women welcome the opportunity to dress in their tribal styles; something they can rarely do in their modern lives.

Designing dresses for powwow dance competitions is an important way for women to reclaim and pass on the values and knowledge of their ancestors. Some historic dresses have been acquired by museums or private collectors; some have been lost to time and the elements; and some remain in families. To re-create these dresses, today’s artists seek advice from family and community members and research museum collections.

As in the past, women maintain artistic traditions while allowing personal experiences and new materials—such as sequins, rhinestones, and the latest types of beads—to influence their work. Renewed attention to this art form suggests that the ongoing evolution of Native women’s dresses will continue to impress and surprise us. §

A Legacy of Style: Clothing Collections as a Cultural Resource

Carrie Beauchamp

Deborah Hull-Walski

Felicia Pickering

National Museum of Natural History, Department of Anthropology

The Department of Anthropology's collections at the National Museum of Natural History (NMNH) encompass over 2.5 million specimens, most of them housed at the Museum Support Center in Suitland, Maryland. The collections span the globe from Asia, Africa, the Caribbean, Central America, Mexico, Oceania, and South America, with a particular strength in North America. They also span across time, from ancient to contemporary cultures. As an anthropology collection, the material remains of all aspects of human life are represented, from the ceremonial to the strictly utilitarian. Because people everywhere have always found ways to clothe and adorn their bodies, there is also a lot of clothing. We have jewelry from ancient Egypt and 2,000 year old textiles from the Nazca valley in Peru. Our more recent acquisitions include commemorative fabric fresh from the market in Dakar, and baseball caps asserting Kiowa and Choctaw tribal identity.

And why do we hold on to these things? Simply put, they embody traditions and knowledge that is useful to people. Each item is evidence of the technical knowledge of the maker—how the thread was spun, the cloth woven, the garment constructed. A collection of clothing can show the fashion sensibilities of a community and how these styles change or endure over time.

Museum collections give historical depth to a people's understanding of their own textile traditions.

This knowledge is uncovered and disseminated by a wide range of visitors to the collections. Scholars, curators, students, and independent researchers study objects and distribute their research to the public in exhibits, books,

articles, and websites. Teachers study techniques and iconography to pass along to their students. Native community groups visit the collection as part of repatriation consultations, for exhibit planning, or simply to find out what we have from their country or tribe. Artisans seek inspiration and knowledge for their own work, carrying the traditions on from the past, and reinterpreting them for contemporary life.

Through these various perspectives, museum collections give historical depth to a people's understanding of their own textile traditions. This knowledge can invigorate the practice of these traditions and transform fashion into a declaration of cultural identity. As Cindy Pennington, of the Alaska Native Heritage Center stated, "...clothing tells a story. It reminds us of who we are and provides a connection to our ancestors."

Maintaining Textile Traditions

An example of how people use the Museum's collections for the perpetuation of clothing traditions is illustrated in a visit made by members of the Warriors of AniKituhwa, a Cherokee dance group. Their performances and dance workshops have led to increased interest among Cherokee people of all ages in reviving 18th-century clothing. When John "Bullet" Standingdeer and John Grant, Jr. visited our collections, they studied Cherokee and other Southeast Indian objects, especially those related to dance. They also studied feather capes, an item of clothing described in historical documents of early European contact in the Southeast. Since no capes from the area are found in museum or personal collections, they looked at textiles from Spiro Mounds, an archaeological site in Oklahoma, as well as feather capes from other areas, in order to figure out how the capes in the Southeast might have been constructed.

Another example is the research on Coast Salish weavings conducted by Megan Jones and Rita Louis, of the Samish Indian Nation, as part of their National Museum of the American Indian Native Arts Program fellowship. Jones and Louis examined textiles and weaving tools at both the NMAI and NMNH to document traditional methods of Coast Salish textile weaving. They and other Salish weavers have been able to view the only known pelt of a woolly dog, a now extinct breed of dog whose hair was used, along with mountain goat wool, in traditional Salish weaving. The pelt is in the collections of the NMNH Division of Mammals. Jones and Louis will replicate at home the tools and

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techniques they saw at the Museum, perpetuating the Coast Salish weaving tradition.

Contemporary People / Traditional Style

Inspiration from older pieces can give a sense of cultural continuity and identity, even as it is adapted for contemporary use. For example, in 2006, Clarissa Hudson, a Tlingit artist with the NMAI Native Arts Program, came to view Northwest Coast/Chilkat weavings and button blanket robes. Hudson creates fabric art based on traditional Alaskan Native ceremonial regalia from Southeast Alaska. Her works range from traditional pieces for ceremonial use, to contemporary art pieces. She sought inspiration for her own work but she was also gathering ideas from NMNH and NMAI pieces to inspire her students. After comparing older pieces made with mountain goat wool, to more contemporary pieces made with merino wool, Hudson has been encouraging weavers to return to the use of mountain goat wool. She has also been giving lectures in communities across the Northwest Coast about her findings at the Museums.

Martha Berry's beadwork is inspired, as she says, "by the styles of the Southeastern Woodland Native American Indians... Her beadwork often illustrates the stories and lore of her Cherokee ancestors, allowing the observer to experience the power of their knowledge and the richness of their experience." Berry was also a NMAI Native Arts Program fellow and viewed collections at both facilities to seek "old ideas for new designs." She is working with others to revitalize the art of beadwork through teaching.

Leialoha Amina and her daughter Kananimaole Amina, of the Hawaiian Hula school Na Lei O Kaholokā, visited NMNH to study hula-related objects, featherwork, tapa, and lei niho palaoa necklaces. Hula is more than a dance; it is an embodiment of Hawaiian history and identity and of associations with the land and historic place names. Hula tells stories of Hawaii through movement, sung poetry, natural adornments and musical instruments. The clothing or costumes often has associations with the sung poetry and the time period in which it is situated. For example, the clothing worn for a hula about volcanoes would be red, orange, or deep gray like flowing lava. By practicing and teaching hula, these cultural associations and history are kept alive and passed down through the generations.

Kuna women, from the San Blas Islands in Panama, are well known for their colorful molas, brightly colored reverse

appliqué panels that are sewn into shirts. In 1994, a group of Kuna women visited the NMNH collections, which include a wide variety of molas, from early examples to more recent and tourist pieces. The women became quite animated while viewing the molas and providing commentary. As Mari Lyn Salvador has explained in detail in *The Art of Being Kuna*, the women have a precise and consistent system of ranking molas by quality. They considered technique, design clarity, colors, subject matter, and the amount of time it took to create the final product. In using consensus to judge this wide range of molas, they were also clarifying the boundaries of "good" and "traditional" mola making, an art form central to their identity as Kuna women.

Artists also seek inspiration from textile designs to incorporate in other art forms, such as jewelry, sculpture, or basketry. Fran Reed (adopted into Tsimshian Killer Whale Clan) was trained as a weaver but now creates baskets from fish skin. She gained inspiration for her work by viewing fish skin pieces of various types, including clothing and bags, in the NMNH collection. The more she investigates the background of fish skin work, she says, the more she appreciates their beauty.

Artists also seek inspiration from textile designs to incorporate in other art forms, such as jewelry, sculpture, or basketry.

According to Reed, "We are familiar with the beauty of Eskimo and Aleut gutwork in kamleikas [traditional waterproof parkas], but not so much with fish skin, because it has gone by the wayside. It was a material for the poor man's boots and mittens, but if you go to any museum that has an Arctic collection, it will have these absolutely gorgeous pieces in it." Reed reveals the natural beauty of the fish skin, once underappreciated in the more utilitarian museum pieces, in her contemporary art baskets.

Cross-Cultural Inspiration

In such a large collection, some cross-cultural comparison and inspiration is perhaps inevitable. For example, in 1999, a group of Ainu basket weavers and clothing makers visited the collections. They were interested in viewing Ainu textiles but also were interested in studying baskets from

Alaska, California and the Southwest. They were interested not only how the baskets were made, but also in the decorative styles. They noticed that Ainu baskets, which contemporary Ainu women use as purses or carrying cases, are very similar in style and technique to those found in our Arctic collections.

One of the most exciting parts of their visit was when one of the basket weavers discovered a basket in our collections that was identical to the one she was carrying. While her bag was recently made in traditional Ainu style, the basket in our collections was made by an Aleut weaver in the 19th century.

The ability to view many objects of a type, all in one place, gives visitors an opportunity to recognize the breadth and depth of a tradition through time. As visitors encounter the work of their ancestors' hands, many contemplate their own role as a link between past and future. Clarissa Hudson reports that during her visit to the Museums' collections, she wondered, "Who were these Chilkat weavers who came before me; what were their names? Will any of my daughters eventually continue this tradition? Some of these robes were woven over 200 years ago and in the last couple of generations, this art form was just about lost."

After her visit, she says, "I whole-heartedly encourage any Native American artist to visit the old works of art; to pay a visit and homage to our relatives in these 'storage containers.' Our relations do not want to be forgotten." In this case, material culture is seen not only as a symbol of identity,



*Wambli Hokesheila (Eagle Boy), 1991
by Don Tenoso (Hunkpapa Lakota), Photo: NMAI*

expressing it to the outside world, but as a living link between past and future – the embodiment of a culture or lineage.

Artist's Voice: Contemporary Pieces in the Museum

The examples given so far have assumed that the significance of museum objects as emblems (or embodiments) of identity is ascribed by the contemporary viewer, not necessarily the makers. Unfortunately, the artistic intentions of the makers are not generally known, and it is problematic to read identity politics into the past. However, the Museum also collects contemporary objects that are clearly intended by their makers to express cultural identity.

One example is "Wambli Hokesheila" or "Eagle Boy," a doll made by Don Tenoso (Hunkpapa Lakota), who was an Artist-in-Residence for the NMNH Native American Public Programs in 1991. The doll's costume is based on the artist's study of exhibition catalogs, museum collections, and his own experience as a pow wow dancer. It is a meticulous and faithful representation of "the traditional," down to the use of real eagle feathers.

However, many of the details reveal the artist's commentary on modern Native identity. For example, the gauntlets have a pair of images—one a traditional Indian warrior astride his horse, and the other a Native veteran astride his 1950s-era Harley, braids trailing behind in the wind. On the back are depictions of Lakota and American military honors, eagle feathers on one, a purple heart on the other. The juxtaposition of these images cleverly suggests both the continuity of Lakota men's role as soldiers, and the dual nature of their citizenship in both Lakota and U.S. society.

Other details on the doll are the artist's personal references, such as the use of his mother's hair, and his tiny Ray Ban sunglasses. The doll is at once traditional and modern, tribal and individual.

It will remain in the collections for future generations as one artist's commentary on Native American identity in the late 20th century.

Feedback from Visitors: A Cycle of Information

Just as our visitors gain information to carry home with them to inspire new designs, revitalize traditions, or resolve research questions, they also leave behind a great deal of

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information and ideas. As specialists in a certain culture or textile technique, our visitors can often correct or add to the information we have available in the catalog. They sometimes provide details on the interpretation of a design or how the object was used or worn. When possible, this information is kept for future researchers, adding to the intellectual value of the collection.

Consultations with Native artists and elders may help guide museum staff in determining how an object should be preserved or exhibited. Chuna MacIntyre and Vernon Chimegalrea recently viewed Central Yup'ik objects that are slated for an upcoming exhibit. They pointed out areas on parkas and boots that had become distorted from their original design, and pieces of masks that were no longer oriented in the correct direction.

