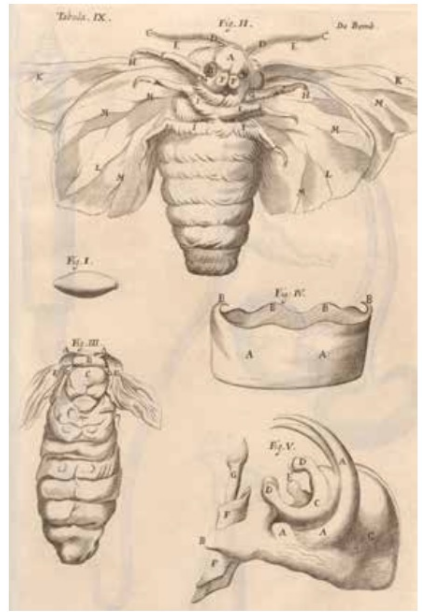
The luxury, beauty, and feel of silk have driven interest in the Queen of Fabrics for millennia.

From "The European Insects" by Maria Sibylla Merian, published posthumously as an expanded version in 1730, under the title *Caterpillars, Their Wondrous Transformation and Peculiar Nourishment from Flowers*.

Domesticated silk moth (*Bombyx mori*) emerging from its cocoon. Once metamorphosis is complete, after around ten days inside the cocoon, the silk moth vomits a fluid containing an enzyme called cocoonase, which specifically breaks down the sericin protein in silk, making the cocoon soft enough for the moth to escape.

Head of the domesticated silk moth, (*Bombyx mori*) larva, showing its simple eyes (dark spots, left and right); mouthparts (center); and of the adult form after metamorphosis, with compound eyes and large feathery antennae, but no mouth parts.

Insect anatomy. Seventeenth-century drawings of the anatomy of a silkworm and silk moth as observed under the microscope by the Italian physician and microscopist Marcello Malpighi (1628–1694). These plates are from a volume of Malpighi's *Opera omnia* (1686).



(Bottom right page) "The Manner of Feeding Silkworms," 1753. A silkworm farm, showing the interior of the rearing house, or *Magnangerie,* and the collection of mulberry leaves on which the silkworms were fed.

These golden-colored filigree cocoons of Jan Helfer's *Cricula trifenestrata* were collected in the 1880s and excited much attention in Wardle's exhibits. The filigree effect occurs because multiple larvae often spin their cocoons in close proximity, creating a silken network. At first silvery, the color changes to metallic yellow gold in the space of a few days.

Zain al-Din's illustration of the *Antheraea paphia,* or tasar silk moth, including a male and female, alongside a tasar silkworm, and a cocoon that hangs from its food tree like a fruit. Calcutta, 1777.

In the seventeenth century, Queen Anne of Denmark commissioned the building of a silkworm house at Oatlands Palace. She is portrayed wearing a dress made of mulberry silk embroidered with *Bombyx mori* larvae and mulberry leaf patterns.

Maria Sybilla Merian colored the illustrations of the beautiful shells Georg Eberhard Rumpf had collected in Ambon, in order to fund the publication of her 1705 magnum opus, *Metamorphosis insectorum Surinamensium*.

George Emory Goodfellow's medical office was on the second floor of the Crystal Palace Saloon in Tombstone: a town referred to as "the condensation of wickedness," where shootouts were all too common.

The weaving of a Banarasi Sari which are most frequently made from mulberry silk, but are also woven from tasar and other wild silk threads. Varanasi, India.

A woman weighs a batch of silk moth cocoons in order to determine their sex, circa 1955.

A string of diseased silkworm cocoons used by Louis Pasteur, 1865–1870. Pasteur demonstrated the cause of the silkworms' illness to be a contagious infection. It helped him build a robust body of evidence for contagion from which the study of human diseases benefited.

Silkworm cocoons arranged on trays to be dried in the sun in a Tamil Nadu village, India, 1980.

