Golden Spider Silk

25 January – 5 June 2012

The only large textiles in the world to have been created from the silk of spiders will go on display at the V&A in January 2012.

The four metre long woven textile was made from the silk of more than a million female Golden Orb spiders collected in the highlands of Madagascar. The hand-woven brocaded textile is naturally golden in colour and took over four years to create. It will be shown together with a new golden cape, currently being woven and embroidered in Madagascar, which will go on public display for the very first time at the V&A.

There have been very few experiments with spider silk and no serious attempts to weave the silk since 1900. The earliest recorded weave using the silk of spiders dates from 1709, made by a Frenchman, Francois-Xavier Bon de Saint Hilaire, who successfully produced gloves and stockings and supposedly a full suit of clothes for King Louis XIV. Later, in the early nineteenth century, Raimondo de Termeyer, a Spaniard working in Italy, produced stockings for the Emperor Napoleon and a shawl for his first wife, Empress Josephine. The last known spider silk textile was created at the end of the 19th century for the Paris Exposition Universelle in 1900 but no examples remain.

The brocaded textile and the cape going on display at the V&A have been made by Simon Peers, an Englishman who has lived in Madagascar for more than 20 years and Nicholas Godley, an American who has also worked for many years in Madagascar. Inspired by 19th century accounts and illustrations, they started experimenting with spider silk in 2004 to see if they could revive this forgotten art.

To create the textiles, spiders are collected each morning and harnessed in specially conceived 'silking' contraptions. Trained handlers extract the silk from 24 spiders at a time. Unlike mulberry silk from silkworms, in which the pupa is killed in its cocoon, the spiders are returned to the wild at the end of each day. It has taken over 1 million spiders to provide the silk for the brocaded textile and 80 people five years to collect them.

After 'silking', the silk is taken on cones to the silk weaving workshop where skilled weavers have mastered the special tensile properties of the silk. In the Malagasy textile, each warp is made from 96 spun strands of spider silk and each brocading weft has 10 of those threads together – so 960 strands in total. In the cape, the main weave is also of 96 strands, the lining 48 strands and a large part of the embroidery is made using unspun 24 strand silk. On average, 23,000 spiders yield around 1 ounce of silk. It is a highly labour intensive undertaking, making these textiles extraordinarily rare and precious objects.

Background material explaining how the textiles are made, books describing earlier attempts to extract and use the silk of spiders, and a short film showing the processes involved in collecting the spiders, extracting the silk and weaving the textiles will be shown alongside the textiles.

The design of the large brocaded textile was inspired by 19th-century weavings that existed in the highlands of Madagascar amongst the aristocratic and royal caste of the Merina people. The motifs woven into the textile would have related to notions of power and status and add texture and capture the light of the monochromatic golden cloth. The new piece has been created in the form of a cape, decorated with a wealth of complex embroidered and appliquéd motifs celebrating the spider in myth and metaphor.

Simon Peers said: "*We were keen to show the spider silk textiles at the V&A, being the most appropriate place to premiere this work in Europe. The unique and historic costume and textile collections have been a constant source of inspiration over the years. As far as we know the V&A has never before shown anything made from spider silk, despite its diverse collections of art and decorative arts. So we are pleased and very proud to be adding a first to a museum with such a rich, long and illustrious history, and would like to think that we in turn can be an inspiration to others*."

- ENDS -

Notes to Editors

- Golden Spider Silk will be shown in the V&A's Studio Gallery, 25 January – 5 June 2012
- Admission FREE
- The Spider Silk textile was first shown at the Natural History Museum in New York in 2009 (where it broke all records for visitor numbers to a single exhibit) and is currently on display as part of the new African gallery at the Art Institute of Chicago (until 31 October 2011).

History of Spider Silk

- In 532, Emperor Justinian finally lifted the veil on China's long held secret concerning the origin of silk. Once Justinian established that it was drawn from the cocoon of a moth, the spider was eclipsed as a possible source of this precious fabric, and thoughts of collecting webs or raising spiders was relegated to the realms of fantasy.
- Francois-Xavier Bon de Saint Hilaire was the first person to consider substituting the silk of the silkworm with that of the spider. He put this forward in a paper published in Montpellier in 1710.
- That year Rene Antoine Ferchault de Reamur was asked by the Academie des Sciences in Paris to investigate Bon's claims to see if it was commercially viable. After much research he found it would not work successfully with local spiders but suggested that those from South America might yield a more useful silk. One of the problems that faced Bon was how to produce a single continuous strand of silk from the spider's cocoon, in the same way that silk worm cocoons can produce one long filament. It was impossible to do this with the spider cocoon because a glue prevents the cocoon from unwinding freely.
- 1710: Bon's dissertation was published in the Philosophical Transactions of the Royal Society in London
- Satirist Jonathan Swift mocked the Royal Society's findings in *Gulliver's Travels* (1726) where spiders produced coloured silks after being fed flies fed on dye.
- From 1761, the Spanish Jesuit missionary Raimondo de Termeyer worked in Paraguay perfecting a way of taking the spider silk thread directly from the spinnerets in the abdomen of the female spider by placing the spider in stocks.
- Working in Italy From the 1770's to the early nineteenth century Termeyer continued his work with spider silk in Faenza and Milan, and published his *Opusculi Scientifici d'Entomologia* in 1807. The most comprehensive study ever written on the extraction and transformation of the silk of spiders.
- 1830: Daniel Rolt received a silver medal from the Society of Arts in London for reeling the silk of spiders with the use of a steam powered engine.
- Dr Auguste Vinson from the French island of La Reunion attended the coronation of King Radama II of Madagascar in 1861. Whilst in Madagascar he studied the spiders of that country and was the first to give the scientific names of *Nephila Madagascarienis* to

Madagascar's golden orb spider, also suggesting that the silk of that spider might be of commercial use and value.

- 1863: Dr Burt G Wilder experimented with spider silk in South Carolina. In 1866, he translated Termeyer's *Researches and experiments upon silk from spiders* into English.
- Jacob Paul Camboué was a French Jesuit missionary who lived and worked in Madagascar for much of his life. Inspired by Vinson's writings he was drawn to the wonderful properties of the spider's silk and began experimenting to extract the silk directly from the spider in the 1880s and 1890s.
- Building on the efforts of Camboué, Mr Nogué was the driving force behind French Colonial efforts to extract and harvest spider silk. The administration was looking for new and unusual undertakings to set them apart from other Francophone colonies. Nogué succeeded in creating a hand-powered machine that could perform in a similar way to Termeyer's contraption. All with no harm to the spider. A technical college was founded in the capital Antananarivo and people were put to work to collect and 'silk' spiders.
- The silk made by Nogué was transformed into bed hangings. The bed was exhibited in Paris in 1900 at the Exposition Universelle. The silk has not survived.

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