Consultations with Native artists and elders may help guide museum staff in determining how an object should be preserved or exhibited.

Noting that the manner of display is crucial, MacIntyre and Chimegalrea focused on how objects would have been used. MacIntyre demonstrated how a particular hood would have been worn well over the forehead, almost covering the eyes, and should be displayed with its back facing the viewer, as opposed to a side view. This angle would replicate what the audience would have seen during a traditional Yup'ik dance.

Other discussions concerned the correct positioning of dance gloves and dance fans, and the revelation that what was originally thought to be a leather sheath for a knife was actually a thumb guard to be used while carving. These insights will give cultural depth to the exhibit, and inform future research in the collections for generations.

Miss Dai-Nippon (also known as Miss Japan or Miss Hideko Yamato) is a Friendship Doll that was a gift from the imperial household of Japan in 1927. She was the largest and most elaborate in a series of similar dolls that were commissioned by the schoolchildren of Japan and sent to all 50 states as gestures of friendship to American children. These dolls were the work of traditional dollmakers, dressed in complete and elaborate formal outfits. Some wear kimono featuring the crest of the city in which they originated.

The dolls were never “just toys,” but rather they were created

as emblems of cultural, national, and local pride. Eighty years later, as a museum piece, Miss Japan continues to serve in her original capacity as an ambassador of goodwill and understanding, but she also exhibits well-preserved examples of the finest in traditional Japanese clothing of the time period. When she recently went on exhibit at the Japanese American National Museum in California, a traditional dollmaker re-dressed her, adjusting the layers of clothing and re-tying the obi.

In contrast to most museum textiles, where each piece of clothing is stored separately and laid out flat to prevent creasing, the dollmaker ensured that Miss Japan would demonstrate the proper assemblage and layering of pieces into a completed outfit, as well as how such pieces are meant to look on the body. Thus, every detail of the doll, from the weave of the cloth to the drape of the sleeve, was carefully constructed to represent Japanese textile tradition and express cultural identity, and continues to do so today.

The Digital Museum

Like many museums, one of the current priorities of the NMNH is to digitize collections resources so that people who are unable to make the journey to Washington can access these resources online. Our ethnology and archaeology collections database is available to the public through our website. It includes most catalog data, and, when available, photographs of the objects. Digital resources can also facilitate collaborative projects such as online exhibits and research projects.

Of course, digital photos can never replace real museum objects. Details such as weave structures, and tactile information such as the weight of a fur coat, are simply not conveyed in digital form. More importantly, images and data do not convey a sense of “reality”, a physical link with people who came before us. We need museum collections to be what they have always been: material artifacts of the past, preserved for the future.

But we also need museum collections to be relevant and available. As we digitize more of the collections, and as the technology to use these media become more widespread, far flung audiences can use the collections for diverse purposes, including online exhibits, educational programming, classroom curricula, independent research, and artistic inspiration. Never before have museum collections been a more accessible cultural resource, and we are only beginning to see what these collections can do. §

If it Dries Out, It's No Good: East Slavic Bride, Hair, and Mermaid Beliefs

Philippa Rappoport

Community Outreach Manager, Smithsonian Center for Education and Museum Studies (SCEMS)

There is something instinctual about communicating social behavior and intentions through hair. I have spent summers in Russia during the 1980s and 90s with my hair pulled back demurely, trying to remain inconspicuous, the observer rather than the observed (which wasn't easy for an American). I noticed how, almost uniformly, older women, called *babushki*, kept their heads covered in kerchiefs, how younger women, particularly in cities, wore mini skirts and their hair loose; how relatively reserved women pulled their hair back; and how little girls wore hair ribbons larger than their heads. The ribbons on the little girls in particular seemed to me to suggest that something was going on here.

According to anthropologist Edmund Leach, in his article "Magical Hair" (1957), changes in hairdressing very commonly accompany the physical changes that correspond to stages in the social system. He says,

Even the most skeptical anthropologist must admit that head hair is rather frequently employed as a public symbol with an explicitly sexual significance...Marked changes in hairdressing very commonly accompany the physical changes in sexual status that occur at puberty and marriage, but the pattern of change varies.

Traditionally, young girls wore their hair either loose or in one braid on the back of the head. The single braid may have been adorned with ribbons, flowers, beads, or feathers. A girl's headdress did not completely cover her hair, and was usually open on top. The headdress could also be adorned with ribbons, pearls, etc. Traditional sources state that maiden-costumes functioned not only to show the age and status of a woman, but her sexual morality as well. In some areas when an unmarried girl lost her virginity, she was required to wear the married woman's headdress, and in some cases suffered the disgrace of having her hair cut off. As recently as 1998, one of my professors interviewed a Ukrainian woman who stated that if a woman is not a virgin, she must wear a married woman's headdress.

Married women, on the other hand, wore their hair in two braids which were then hidden in a headdress. Their headdress was covered with a white or red kerchief, which was often decorated with embroideries of birds and animals. Russian sources describe 11th- and 12th- century practices that permitted married women to show their hair only to their husbands, or which prohibited people from removing a woman's headdress, on penalty of a large fine, because such an act was considered an affront to a woman's honor. By the 19th and early 20th centuries, married women were supposed to keep their hair covered because uncovered hair was believed to bring unhappiness. Paintings (18th – 20th –century) from the Russian Museum in St. Petersburg and the Tretyakov in Moscow illustrate how ornate or not the head coverings could be.

Hair imagery in wedding rituals also connects hair to social and sexual status. Ethnographers state that the wedding rituals of the tenth through fifteenth centuries show the diminishing domestic and social status of women with the increasing influence of the Church. This is a large ritual complex, but I'll focus on acts and beliefs related to hair and head apparel. During the wedding ritual complex, hair is treated in two ways. It is controlled, through braiding and covering/concealing. It is also "sold" to the new husband. According to many 19th-century folklorists, all of these acts represent a type of submission.

The traditional wedding ritual complex begins with the securing of a match. Once the engagement is agreed upon, the first act done to the bride is the *zaporuki*, or covering. Other names for this act include *zaporuchivat'* (to cover lightly), *zakryvat'* (to cover in the sense of closing or locking) and *zaveshivat' nevestu* (to cover in the sense of curtaining off the bride). During the *zaporuki*, the groom, the matchmaker and the father of the bride pray together, light candles before the icon, hold hands and drink tea and wine to seal the agreement. The bride is covered with a kerchief by her father, and she begins to lament – something only done at weddings and funerals. In some areas, the kerchief covers only the bride's head; in other areas, it covers her entire body. This act signals the beginning of the wedding period for the bride, and from this moment on, she ceases to be a functioning member of the household. She is relieved of all her household duties, and instead spends her time preparing her dowry. Although customs vary by region, this usually sets off a period in which the bride stayed only with her girlfriends, save for an occasional visit by the groom.

In terms of hair, the next important time of the wedding complex is the final week, or weeks, before the wedding. The

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bride's hair is repeatedly washed and combed, sometimes greased with oil and mead, and braided (often with kopecks) by her girlfriends or brothers. Some areas marked the appearance of the bride before the table - the first time that the bride is shown publicly to the groom. During this encounter, the bride laments the loss of her *krasota* (beauty), and *volia* (will), which some sources say was a symbol of virginity. Often the bride asks for some light, saying she wants her beauty back. In response, someone turns down the head covering, and the bride leaves. She may also throw away her will (*volia*) in the form of flowers, and then ask for them back, only to despair that it is no longer her fate to wear them.

One of the more chilling aspects of the braiding is as a means of protection. Some ethnographers note a sequence in the ritual complex in which the bride requests that her friends unbraid and replait her hair, weaving the ribbons in tightly, so that her new mother-in-law will never be able to undo the braid. This motif appears often in wedding laments from northern Russia, with the image of metal knives or locks, which the friends must plait into the hair, to lock the braid. Sources suggest that the braid is directly symbolic of the girl's sexual organs, which she requests to be locked up, to protect her from the groom and his family. The bride's hair is also washed and rebraided during the *devishnik*, or bachelorette party, which occurs on the night before the wedding, and it may be braided on the morning of the wedding itself. This grooming often occurs while the bride is washing herself in the bathhouse (for the first time since the engagement), and is accompanied by more lamenting over the loss of her beauty. According to one description, the bride tells her girlfriends that she has hidden her beauty in inaccessible places such as the stove under the threshold, but that if they can find it, they can have it. She then gives them her hair ribbons. There is a sense that the bride is bequeathing her premarital will to her girlfriends through her hair ribbons, and also through her bath water. The girlfriends drink the water in which the bride has bathed, perhaps as a magical act, so that they too will marry.

The next part of the ceremony is extremely interesting for the way in which hair is used to articulate power and danger. The whole wedding party goes to the church. This segment is considered to be a dangerous time, because the bride is believed to be the most susceptible to sorcery – or perhaps it is those around her who are susceptible. Significantly, her hair is loose, and she is covered with the *pokryvalo*, a cloth which covers the bride's head and sometimes her whole body. In some areas the groom places this covering on the bride and

puts her in the cart to take her to the church, presumably in the belief that if the bride does not leave of her own power this time, she will be unable to leave on her own in the future.

There is a lot of regional variation, but most sources agree that no matter who removes the engagement covering – the groom, the matchmaker, or someone in the groom's family or party – and then rebraids her hair and covers the bride again with a bridal shawl or veil, the shared belief is that uncovering the bride and significantly her hair somewhere other than in the church was dangerous and could invite spoiling or sorcery.

One of the culminating events of the wedding ritual is the *okeruchivanie* (winding up, or wrapping around). Having said a ritual farewell to her braid, the bride now has her hair braided in two and wrapped up under the headdress. This is the act that signals that she is now a married woman. Then everyone is called to the table for the meal.

Hair is used to articulate power and danger.

Of the entire wedding ritual complex, the only time when the hair is not controlled is during the trip to church. Some scholars make a distinction between the folk part of the ceremony and the church part, stating that the popular ritual is considered indispensable to the validity of the marriage, while the church ceremony is not essential. It is crucial that, at the juncture between the folk and the church segments of the ceremony, the bride's hair is loose. This ritualized journey to the church, considered to be the most "dangerous" sequence in the entire ceremony, may represent and document a transition in ritual and in history from pre-Christian to Christian influence.

The loose hair of the bride at this point may be a remnant of a former, pre-monogamous society and symbolic of the bride's sexual fertility, and of her freedom, which she is about to relinquish upon partaking in the church service. Scholars also state that the emphasis on virginity is a Church influence rather than a folk custom. Again, the bride, who is valued for her reproductive ability, is considered to be sold to her husband under the symbolism of selling her braid. Scholars document a belief that the symbolic sale of the braid to the new husband is an indication that he is the master and the bride is his slave. One custom typical of the Orthodox Church wedding is a ceremonial switching of the crowns - perhaps symbolic of a reversal of the power structure between a woman and a man.

In contrast to the bride, there is a female folk figure in traditional East Slavic lore whose hair is permanently loose and

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uncontrolled; she is the *rusalka*. The *rusalka* of traditional beliefs is a powerful and enticing figure. She is described as a pale, lithe, often beautiful female spirit who lives in the water, forests and fields. She sits with other water spirits on the shore, yelling and laughing, or dancing and singing in the moonlight of clear, summer nights. She is known to swing on tree branches, waiting to entice an unsuspecting male passerby, whom she often attacks and (perhaps inadvertently) tickles to death. The *rusalka's* characteristic physical attributes are her long, light-brown, blond, or green, loose hair, her blazing eyes, and her magnificent breasts. She is noted for her beautiful voice and melodious laugh. On the rare occasions when the *rusalka* is dressed, she wears white (the color for corpses). In addition, some sources report that if the *rusalka*, and especially her hair, ever dries out, she will perish.

The *rusalka* was believed by many nineteenth century peasants to be the soul of an unbaptized or stillborn baby, or the wandering soul of a young, unmarried but often betrothed woman who had died an untimely death, or who had become pregnant out of wedlock and drowned or hanged herself.

Some sources report that if the rusalka, and especially her hair, ever dries out, she will perish.

The *rusalka* may be seen as a symbol of potent yet not-quite-tapped fertility, and as such is celebrated and feared during the spring festival, *Rusal'naia nedelia* (Mermaid Week), during which people played music, danced and sang to celebrate new vegetation. It was during this week that the *rusalka* was believed to leave her watery home to wander in the forests and fields, and bring moisture to the crops. Peasants decorated their homes with fresh green birch branches (the *rusalka's* tree), and young girls often went to the woods and decorated actual trees with cloth, thread and garlands, and then danced the *kborovod* (circle dance) and swore vows of friendship and sisterhood.

But the water creature was also feared at this time. To appease her, peasant women left offerings in the woods of scarves and linen. Others attempted to minimize the *rusalka's* harm by using the sign of the cross, magic circles, garlic, wormwood, incense, pokers and charms. At the end of *Rusal'naia nedelia*, village girls escorted an effigy of the *rusalka* out of the village and back towards her forest or water home. In some areas they burned or tore up and distributed pieces of the dummy in the grain field. In other

areas, they pretended to be priests and blessed the dummy. In still other areas, they combed her hair, bid farewell to her at the local body of water, fastened stones to her coffin, threw her into the water, and danced the circle dance.

Interpretations of these rituals acknowledge both the frightening aspects of the *rusalka* in the need to banish her, as well as her moist, life-giving attributes and the attempt to renew the cycle of fertility and vegetation. These rituals are part of a larger ritual complex performed between the winter and summer solstices in which an effigy is created and named for the season, paraded through and out of village, and then killed or otherwise dispatched back to earth, water, forest. Such rituals function as an active "leading out" of the season out when it is time.

The *rusalka* is considered by some to be a remnant of goddess worship. In some Ukrainian sources, she is called *bohynia* (goddess). Accordingly, she is a powerful, yet playful, female figure who can be tamed by a cross, baptism and marriage. At this point, she makes a proper wife. Otherwise, apparently out of loneliness, she tries to bring a human man to her home to live, which implies drowning.

The *rusalka's* description shows the inversion which occurs to an important pre-Christian figure with the growing influence of Christianity. What was once sacred becomes profane; what was positive becomes negative. The *rusalka* is probably a descendant of *Mokosh'*, the goddess of fertility, bounty and moisture, and the protectress of women's work and the fate of maidens. Her taming by the cross may reflect just that - the taming of belief in the *rusalka* as a powerful supernatural figure due to the influence of Christianity, which did not acknowledge the pagan gods and goddesses.

It is possible that the *rusalka* is a remnant of an older society in which women were freer to express their sexuality. Many Slavic sources state that, with the influence of nomadic patriarchal tribes and, later, of Christianity, Slavic cultures became increasingly more patriarchal and monogamous marriage was instituted. The influence of the church may have served to break the identity of village girls with the *rusalka*, and instead, to make them enemies who compete for the same village men. It may also have served to criticize the uninhibited sexuality and sensuality which the *rusalka* continually expresses.

One of the rituals associated with *Rusal'naia nedelia* is a mock remnant of the wedding ritual. In some areas, boys approached the girls and tried to throw their crowns on them, while the girls mimicked the *rusalka*, trying to catch the

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boys and tickle them. In light of the crowning sequence in the church ceremony, these games almost certainly pair the future bride with the *rusalka*. Additionally, the constant washing of the bride's hair is also reminiscent of the *rusalka*'s hair, which must always be moist.

According to Natalie Kononenko in "Women as Performers of Oral Literature: A Reexamination of Epic and Lament," there are notable similarities between the wedding ceremony and the funeral:

It is tempting to see the *rusalka* as a remnant of a pre-Christian deity, forced underground, or, more literally, underwater by a new religion. It is also tempting to see the *rusalka*'s life as a reflection of an early social order where there was no marriage and women accepted men into their domain to father children. Speculation aside, folk belief articulates clearly that a woman who resists marriage, especially one who gets pregnant outside marriage, is bad. A woman who does not submit to the symbolic death of the wedding must accept the literal death of the *rusalka*. A woman who does not become spiritual as a married woman should, must become a spirit, and a bad one at that.

This connection between the *rusalka*, our aquiline goddess/witch, who sings in the woods and romps around naked with her hair flowing freely, and the East Slavic bride who sits covered with cloth and sings only dirges, may also be expressed in wedding laments. In one lament, *Plach na devishnike*, the bride says that she sits in a sad place, with her hair plain, loose and disheveled. She then addresses her beauty (*kerasota*) and releases it to the fields, meadows, forests and rivers. In another lament, *Plach nevesty v den' svad'by*, the bride releases her will (*volia*), and it flies to the woods and alights on a fir tree. When she tries to retrieve it, someone has chopped down the tree, in a Freudian deflowering. It may be that these images are references to the attributes of the *rusalka*, such as beauty and free will, which the unmarried girl possesses but then relinquishes in marriage. Of course this is a loss of freedom that any new spouse undertakes in pledging fidelity to one person. But in conjunction with the patriarchal bent of the church and the wedding ritual complex, it is perhaps also acknowledging the bride's yielding of her own will to her dominant husband – as referenced in the euphemism for the traditional wedding ritual: "selling of the braid," which ethnographers interpret as a symbol of the bride's submission to her husband.

Ethnographer N.L. Pushkareva depicts a transition in the

wedding ceremony from the tenth to the fifteenth centuries. Specifically, the earlier wedding ceremony is described as having been based on a contract agreed upon by both bride and groom. By the sixteenth century, though, due to

subjugation by the Golden Horde ... strengthening of a despotic political system...[and] the growing influence of an ascetic Christian doctrine, women in the higher classes lost their personal, proprietary and hereditary rights.

This sense of historical transition from non-patriarchal to patriarchal influence is reflected in the actual traditional wedding ritual itself and in specific rituals dealing with hair.

The tidying of the hair for the wedding may be an implicit attempt to order, own, or contain the chaotic freedom associated with the woman and her sexual energy as expressed in the *rusalka*. In addition to making order out of a type of chaos, the constant washing, combing and plaiting of the bride's hair is likely an attempt to conjure up the fertility of the *rusalka*, much like the grooming of a garden, so that the bride may bring this potent productivity to her marriage.

In sum, hair is indeed a potent means of sexual expression, whose roots go deep in Russia, Ukraine and Belarus. Even after the disintegration of the traditional wedding ritual, hair is still used to express social and sexual behavior. In their article, "Getting Under Their Skin," Nadezhda Azhgikhina and Helena Goscilo describe a series of contests organized in Moscow in the 1990s — for Miss Bust, Miss Legs, Miss Erotic, and Miss Hair. The contestants in the 1994 competition for Miss Hair wore only bikini briefs and loose hair. They may not have consciously conjured up the image of the *rusalka*, but surely the *rusalka* was laughing stage left. §



Rusalka, by Ivan Bilibin, 1934

Self-Expression and Social Interaction in Electronic Fashions

Susan Brown

Assistant Curator, Cooper Hewitt

Fashion as a means of self-expression only functions within a specific context, and is perhaps more accurately described as a means of social communication. It signals access to information, being “in the know,” keeping up with an ongoing cultural dialogue. Whether that dialogue is the one presented in the pages of *Vogue* or that of another sub-culture or counter-culture, the signals have a target audience. As soon as the signals become popularized, or understood by a wider audience, those who seek to be trend-setters must find new signals. Keeping up with fashion, as we know, requires financial resources.

There are also fashions within the realm of digital media—ideas, arguments, jokes, or images which spread rapidly, usually in a matter of hours—through the web-based media of blogging, MySpace, YouTube, etc., and then are replaced by fresh ideas. Identity and community are also closely linked within this electronic sphere—the online “self” is often built up from links to others-- these are my friends, these are the blogs I read, here’s my latest playlist, here’s a link to something I found interesting. While being a trend-setter in the electronic sphere can take large resources of time, to seek out or generate esoteric material, it is otherwise inexpensive.

For the most part, our electronic life remains contained inside a relatively passive physical world. While we may complain about keeping up with constantly changing fashions, when compared with digital media, the “signal refresh rate” of clothing is slow, due to the expense and constraints of garment production. The absence of materiality in the electronic world allows for a very fluid sense of identity. But there is a desire to combine the fluidity and personalization of digital media with the physicality of clothing and of the body—both to activate our physical world and, perhaps, to dispel the disembodied feeling of living in the digital world.

Extreme Textiles

In 2005 we presented an exhibition at the Cooper-Hewitt called “Extreme Textiles: Designing for High Performance,” which featured the latest in what are variously called techno

textiles, e-textiles, or i-textiles (interactive textiles). We focused on technologies which were developed for high-risk scenarios, but today, just a couple of years later, many of these same technologies are being co-opted for more expressive or playful projects. Many of them are geared toward communication between garments, expanding the interactivity and interconnectedness of the digital world into the physical one.

One early experiment in electronic textiles (c. 1999- 2000) was using metallic yarns applied by embroidery to produce conductive pattern surfaces. Maggie Orth, then a student at the MIT Media Lab, created soft, tactile, musical interfaces to enable children to compose music with a completely non-threatening input device. For “Extreme Textiles,” she produced fuzzy light switches, which are pompoms made from fine stainless steel yarns.

The embroidery concept was very successful and was used to develop a number of soft touchpads, keyboards and switches such as the Softswitch touchpad by Eleksen.

Perhaps the biggest tech explosion of the past two years has been the ubiquitous iPod, and today, electro-conductive textile touchpads are featured in a wide range of iPod compatible garments, from backpacks to bike shorts. Apple has started a “Made for iPod” licensing division to facilitate

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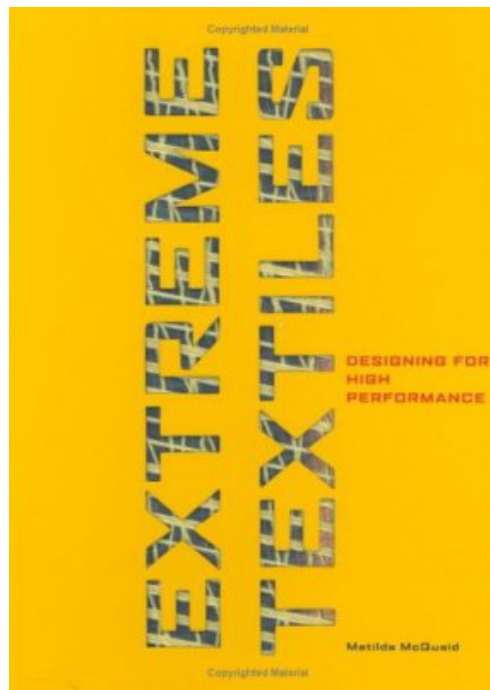


Exhibit Catalog for “Extreme Textiles: Designing for High Performance”

the development of such products. Urban Tool Groove Rider, for example, is an athletic shirt which combines cable management features for headphones with Eleksen's fabric touch pad, allowing one-handed control of play, volume, and track change features of the iPod while cycling, running or blading, without removing the iPod from its pocket.

In "Extreme Textiles," we showed the prototype Rover Control Glove designed by ILC Dover for NASA's Mars Exploration program, which used an embroidered keypad to control the movement of the astronaut's robotic assistant, as well as the lights on his helmet. Reusch's new Sonic Control glove uses a Fibretronic keypad integrated into the back of the hand, with a wireless transmitter in the glove and a wireless receiver connected to the iPod, to enable the wearer to remotely control the iPod while it is safely stored in a jacket pocket or backpack.

China Coin by Fitright Industrial is another company selling the electronics package and management of the Made for iPod license to fashion manufacturers. This one has the advantage of lighting up so you know when your iPod is on, and of being identical in form to the familiar iPod controls.

The first mass-market e-textile was the Malden Mills heating blanket, which incorporated hair-fine stainless steel fibers into a fleece construction to make an all-over heating surface with no detectable wires.

That technology was later incorporated into the MET 5 Jacket by The North Face, using the fleece to heat the chest and back of the jacket for up to 3 hours. In several recent projects, heat is used more metaphorically, in garments that attempt to re-interpret digital communication by using it to transmit the qualities of affectionate touch.

The Hug Shirt is embedded with a series of sensors which record the intensity and position of a hug you give yourself, along with the beat of your heart. The information is transmitted to your Bluetooth-enabled cellphone. Using java software, the information is converted into a data message which can be sent to your partner's cellphone and re-created in his or her shirt as a combination of warmth and pressure, replicating your hug. You can send a hug without wearing the shirt through keypad commands, but of course the receiver must be wearing the shirt to "get the sensation."

Similarly the Tap Tap scarf uses Bluetooth technology to record, send, and play back the pressure, warmth, and duration of a touch. Designed to look like a normal scarf, TapTap provides additional emotional comfort by sending

nurturing touch to a distant loved one, elderly person, or child.

Body Monitoring

From the beginning, body monitoring has been an area of intense interest and research in electronic textiles. The Lifeshirt by Vivometrics is an approved medical device which measures posture cues, movement, breath, and galvanic skin response, to determine activity level and overall well-being. This information can be transmitted wirelessly to a doctor or researcher for analysis. It is used in the testing phases for drug therapies, and even to gauge someone's mental state from relevant physical parameters.

Likewise the Sensewear patch by Body Media is a textile-based device which measures heart rate, temperature, galvanic skin response, and caloric output, and is used in the study of diseases which are closely linked to lifestyle issues, like obesity and heart disease.

Two years ago, textile-based monitors were expensive and exclusive devices, and for individual use the only option was the plastic heart monitor on a chest strap.

Today, textile-based heart-monitoring sports garments are becoming available, like the NuMetrex sports top. Sensors in the fabric pick up the heart's electrical pulse and relay it via a transmitter in the front of the bra to the heart rate monitoring watch, where the information is displayed. In addition, the transmitter can communicate with some fitness machines like treadmills or stairmasters that have integrated monitoring devices.

The Heartbeat Hoodie takes heart monitoring technology and uses it to explore the idea of life blogging, in this case involuntarily documenting parts of your life by using a camera to take photographs at moments of stimulation. The camera, strategically placed above the eyes on the hood, is wired through the seaming of the garment to a basic stamp that communicates with a wireless heart rate monitor. It uses an algorithm to analyze the heartbeat for increases that might signify excitement or interest rather than physical exertion, and then signals the camera to take a picture.

Since the photographs are taken unconsciously, in reviewing them at the end of the day, you may find interests that you were not aware of.

And it is certainly more chic than Steve Mann's "reality mediator." Cyborgs like Mann are using video and audio-equipped headgear to collect data continuously. But this

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notion of ubiquitous computing presents the problem of interpretation: what do you do make of it all? I think Heartbeat Hoodie is conceptually quite beautiful—using your heart as the first-level interpretive tool in ordering the endless data stream of life.

Light

Light is another aspect of e-textiles, and electroluminescence, fiberoptics, and LEDs have all been explored as possible enhancements for clothing.

Light has a profound effect on our psychological well-being, and textiles that emit light can enhance the soothing effects they naturally possess. These pillows and duvet were developed as a treatment for patients with Seasonal Affective Disorder. Embroidered with electroluminescent wire and connected to a timer, they can simulate a sunrise, helping the user re-set his or her body clock. Likewise Hussein Chalayan's LED hats are intended to provide mood-enhancing light on dreary days.

Light has a profound effect on our psychological well-being, and textiles that emit light can enhance the soothing effects they naturally possess.

To date, much of the electronic clothing that is available to consumers is active sports apparel, and much of it designed to work with existing devices like iPods, cellphones, etc.

In 2007 the Turkish fashion designer Hussein Chalayan took up the challenge of incorporating technology into haute couture. As an established designer presenting his collections on the Paris runways, this was no small risk. At his Spring/Summer 2007 show, he used six shape-shifting dresses to trace one hundred years of fashion history.

One predecessor may have been the Mars Lander Airbag system. The airbags protected the Pathfinder rover during its crash landing on Mars, but then needed to retract so that the rover could emerge.

A system of cords controlled by motors pulled the excess fabric clear of the robot. Chalayan's dresses, controlled by micromotors, invisible cords, and tiny pulley systems, morphed through the changing silhouettes and hemlines from 1900 to 2000, unzipping themselves, growing shorter, and sometimes vanishing altogether, quite autonomously.

For Autumn/Winter 07, Chalayan collaborated with German engineer Moritz Waldemeyer to present five electronic concepts, which constitute what I believe to be the first "wearable electronics haute couture." A red and black striped coat has a retractable hood like a convertible top, which is wired to activate in inclement weather.

A cocktail dress features an LED-embedded textile with an overlay of silk chiffon for a shimmering, constantly changing effect. The dress has 15,000 individually controllable LEDs, so moving video imagery can be displayed across the surface of the dress, here, time-lapse film of a rose opening and closing. Or, tuna swimming in the sea.

For Spring/Summer '08, Chalayan and Waldemeyer paired again to create dazzling crystal garments. Hundreds of laser diodes are attached to the fabric with brass hinges that were custom made from etched sheet material. These are controlled by tiny servo motors which cause the lasers to move and reflect off the Swarovski crystals, giving the effect of the garments shooting out light. These objects combine technology with traditional dressmaking skills—the intensive hand work that defines haute couture. This was something that struck us even working on "Extreme Textiles"—the continued presence of the hand in the most high-tech applications.

I think Chalayan's work is important because it uses technology in the service doing what fashion has always done—communicate through silhouette, color, movement, and the play of light. Beyond cleverness, quality of design is needed to truly bring a new dimension to the conversation between technology and fashion. To quote Maggie Orth, whom I mentioned earlier,

Houses were supposed to be private, but (Philip Johnson's) glass house made everyone re-think the house, by changing its materiality. The e-textile makes everyone re-think the materiality of technology. I pursue soft technology because it also has the capacity to be beautiful. I think this is an important aspect of being human—the pursuit of beauty.

It is always tempting to compare the brain to computer software. But while the functionality of computers, the software, is often housed in a non-descript black box, the brain is housed in a beautiful, expressive, moving body.

Through the experiments of skillful technicians and designers, perhaps the digital world can come to have an equally expressive physicality. §

MATERIAL MATTERS (Part II.): Winter Forum

The Lost World of James Smithson (cont. from p. 1)

Pam Henson

Guest Editor, James Smithson section of Material Matters

Director, Institutional History Division, Smithsonian Institution Archives

At this Forum, we heard about Ewing's strategies for solving the mystery of James Smithson – how she searched for alternative forms of documentation – taking small scraps that appeared useless to others and using them to create a network of Smithson's colleagues. The papers of those colleagues in turn gave new insights into his life. Appropriately for a mystery, she also turned to one of our forensic anthropologists, Dave Hunt of the National Museum of Natural History, and so we'll learn about James Smithson from his skeletal remains. What sort of person was he, physically? What can his remains tell us about his health, his work, his life?

One of the few things that survived the fire of 1865 was Smithson's personal library. Smithsonian Institution Libraries rare book librarian Leslie Overstreet worked with Ewing to analyze these books – what do they tell us about an educated man of his period? Are they annotated – what do those annotations reveal about the man? Are these all of his books or are there more? More mysteries were unraveled.

A researcher's publications are often a window into their

work, world view, and way of thinking. But Smithson's scientific publications, using laboratory equipment and descriptive terms not used in modern science, were not easy to decipher. Steve Turner, curator at the National Museum of American History, took on the challenge of interpreting Smithson's research in its scientific, technological and cultural context. Central to this was an understanding of exactly what Smithson was doing. By using the material culture of an eighteenth century chemical laboratory to reproduce Smithson's experiments, Turner was able to decipher the language in Smithson's publications. This, in turn, led him to unravel why Smithson was so interested in the substance "calamine" and the importance of that research to the skyline of Paris and European wars, among other things.

These papers separately and alone demonstrate the value of our commitment to "the increase and diffusion of knowledge" and of focus on material culture in research. Although we study disparate subjects at the Smithsonian, we share an interest in what objects can tell us about the past and the present. And experts in fields such as physical anthropology, art history, rare books, scientific instrumentation, archives, and mineralogy can each shed new light on the same subject, using different techniques, asking different research questions, studying remarkably different objects. This basic research on the "stuff" of the world is what creates the intellectual community that Smithson envisioned. §



*Smithsonian Institution benefactor James
Smithson's original gravesite in Genoa, Italy*

*His remains — and the sarcophagus on the left
in this photograph — are now located in the
Smithsonian Castle on the National Mall in
Washington, DC.*

Photo: Smithsonian Institution

Finding James Smithson

Heather Ewing

Research Associate, SI Archives

Not so long ago the idea of a forum on James Smithson would have been dismissed as a pretty flimsy proposition; it has long been a given that the Smithsonian doesn't really have anything much left of the founder. It was here in this room, which was the Gallery of Art, in January 1865 that the fire that destroyed the upper floor of the Smithsonian building began. Among the losses that day were Smithson's papers, including some 200 unpublished manuscripts; his diaries, which he'd been keeping since he was a teenager; his mineral collection, numbering some 8-10,000 specimens, with Smithson's handwritten labels – it was lauded as the finest collection in the United States in the 1840s, and it also included “a valuable suite of meteoric stones, which appear to be specimens of most of the meteorites which have fallen in Europe during several centuries”; as well as nearly all of Smithson's other personal belongings, his silver tea set, his umbrella and walking stick, his portable chemistry equipment, etc. They had been kept in the Regents Room, which was then a beautiful double-height space – one of James Renwick's most glorious spaces, another great loss of the fire.

The portrait of Smithson that developed following the fire was one of wealthy dilettante, an eccentric and reclusive loner. Smithson was illegitimate son of the first Duke of Northumberland; his mother was a wealthy widow who was a cousin of the Duchess of Northumberland. Smithson dedicated his life to science; he published 27 papers, and he was elected a member of the Royal Society at the very young age of 22, but over time he came nevertheless to be dismissed as an amateur. He never married and had no children. With so little known about him, his story was relegated to a mystery: why a man would leave his fortune to a country that he had never seen?

So the question that lay at start of any biography or research was: “how do you go about looking for someone lost to history?” These aspects of his story that you've been introduced to today were crucial to my gaining an understanding of Smithson's life, and they also helped established my research program – setting the questions and the leads that I explored in the libraries and archives of Europe.

I began by focusing on these traces that exist here at the Smithsonian: the library, which was the only substantive article of Smithson's to survive the fire, because it was kept in a separate part of the building, downstairs in the Commons. As

you've seen, many of the books were inscribed to Smithson from friends, which gave me lots of names, and he had also annotated many of the pages. I won't go into the family history, but my research showed someone deeply troubled by his illegitimacy and preoccupied with claiming his famous father, who never publicly acknowledged him. There were only twenty-some dukes in late 18th century and Smithson's father was one of the newest but also one of the most magnificent. Bells rang when he and the duchess entered a town. Their parties, clothing, goings-on all avidly reported in the press, and the 1760s/1770s marks the birth of the gossip magazine—it would have been a little like having a Hollywood dad today, one who denied your existence.

Smithson seems to have obsessively followed his father's fortunes, and in fact began the process of changing his name from James Louis Macie as soon as his mother died in 1800. Smithson was the name of his father before he became duke, so the name change would have publicly aligned him as son of the duke. These books show that; everywhere his father was mentioned, Smithson poignantly marked the margin.

There was also a cache of mineral notes that survived the fire: notes from his experiments and drafts of a mineral catalogue, which the Smithsonian mounted into a book in the late 19th century. As you've heard today, Steve Turner is taking this material to an exciting and entirely new level now. Paul Pohwat at the National Museum of Natural History used these notes to select the specimens in the Smithson exhibit downstairs to create a representation of Smithson's collection.

I found these useful for the names of people he'd exchanged specimens with, and localities where he'd collected specimens. By seeking these places out using historic maps and guidebooks, it was possible to follow the main travel routes, marked by the posts where people changes horses for their carriages, and use this kind of information to get a sense of Smithson's travels.

Names came too from other caches. In England I found Smithson's bank records, at Hoare's Bank in Fleet Street, which gave me hundreds of leads. At the Royal Society, I discovered registers listing members and guests they brought to the weekly meetings. As I put these pieces together a new picture of Smithson began to emerge: I discovered a young man extremely talented and ambitious. He brought guests to nearly every meeting, foreign scientists he met at coffeehouses and scientific salons at Sir Joseph Banks'

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house, the president of Royal Society, an informal scientific salon. Smithson early on cast a wide net, building an international network of correspondents, people he could exchange information and specimens with, even before he became a member of the Royal Society.

This international network proved central to the story and to my method of research. I built a database I called the Circle of Smithson; I realized that though the Smithson Papers hardly existed anymore in the Smithsonian Archives, it might be possible to uncover stories of his life through the letters and diaries of his friends – these social and scientific circles that came to symbolize the lost world of James Smithson. This was originally supposed to be an appendix to the book, but is now forming a central part of the new Smithson website we are building. It's going to be an interactive site, highlighting much of this material culture from across the Smithsonian to explore Smithson's story and his world.

This Circle of Smithson kind of approach made the other cache of information at the SI Archives very interesting: the calling cards and cut-up letters from Smithson's time in Paris, which the SI had obtained in the late 19th century from relatives of Smithson's nephew in France. They'd been cut up for their signatures, but they gave us the names and in some cases the dates as well, such as the renowned Danish chemist Hans Christian Oersted, discoverer of electro-magnetism, who visited Paris in 1823. These helped me develop a picture of the rich scientific life in Paris in the 1820s, the salons, the collegial community around chemistry. One Smithson friend, Swedish chemist Jacob Berzelius, wrote with excitement that he'd found some 100 laboratories in Paris and that the amount of chemistry being done in Paris was "completely incredible."

Just as I had rethought Smithson's ambitions and goals as a young man, so all these disparate little pieces led me to shift my ideas about Smithson's abilities, and about how he was perceived by his peers. "Cooking muck," as Berzelius called his chemistry experiments, was arduous and perilous. Smithson was tasting and inhaling toxic substances, often risking explosions. A number of his friends were missing eyes or fingers. Smithson was one of the pioneers of micro-chemistry and was very highly regarded for his ability to manipulate particles that were scarcely visible. He was expert with the blowpipe. Such work demanded high dexterity, precision, extensive knowledge of effects and what they meant; few had it.

I was amazed to discover in Copenhagen, among the Oersted papers a wonderful letter showing just how much regard

Smithson's contemporaries had for him. It described coming to observe Smithson in the lab: "The tools he uses ... are so small that children would regard them as toys, but he uses them with the greatest skill. He often yields the constituents of amounts so small you can scarcely believe, amounts that often do not weigh 1/10 gram." This is a big change from the idea of him as a dabbling amateur. Steve Turner's work is doing even more to rewrite our understanding of Smithson as a scientist.

At the end of his life, Smithson was publishing madly, 27 known papers during his lifetime, and of those, fully 17 during six years towards the end of his life. His papers were coming out sometimes two or three back to back. He was driven by a number of factors. He felt a strong desire to be remembered. Found among his papers before the fire was that quote: "My name will live on in the memory of men."

He was also compelled to prove himself or show others they misjudged him: Anecdotal history has it that he had a run in with the Royal Society over one of his papers. They had edited out some sentences, and in a fit of pique he never published with them again. According to the two scientists from whom we have this account (Charles Wheatstone and Louis Agassiz, there's no archival record left of it), Smithson had by that time decided to leave his fortune to the Royal Society, but then he changed his will. It is true that 1817

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**Portrait of James Smithson, 1816 (National Portrait Gallery)
Image: Smithsonian Institution**

paper is his last with the Royal Society and the flurry of others were all printed in other venues. And they were still directed at a British audience, even though he moved to Paris for last decades of his life.

Above all he was guided it seems by a desire for usefulness and utility. He chided his fellow scientists for not publishing what they knew, even little improvements to their apparatus. In one of his papers, he laid it out most clearly: “It is in his knowledge that man has found his greatness and his happiness ... No ignorance is probably without loss to him.”

*Smithson saw scientists
as benefactors of all mankind. ...
I think this is the key behind Smithson’s bequest,
and those antiquated words: “an establishment for
the increase and diffusion of knowledge among men.”*

One fun thing that has come out of this work is to speculate a little on what the lost material culture might have been, what might have been the topics of some those 200 unpublished manuscripts of Smithson’s that were lost in the fire of 1865? I found in the diary of one of Smithson’s friends from Paris a fascinating account of going to visit Smithson in his apartments and finding him trying to replicate viper’s venom, which he had been sent by a scholar in America. Smithson never succeeded, but these experiments indicate that Smithson’s ambition to make an important and novel contribution remained undimmed at the end of his life. It also shows that he had contact with colleagues in the U.S., and that he was curious to explore the riches of this country. He had his eye on this place for many reasons, most of all because he believed a system grounded in liberty and the rights of man was the best foundation for the pursuit of knowledge.

It’s this finally that the study of Smithson’s material culture made possible: a chance to make some sense of Smithson’s mysterious bequest, to give it a new grounding and context. Smithson described the state of chemical knowledge as consisting “entirely of isolated points thinly scattered like lurid specks on a vast field of darkness...” But there was a tremendous excitement – the hope that Smithson and his fellow chemists shared that one of them might become the Newton of this field, uncovering universal laws governing chemical change. It made everything worthy of study: mulberry juice, his lead pencil, the colors on Egyptian statue, a lady’s

tear, or the green stain a gnat left when crushed on paper.

In science Smithson found a world where he was valued for what he could contribute, and for the talents that he brought to the table—for his mind, not for his bloodline or who his father was. Science was the closest thing the 18th century had to a meritocracy, and for Smithson—so troubled by his illegitimacy and preoccupied by how the circumstances of his birth had affected his life—it opened up the possibility of a new future, a world governed by science and reason rather than the corrupt, superstitious authorities of Church or King.

America was that world. In the 1780s, when Smithson and his chemistry friends were founding new philosophical societies in the coffeehouses of London, creating new egalitarian forums for the exchange of knowledge, America across the ocean was embarking on an experiment as radical as any scientific one, a kind of government the world had never yet seen.

America’s statesmen—such as Benjamin Franklin and Thomas Jefferson—understood the importance of the increase and diffusion of knowledge. They were scientists and founders and leaders of philosophical societies, ardent supporters of the spread of knowledge. George Washington in his farewell address to the nation called for the promotion of institutions for the diffusion of knowledge. And the election of 1800, between Adams and Jefferson, was also the contest between the president of the American Academy of Arts and Sciences and the president of the American Philosophical Society.

Smithson saw scientists as benefactors of all mankind. Just as nature was subject to the same laws all over the globe, so, Smithson believed, “The work of scientists being for all nations, they themselves should be considered citizens of the world.” I think this is the key behind Smithson’s bequest, and those antiquated words: “an establishment for the increase and diffusion of knowledge among men.”

The “among men” are so often left off today, because they seem to exclude half of society, but they are very important; they signal that the gift was not just for the United States, it was to America, this place of the future, in trust for *all mankind*. Smithson’s bequest, when seen in this light, seems not a random act, but rather the natural if extraordinary extension of one who came of age during the explosion of knowledge and revolution in the late eighteenth century.

It is also a moving testament to the Enlightenment ideals at the heart of our nation’s founding. §

James Smithson's Remains

David Hunt

Collection Manager, Division of Physical Anthropology, NMNH

Review and Re-assessment of the 1973 Skeletal Biological Analysis

The exhumation of James Smithson grave was prompted by the activities of a rock quarry near the Genoa cemetery where he was buried. The wall next to his grave was collapsing. SI Regent Alexander Graham Bell learned of this, and he and his wife went to Genoa and supervised the gravesite exhumation in December 1904. The American Consul in Genoa, William Bishop, recorded the exhumation and noted the coffin was disintegrated, and he estimated the height of the person to be 5 '10" tall.

The remains for the burial were brought back to the U.S. by the Bells and transferred to a copper casket. There were many deliberations about the design and execution of a crypt for Smithson to be placed in the Castle.

1905 Osteological Study:

Before the remains were interred in the crypt on February 4, 1905, a study of Smithson's remains was performed by Dr. Z. Sowers, under the request of Secretary Samuel P. Langley. With Dr. Sowers' short examination time, he identified that the remains were loosely packed in the box with moist cotton on top, and the bottom of the box had a dark brown "mould," fibrous roots with fragments of rotted wood, brass, nails intermixed.

The bones were described as dark colored and light in weight, the muscle markings and the shape of the bones suggesting "a man of sedentary habits and somewhat advanced age." Long bone measurements estimated a height of about 5' 4" tall, somewhat different from the reported 5' 10" estimated by Bishop in 1904.

Renovations of the Castle during 1973 were going to affect Smithson's crypt area, and research into the crypt burial indicated conflicting accounts to where the remains were actually located; in the floor in front of the crypt, in the crypt base, or in the top of the tomb. So in September 1973, the floor was tested, but with the depth of the floor was 10 to 21 inches and no place for a coffin. On October 1, the lid of the tomb was lifted and it was empty. On October 2, a hole was drilled into north granite plate of the base and the coffin was identified in this location.

With this discovery, there was speculation whether papers and other information may have been buried with Smithson and there had been little else known about the founder of the institution. Thus the decision was made to open the casket.

Since the casket would be opened, it also seemed reasonable to have the remains studied by the anthropology curators in order to shed light on Mr. Smithson's biological life and health, what might be reflected in the bones. All this was to happen "as quickly as possible".

Dis-Interment:

At 10:00 am, Wednesday, October 3, 1973, the coffin was removed from the crypt base with a contingent of the SI administration observing. The wooden coffin was opened and a copper box tightly fitted inside. The metal casket was sealed with solder, so a blow torch was used to melt the solder in order to be able to open the lid. The blow torch melted the solder, but the torch also ignited the deteriorated silk lining on the inside of the metal casket. With concern of damage to the skeleton, the nearby fire extinguisher was not used, but instead the laborers were sent to fill their mouths with water from the nearby water fountain to extinguish the fire.

Since the casket would be opened, it also seemed reasonable to have the remains studied by the anthropology curators in order to shed light on Mr. Smithson's biological life and health, what might be reflected in the bones.

Once the fire and smoke was cleared, the skull was found positioned at one end resting on its base, the rest of the bones were scattered in the box, resting on the soil, wood, metal and cloth remnants from the original 1829 coffin. No manuscripts, documents or time capsule was found in the copper box.

The lid was placed back on the box, the coffin covered with a tablecloth and this was carried "inconspicuously" across the Mall to the Natural History Building where Dr. Lawrence Angel's lab was located. During the afternoon of October 3rd and all through the day of October 4th, Dr. Angel and other anthropology staff members (Drs. Lucile St. Hoyme, Dale Stewart, Don Ortner, and Doug Ubelaker, and Museum

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specialist Robert Jenkins) worked feverishly to clean, measure and study the skeleton of James Smithson.

1973 Physical Anthropological Study:

INITIAL OBSERVATIONS:

Almost all bones of the skeleton were present. Only some of the smaller bones of the hands and feet were missing. These were probably overlooked in the exhumation in Genoa. It is not uncommon in exhumations to lose some of the smaller bones since the wood of the coffin would have rotted away decades earlier and the bones would have shifted in the ground and these small remains overlooked thinking them to be stones or dirt. Dr. Angel noted that there was some evidence of post-mortem damage to the skeleton from the original exhumation by fractures of the ribs and portions of the spine. The dark brown staining of the bones was from the decay of the wood of the original casket, identified as pine by the Botany Department.

As would be done in any forensic anthropological investigation, confirmation of the remains to be consistent with the expected individual that was supposed to be in the coffin was necessary. Below is a brief review of Angel's report and my re-assessment from the photographs and metric data collected by Dr. Angel.

SEX:

The pelvis had typical male morphology with an acute sub-pubic angle, and triangular pelvic inlet. The skull was also diagnostically male with a supra-orbital ridge, nuchal line, larger mastoid size, and a distinct mental eminence. However, the skull features were not excessive, but more gracile in their morphology. Additionally, the femoral heads are intermediate in size (46 mm), suggesting that the individual was of slighter build than is typical for males.

AGE:

The arthritic changes of the spine and the joint articulations are consistent with features found in individuals greater than 45 years of age but not in advanced age of greater than 70+ years. The pubic symphyses have morphological characteristics consistent with an older individual, with flattened pubic face and macroporotic and bony island features. This is consistent with standards for individuals over 50 years but not greater than their mid 70's.

Trabecular and cortical bone loss is not apparent in the radiographs of the bone, but they are consistent with an older individual. The biological evidence of Smithson's bones

suggests someone of slightly younger age than his 64 years at death. Dr. Angel speculated that the amount of wine and other alcohol that Smithson probably consumed as a normal practice in that time may have had an effect on slowing down the bone remodeling speed, thus making the aging features a bit younger than his chronological age.

ANCESTRY:

All of the morphological features of the cranium are consistent with populations groups of European ancestry. The narrow nasal aperture with a notable nasal spine, rimming of the inferior nasal aperture, centrally pinched ridging of the nasal bones with narrow inter-orbital spacing and forwardly placed facial features, are all features found in European ancestral populations.

Interestingly, when the measurements that Dr. Angel took from the cranium are applied to multivariate statistical analysis for population affiliation using modern forensic cranial samples, the results locate the metric morphology with individuals of African ancestry. However, assessment of the measurements show that the longer and lower arch of the cranial vault and longer cranial base of Smithson's skull is the reason for this inclusion, the facial features are much more diagnostic for Europeans. When plotted with relation to the centroids (or means) of the various groups, it is apparent that Smithson is not associated with either the White or the Black males, and definitely not part of the Asian groups.

In a different multivariate analysis using population groups from around the world, Smithson's craniometric values are most closely associated with Norse males and not any African or Asian populations.

In Dr. Angel's 1973 assessment of the cranium, he wrote in his report: "the long, low skull vault, narrow and aquiline face and strong chin occurs [sic.] frequently around the North Sea from the Tronder region in Norway to Scotland and south to Frisia." These results correlate to Smithson's reported heritage of English ancestry.

PERSONAL CHARACTERISTICS:

As was noted with the femora and in the cranium, some of the skeletal features are intermediate between male and female. However, the heads of the humeri are 46mm, well within the male range. There are observable muscle insertions on the humeri as well as the radius and ulna, indicating Smithson was an active man, getting plenty of

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exercise to stay healthy in his older age. However, he did not overdo his activities to cause accelerated arthritic changes in the joints.

Smithson's hands also had marked muscle insertions. Dr. Angel particularly pointed out the significant size of the hypothenar tendon attachment on the fifth metacarpal. Dr. Angel wondered whether Smithson had played the piano or harpsichord, violin or practiced fencing. Or could this be a product of Smithson's research work of grinding stone and /or the use of the blow pipe for his scientific experiments?

Height estimates of Smithson from the long bone lengths range from 5' 5" to 5' 6" tall, with a 2 to 2.5 inch range. This is consistent with Dr. Angel's estimation of 165 to 172 cm (5'5" to 5'7") and Dr. Sowers estimate of 5'4". However, this certainly does not agree with the estimate of 5' 10" made with the skeleton in the ground at Genoa made by Bishop in 1904. The mis-estimation of height of a skeleton in the ground is a common error. When the skeleton settles in the ground, the bones will shift, often giving the illusion of a much longer body.

Dr. Angel interpreted Smithson to be right handed, due to the shape of the occipital area of the cranium, the right clavicle and humeral head being larger, and there is a pipestem facet on his teeth on the left side. This would be associated with a person lighting up the pipe on the left side to keep the smoke away from the right side of the face and hand. Dr. Angel was well noted for making interesting scenarios from the observations he saw in the skeletons he studied.

The pipe facet Dr. Angel identifies involves the left upper second incisor and left upper canine. This facet is formed by clutching abrasive clay pipe stems in the jaw, the abrasive quality of the stem wearing a groove in the teeth. There was no lower canine to make a confirmed match for the pipe facet. This pipe facet feature is common in men of this time period.

Also common of this time period was bad oral hygiene and thus early tooth loss and periodontal problems. Mr. Smithson suffered this malady as anyone else. He had lost 17 of his teeth during his life and at his death was in the process of losing another five by abscesses. Four teeth were lost after death from falling out of their sockets and were not recovered in the 1904 exhumation. Recession of the alveolus and carious lesions on the crowns of the teeth and an apical abscess are apparent.

Smithson had an osteological variant of a sixth lumbar vertebra, with the left transverse process having a pseudarthrosis with the sacral ala. Interestingly, there is little additional exostoses on

the lumbar rim to suggest additional movement or slippage. Nonetheless, he probably suffered from some lower back discomfort. The sacrum is also at a slightly different angle than normal and this may have caused a possible difference in Smithson's stance and gait. Arthritic changes of the cervical vertebral facets with exostoses on the facets and the bodies indicate elevated habitual activity of these elements. Dr. Angel speculated that it was from sitting bent over a desk studying and increased head turning.

FACIAL RECONSTRUCTION:

Dr. Angel attempted a facial reconstruction of Smithson from his skull by tracing the skull using a craniostat and then sketching the features upon the skull image. He did both a frontal and lateral view. I worked with forensic artists, Joe Mullins and Glenn Miller, at the Forensic Imaging Unit of the National Center for Missing and Exploited Children to do a superimpositioning of the skull on Smithson's portrait, and to do a two-dimensional facial reconstruction drawing from the skull photo. This effort was to see 1) how true the portrait was to biological reality, the skull, and 2) to produce an illustration of Smithson's face using the skull as the basis. There are differences in the two done by the NCMEC but still similarities in the "mask" of the upper- and mid-face. The results are not significantly different from Dr. Angel's other than his shape and size of the eyes.

Re-Interment:

At 1:00 pm on October 5th, 1973, a group of witness assembled in the machine shop at the Natural History Building to watch the re-soldering of the copper casket, this time without any fire problems. Smithson's remains were placed in a newly-made copper box just for the skeleton along with typed reports of the all the activities of 1973 (the opening and the anthropological study). This box was placed in the original copper casket along with the original soil and old coffin remnants. The box was then transported back across the mall to the Castle, this time by station wagon, re-fitted back in the mahogany coffin and at 1:45 pm re-located back in the base of the marble crypt.

An interesting final note: On the front cover of the Memorandum for the circulated report to the SI administrators of October 15, 1973, there is a note by Secretary S. Dillon Ripley (who was in Bhutan at the time of the opening):

"how did we get into this study? DR." §

Smithson, Science, Zinc, Calamine, and Brass

Steven Turner

Curator, NMAH

My interest in James Smithson dates back almost two years, when I was approached by a young woman named Heather Ewing, who was working on a new biography of our founder. Since then, she published *The Lost World of James Smithson*, and the success of that work has stimulated a new appreciation and a new curiosity about the man and his science. It is likely that Smithson will always be an enigmatic figure, social and yet somehow unsure of his place, in society and in science. Yet he is also a compelling figure: gifted and bright; honorable and idealistic. Precious little of the man survives, but thanks to this new biography we now know more about him than ever before. Impressively, with few of the traditional biographical resources available to her, Ms Ewing was able to describe Smithson by focusing on the things and people around him, effectively reconstructing the details of the man from a multitude of intersecting viewpoints.

The success of that approach in revealing Smithson, the man, has stimulated a similar approach to understanding his science. Smithson's scientific articles are famously difficult to decipher, but by concentrating on the historical, technological and scientific contexts within which he worked, a new understanding begins to grow and Smithson emerges as a much more interesting – and a much more impressive – figure than previously studies might have suggested.

To illustrate, I'll discuss Smithson's most famous paper on "Some Calamine." Published in 1803, this is what led to the mineral "Smithsonite" being named after him. Most people, if they know anything about Smithson's science, will have heard of this story. Exactly *why* he was interested in calamine, and why a mineral was named after him are generally not so clear, but that's what I'll discuss today.

Two basic facts mark our starting point: First, the name Calamine refers to rocks that are rich in zinc. That description will get nuanced as we go along, but this is the central point. Second, zinc is one of the crucial ingredients in making brass. This is important because while metallic copper is relatively easy to make and use, it is really too soft for many applications. When you add zinc to copper it forms brass, a metal that is much harder, stronger and more corrosion resistant than copper alone. Brass generally contains about 20 to 30 percent

zinc by weight, and it was produced in limited amounts in ancient times. It became more widely used during the Renaissance, and its use increased dramatically from that point forward.

Yet, when Elizabeth the first ascended to the English throne in 1559, England had no brass industry. All brass was imported, primarily from Sweden, putting England at a strategic disadvantage. The cost of the metal was a drain on the nation's economy, but more importantly, the lack of a domestic source was a military liability, since so many weapons of the time contained brass. In 1568 the Queen issued royal charters to two English companies, giving them specific monopolies; in return they were to develop the mineral and technical resources necessary to produce copper and brass. However, the initial brass produced was of very low quality. Finding deposits of consistent, high grade calamine in England proved difficult, and without a reliable source of zinc it was difficult to control the quality of the brass. One solution was to import zinc, but that was problematic because the ore was too heavy to ship, and Europeans did not yet know how to produce zinc ingots. Zinc has an unusually low boiling point, so if you just try to melt calamine in a furnace the metal will evaporate; literally disappearing in a cloud of white smoke.

Without a reliable source of zinc, it was difficult to control the quality of the brass.

In India, however, they had developed special "condensing" furnaces that could produce zinc ingots. In the late 1500s the English jump-started their brass industry with zinc that they brought from India – and later China - around the Cape of Good Hope, in wooden ships. It was a dangerous and expensive proposition. The imported zinc was only used to make the finest brass for special purposes. Lower quality brass, commonly called "Calamine Brass," continued to be made from the English calamine ores, and its quality continued to be variable.

The English looked everywhere for calamine deposits, including in the new world. Recent scholarship shows that the Jamestown colony was organized partly for this purpose. Much of the funding for Jamestown came from one of the British brass companies, and analysis of crucibles and samples found on the Jamestown site give strong evidence

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that minerals were being tested for their ability to produce brass. The Jamestown settlers never found any calamine deposits, but this demonstrates that brass and, more specifically, calamine is a historic English problem. When Smithson started to look into it two hundred years later he was working on an old and commercially important question - and his scientific colleagues would have been aware of this.

However, in Smithson's time the definition of calamine had changed. In the 1500s calamine had referred to any mineral containing zinc, but by Smithson's time one of the zinc ores, zinc sulfate, had been identified. The miners called it "Blend" and it was also known as "Blackjack." This was a very workable ore, rich in zinc and fairly easy to identify. The name "calcite" now referred to whatever zinc ore was left after the "blend" had been removed. This is what Smithson investigated, and the samples he tested were all from sites with links to brass production.

Smithson's analysis itself was elegant and convincing. Like Lavoisier, who was one of his idols, Smithson used a variety of acids and alkalis to break down and then reconstitute his samples. He also subjected them to analysis by fire. Smithson found that "calamine" - at least what was being called calamine in his day - was actually two separate minerals: zinc carbonate and zinc silicate, neither of which had been identified before.

Smithson's analysis appeared in the prestigious *Philosophical Transactions* and was widely praised. It was seen as a model for applying chemistry to mineralogy, very separate disciplines at this time. Although he didn't call attention to it, Smithson's paper also contained a technique that would have been of great practical benefit to miners and brass manufacturers.

I need to show you a bit about how chemical analysis was done in Smithson's time. Smithson used liquid acids and bases to analyze his samples, but he also analyzed them with flame - with a technique called "Blowpipe Analysis." Bear in mind that Bunsen burners did not exist in Smithson's time. His only flame was a simple lamp, but this was all he needed.

Everyone knows that a flame produces heat and light, but a flame also contains significant amounts of unburned fuel and if it is possible to get more oxygen inside it, the flame burns much hotter. That's what the blowpipe does. It's a curved metal tube that allows a person to insert their breath into a flame, so the un-used oxygen that they exhale causes the flame to burn much hotter. The blowpipe also allows the flame to be directed to a specific point, making it a powerful tool. Smithson was a master of the blowpipe and his articles contain numerous

references to effects seen during blowpipe analysis - the so-called "blue flame" being one of the most distinctive.

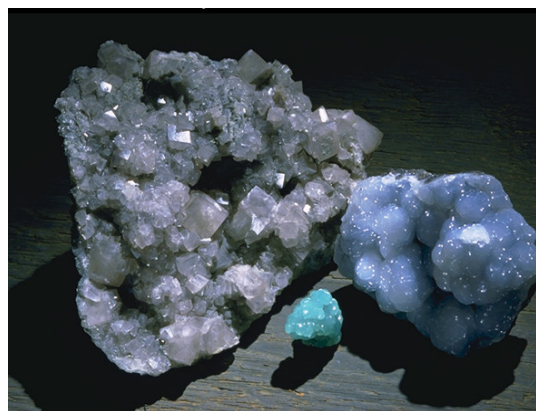
To examine a mineral with the blowpipe it was first necessary to crush the sample and find a way to hold it in the flame. The method of holding is a critical detail because of the extreme heat that can be generated. The most common method of holding the sample was to make a depression in a piece of charcoal and place the sample inside it. It takes a while to get the pipe, flame and sample all lined up, but when it happens, heat builds up rapidly.

To demonstrate the kind of temperatures that could be achieved, we tried the blowpipe on a piece of pure copper. The sample quickly begins to melt and as it does the metal's natural surface tension causes it to take the form of a sphere. When the flame is removed, the sphere rapidly cools. This shows what the blowpipe is capable of, as the melting point of copper is about 2,000 degrees Fahrenheit.

Blowpipe analysis worked by observation - you learned how each material reacted to the flame and compared the reaction of an unknown material against effects that had already been seen. Smithson was a master with the blowpipe, and he spent hundreds, possibly thousands, of hours practicing and memorizing its effects. Interestingly the blowpipe produces temperatures that are almost exactly those achieved in the brass-making furnaces. Thus blowpipe analysis could be used to model how a mineral would react in a furnace.

Throughout this period, brass was made in covered ceramic crucibles which were heated for long periods in a large furnace. The crucibles were packed with alternating layers of copper fragments, crushed calamine and charcoal. As the furnace was heated and the temperature within the crucible began to spike, the calamine would melt and release its

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*Smithsonite from Greece, Namibia, and New Mexico
Photo: Smithsonian Institution*

vaporized zinc within the covered crucible. There it came in contact with the copper, at which point the metals would bond and produce brass. It was a slow, fuel-intensive process, with the furnace typically kept at maximum heat for at least 10 hours. Calamine that didn't release its zinc wasted money and produced inferior brass. Smithson realized that since the blowpipe provides a model for the furnace, it could be used as a test to identify useable calamine.

The blowpipe analysis of zinc ores produces a dramatically different result than is seen with copper. The mineral melts, but instead of forming a ball, it simply flows together into an amorphous mass. In this molten state the ore begins to release its zinc, which evaporates, bonds with oxygen in the air and quickly drops back down on the charcoal as a fine white powder. The longer the flame is kept on the sample the more zinc is released, until finally the amount of white on the charcoal becomes an indicator of how much zinc the ore will release in the furnace.

A good zinc ore will produce a nice circle of white surrounding the mineral's molten remains. This was Smithson's test: if a blowpipe made a mineral produce this white halo (which Smithson called "the flower") the mineral could be counted on to release its zinc when heated in the crucible. If not, it should be avoided. In his calamine article Smithson applies this test to the two new minerals that he has identified: zinc carbonate and zinc silicate. When zinc carbonate is subjected to blowpipe analysis, it rapidly melts and the zinc vaporizes and forms a large, well defined flower and the mass at the center shows a characteristic shape. From the shape of the flower it is safe to say that zinc carbonate is a good mineral for making brass.

When zinc silicate is powdered and subjected to the heat of the blowpipe, the sample heats rapidly, but does not melt. Instead it decrepitates, becoming brittle and falling apart. The lack of a white powder on the charcoal shows that zinc silicate is a poor choice for making brass and should be avoided. Smithson's test provided a simple, powerful way to evaluate any zinc ore.

Smithson's paper was well received by his scientific colleagues and his blowpipe test was undoubtedly of great utility to miners and brass makers. But this hardly explains the extreme level of interest, especially French interest, which his paper generated.

In 1810 the influential *Journal des Mines* reprinted Smithson's article – or most of it – along with an extensive analysis of his work. Some of the best chemists in France had replicated Smithson's work step by step, checking all his results and trying out his findings on new samples. Their conclusion was that,

with the exception of one sample, which Smithson may not have heated long enough, all his findings were confirmed. From this point forward, Smithson's work was accepted as fact and his calamine article became the starting point for further research on zinc.

Now this did wonders for Smithson's scientific reputation, but why was there so much French interest in calamine? Surprisingly, the answer was in Belgium. Shortly after Smithson's paper appeared, a Belgian industrialist by the name of Dony convinced Napoleon to give him a monopoly to develop the rich calamine mines near Liege. It was an ambitious plan that also generated several important scientific papers, one of which was the 1810 reprint and evaluation of Smithson's calamine article. Dony invented a new type of zinc furnace, and the Belgian mines began producing pure zinc in unheard-of amounts.

Indeed, the promise of the Belgian zinc mines was so great that when Napoleon was finally defeated and the victorious countries sat down to re-draw Europe's boundaries, it was thought imprudent to let the mines fall under the control of a single nation. So in 1815, they were given special status as the "Neutral Territory of Moresnet." With a circumference of about 15 kilometers and only 246 original residents, it was a country dedicated to one purpose—the production of zinc. And it filled that role very well, supplying Europe with a seemingly inexhaustible supply of the new metal throughout most of the 19th century. Even its flag contained mining tools. It took time to develop uses for the new metal, and they experimented with a variety of products, my favorite being zinc cook-wear. But before long zinc flowerpots and architectural elements began showing up in European cities, and in the 1830s when they developed zinc rolling mills, the availability of sheet zinc began to transform the built environment of Europe, most notably the zinc roofs of Paris, where the distinctive color and texture of the metal has come to be identified with the very city itself.

Smithson died before much of this happened, but he would have certainly lived long enough to see it all beginning, and he was acknowledged in France during his lifetime for his important role in it all. So it is not surprising that in 1832, just three years after Smithson died, it was a *Frenchman* who proposed that Smithsonite be named in his honor.

That story of calamine is just one of the stories that are emerging from this project, and we really do feel that we're getting to understand Smithson and his science in a new and meaningful way. §

The Library of James Smithson, Gentleman- Scientist

Leslie K. Overstreet

*Curator of Natural-History Rare Books, Smithsonian Institution
Libraries*

As we all know from Heather Ewing's biography, James Macie, later Smithson, (ca.1765-1829) was a dedicated and ambitious scientist who pursued his studies in geology, mineralogy, and chemistry throughout his adult life, publishing over two dozen papers on the chemical analysis of minerals.

He never married or fathered children, and in his will he bequeathed his estate to a nephew, who himself died six years later, also without heir. Thus the contingent heir, the United States of America, in 1838 received all of Smithson's worldly goods along with £100,000 in gold bullion in order "to found in the city of Washington an institution for the increase and diffusion of knowledge."

The worldly goods included Smithson's correspondence, scientific manuscripts, and personal journals, but tragically almost all of them were destroyed by a fire in the central portion of the Smithsonian building in 1865. One of the few things that survived, in the western wing of the building, was his library.

The library consists of 115 titles, totaling about 250 individual volumes. It includes:

- 2 general titles: Chambers' *Cyclopaedia* and a long run of the *Monthly Review*;
- 21 travel books, a broad category including narratives, guidebooks, and museum catalogs;
- 19 history titles, many related to French politics & memoirs;
- 5 works of literature or philosophy;
- 7 household books: two cookbooks, a book on wills, and four auction catalogs (for collections of books and minerals); and finally
- 61 science titles, mainly on chemistry and mineralogy, including numerous off-prints.

The science titles include works by most of the leading

scientists of the time: the Abbé Haüy, Romé de l'Isle, La Métherie, Klaproth, Davy, Cronstedt, Bergman, Berzelius, and many others. Smithson took an active part in the prevailing method of scientific communication and exchange; 11 of the off-prints and six books in the library were inscribed to Smithson by their authors, and one of the 61 science titles is a stack of 13 copies of his own article "On the composition of zeolite" presumably left over from an original supply for his personal distribution.

At least 58 titles have Smithson's pencilled marks or annotations, including 43 of the 61 science titles, indicating his engagement with the texts. A handful have comments and remarks, sometimes extensive, but more typically he made simple marks of an "X" or a dash in the margin.

Smithson took an active part in the prevailing method of scientific communication and exchange.

Interestingly, of the 115 titles only 16 are bound in leather or vellum. These are typical 18th-century English bindings: full or half calf, with no gilt decorations or family arms on the boards. Twelve of the 16 date from before 1782, when Smithson entered Oxford at the age of 17, and my guess is that they came to him already bound, whether inherited from his mother (one of the cookbooks, for example), as a gift (from his relative George Keate, perhaps, two of whose books, inscribed to Keate, are in the library), or as second-hand purchases like the 1630 edition of Jean Rey's *Essays*, which is bound in limp vellum and bears the "Duplicate Withdrawal" stamp of the British Museum.

Of the 99 titles dated after 1782 – books published in Smithson's adult lifetime – only four are in a finished binding. All of the rest are in boards or wraps or have no cover at all: 19 are "in boards," a form half-way to a finished binding; and 76 are in flimsy paper wrappers or have no cover at all, including quite substantial volumes as well as works of a general or literary nature that frequently made an impressive leather-bound display in a gentleman's library.

It was still customary at this time for the purchaser to select and pay for a book's binding at the point of sale; paper wrappers were generally just a temporary protective cover while the bookseller awaited a buyer. In Smithson's library, it seems to have been his deliberate choice to leave his books as he bought them, unbound. It's unusual in general (and

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makes this collection a book-historian’s treasure) and extremely curious in Smithson’s case, given his claims to social status. With regard to the scientific portion of the collection, at least, it would seem that he viewed the books as a practical working library and was little concerned with appearance or display; it is far less explicable for the rest of the collection.

The books range in date from Rey’s *Essays* of 1630 to the book about wills in 1826, the year Smithson wrote out his own will. Looking at the numbers in terms of the stages of Smithson’s life provides an interesting chronology for the development of his library.

Without the time or space to go into specifics about these several stages of his life, I’ll note only that both in London and in his travels abroad he met and worked with most of the leading scientists of the day, collected in the field with colleagues, and participated in an extensive network of correspondence and exchange with fellow scientists... and yet the number of scientific publications in the collection is surprisingly low.

Heather Ewing’s study of the library brought to light the fact that many classic works in Smithson’s research fields are not present. Indeed, there are significant scientists – close colleagues of his – whose works are wholly lacking in the collection. We had to wonder: Is this Smithson’s entire library?

Sadly, there is no known documentation from his lifetime. The only known records were generated after his death: an inventory of Smithson’s belongings in Genoa compiled in 1829 by the British Consul, noting “several parcels of papers and 5 books” (unspecified), and a slightly fuller but still highly incomplete list made by Richard Rush, the U.S. representative sent to England to claim the inheritance in 1835. The only list available is one published by the Institution in 1880.

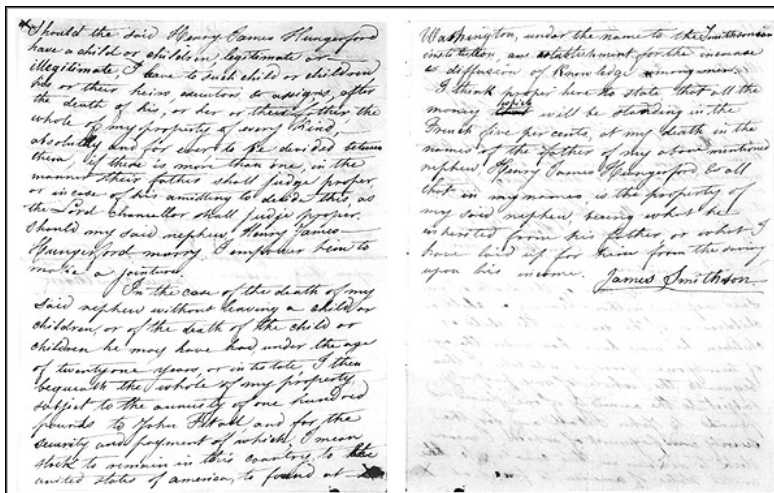
Rush’s list provides the first written evidence of a work that was part of the collection in 1835 but was not on the list of 1880 and is not currently in the library: William Hamilton’s *Letters concerning the northern coast of the county of Antrim*.

My investigations into this question focused on the fact that Smithson’s belongings had been held initially by the National Institute before being transferred to the Smithsonian itself once it came into being. With the help of a Catholic University library-school volunteer, I dredged through the National Institute library ledger at the Smithsonian Archives and found not only the 115 titles in the 1880 list but also 18 other titles that are not in that list or currently in the Smithsonian library.

Of those 18 titles, three (all off-prints) have been located in the Smithsonian’s libraries and archives. These items bear marks indicating that they had been diverted from the Smithson collection proper: a property stamp of the Institution’s divisional libraries, for example. A second stamp led me to another possibility, and we located eight more of the missing books at the Library of Congress, including the Hamilton book and a copy of Samuel Johnson’s *Dictionary* (1755). Presumably swept up by mistake as part of the Smithsonian Deposit transfers to LC in the late 1860s, these eight books all show evidence of being part of the Bequest (inscriptions to Smithson, “[Smithsonian]B[equest]” accession numbers that match the ledger entries, National Institute and Smithsonian property stamps, etc.).

I’m delighted to announce that the Library of Congress has magnanimously agreed to return the books to SI Libraries where they will be reunited with the rest of the Smithson collection.

That leaves seven books still missing, so the hunt continues...§



James Smithson’s will, including his bequest to “the United States of America” for the purpose of founding the Smithsonian Institution

Image: Smithsonian Institution

Letter from the Chair

Stephanie Hornbeck

Chair, Material Culture Forum Steering Committee

Conservator, National Museum of African Art

This issue of *Material Matters* is devoted to two events, “Dress as Identity,” held at the National Museum of the American Indian on November 1, 2007 and “The Lost Material World of James Smithson,” held at the Castle on January 30, 2008. As with all Forum events, both involved the cross-disciplinary collaboration of Smithsonian scholars over several months’ time.

“Dress as Identity” was organized and moderated by Nancy Pope, Curator, National Postal Museum (NPM). We appreciate the organization and planning of Steering Committee members Amelia Goerlitz (Fellowship Coordinator, SAAM) and April Parreco (Special Events and Membership Coordinator, NPM) who coordinated the event for the Material Culture Forum. We are grateful to the Smithsonian American Indian Employee Network (SAIEN) for their assistance in developing and executing the program. We were pleased to return to NMAI, after three years since our last Forum there, to present an event coinciding with American Indian Heritage Month (November). Forum attendees enjoyed Emil Her Many Horses’s tour of his exhibition “Identity by Design: Tradition, Change, and Celebration in Native Women’s Dresses,” as well as the topically wide-ranging presentations, which are all included in this newsletter.

“The Lost Material World of James Smithson” was organized

and moderated by Pam Henson, Director, Institutional History Division, Smithsonian Institution Archives. We thank April Parreco, Events Coordinator for the Material Culture Forum, who planned the event. Steering Committee member Christine Mullen Kreamer, Curator, National Museum of African Art, very ably stepped in to chair the event in my absence. The program included a booksigning with presenter Heather Ewing, author of *The Lost World of James Smithson: Science, Revolution, and the Birth of the Smithsonian* (Bloomsbury, 2007). Rick Stamm, Keeper of the Castle Collection, gamely gave five successive tours of the Smithson Crypt to Forum attendees. Attendees then filled the Castle Library to full capacity for the presentations. Thanks to Pam Henson, the presentation portion of this Forum was recorded and will be available via webcast.

We are pleased to present this issue of *Material Matters* as a written record of two fine Material Culture Forum programs. §

The Steering Committee greatly appreciates the generous contributions of the following individuals.

Their support enables the Forum to include scholars from outside the Smithsonian in our programs, as well as to maintain the high quality of programming characteristic of the Forum. Thank you to:

- **Richard Kurin**, Acting Undersecretary of History, Art, and Culture;
- **Cynthia Hoover**, Curator Emeritus, NMAH; and
- **Peter Jakab**, Curator, NASM

for your commitment to the Forum.

CFP: ARTEFACTS

Artefacts advances the understanding of the role that objects play in the history of science & technology.

Meeting to be held in Washington, D.C., October 5-7 2008

Topic: The Relationship between Art and Science/Technology, as Expressed through Artifact(s)

Possible themes include:

- How aesthetic considerations influenced scientific instruments,
- How design concepts affected invention,
- The ways in which scientific and technical developments entered into the practice and works of artists, or
- How assumptions or views on this relationship influenced museum practices of collecting and exhibition

Questions can be addressed to Barney Finn finnb@si.edu, Robert Bud robert.bud@sciencemuseum.org.uk, Helmuth Trischler h.trischler@deutsches-museum.de, or Martin Collins collinsm@si.edu.

- Proposed topics (with descriptions), should be submitted to Barney Finn by **May 31, 2008**.

PLAN TO ATTEND:

"A Hat of Many Colors: The Smithsonian Forum on Material Culture at Twenty" (1988-2008)

MAY 14, 2008

3:30 p.m. – 4:15 p.m. TOUR of "Ornament as Art," Renwick ground floor, with Jennifer Shaifer

4:30 p.m. – 6:00 p.m. PRESENTATIONS AND DISCUSSION, Renwick Grand Salon
Moderator: Mary Jo Arnoldi, NMNH

- ❖ "When Two Sevens Clash: Celebrating the Rastafari Millennium," Jake Homiak, NMNH
- ❖ "Celebration Delayed: The Hillotypes, Early Experiments in Color Photography," Michelle Delaney, NMAH
- ❖ "Celebrating Milestones at the Smithsonian," John Franklin, NMAAHC
- ❖ "The Smithsonian Forum on Material Culture Award for Distinguished Achievement," Peter Jakob, NASM

6:15 p.m. – 7:00 p.m. RECEPTION, 2nd Floor Gallery, open and free to all

7:00 p.m. – 8:30 p.m. DINNER, PRESENTATIONS, and DISCUSSION, Grand Salon
Moderator: Richard Kurin, Acting Under Secretary for History Art and Culture

- ❖ "The State of Museums," Ford Bell, President and CEO, American Association of Museums
- ❖ "Looking Back: The Smithsonian Forum on Material Culture," Cynthia Adams Hoover, Emeritus, NMAH
- ❖ "Looking Forward: A Preview of the Collection of the National Museum of African American History and Culture," Jacquelyn Serwer, Chief Curator, NMAAHC

Smithsonian Forum on Material Culture

Steering Committee, 2007-2008

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MATERIAL MATTERS

is published by the Smithsonian Forum on Material Culture. It is distributed free to all interested staff of the Smithsonian Institution, as well as to colleagues in other institutions and to members of the general public.

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