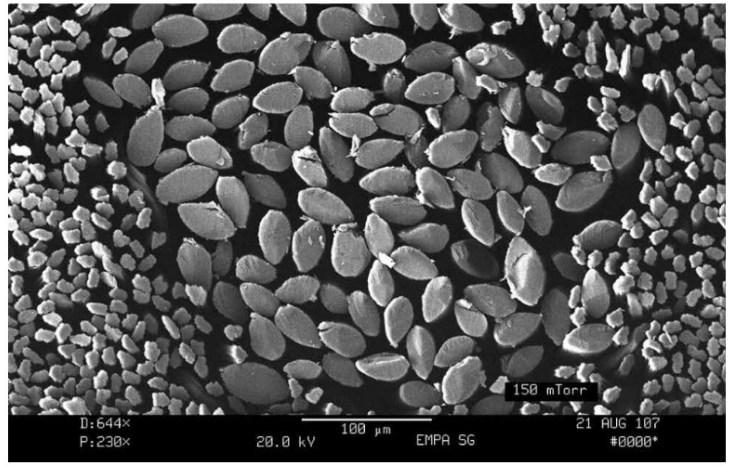
Anatomy of the *Pinna nobilis*, showing the position of the "foot" muscle attached to its silken byssus "beard" as it would appear if a living shell were pried open.

Pinna nobilis are long-lived and can grow to over one meter in height. They play a key ecological role, filtering water and providing a surface on which algae and benthic invertebrates make their home.

Golden byssus threads where they join the dark "foot" of the *Pinna nobilis*, a muscle attachment toward the bottom of the shell that firmly anchors it to the sea floor.

Dead *Pinna nobilis* on the Mediterranean Sea floor. In January 2021 they were listed as "critically endangered" on the International Union for Conservation of Nature's Red List of Threatened Species. Once they die, their silken anchors disintegrate and the shells collapse.

A "beard" of byssus fiber, harvested in Sardinia in the 1920s, still attached to the withered muscle that would have anchored it inside the *Pinna nobilis*' shell.

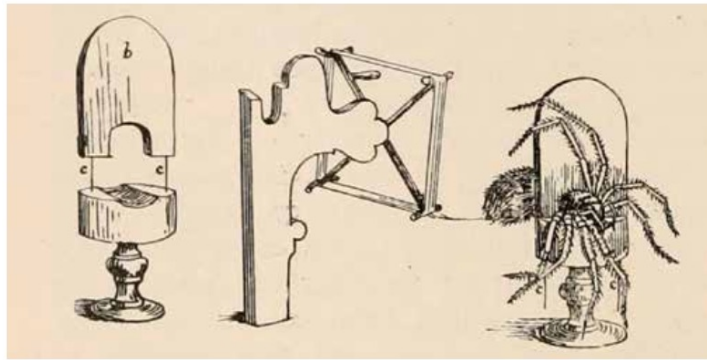


In cross section, the byssus silk fibers of the *Pinna nobilis* appear elliptical, a shape that is not seen in any other natural fiber.

Sometime between 97 and 110 million years ago, in the Hukawng Valley, Myanmar, this male parasitic wasp flew into an orb-weaver spider's web and would have become its prey, had both animals not become trapped in resin. Fifteen strands of the spider's silk were also present inside this piece of amber.

This image of a bird-eating spider illustrates behaviors observed by Merian in Suriname, informed by conversations with local people. Published in *Metamorphosis insectorum Surinamensium* in 1705, it was criticized by men of science who doubted her records, disbelieving that predation of a bird by a spider could occur in nature.

N. inaurata madagascariensis, the red-legged golden orb-weaver spider of Madagascar, produces webs over one meter in diameter, formed of golden-yellow threads capable of being woven.



Termeyer's eighteenth-century apparatus for reeling silk directly from the bodies of spiders.

Colored scanning electron micrograph of an orb-weaver spider's silk gland spigots through which silk is being secreted. Spigots protrude from spiders' spinnerets, and are like tiny ducts of different sizes and shapes. Each spigot allies with only one specific silk gland. From each emerges a unique mixture of viscous silk protein, specific to the silk gland from which it is secreted (magnification: x470).

In May 1941, Crete was the site of a paratrooper attack by Germany's 1st Parachute Regiment. Some of the 2,000 *Bombyx mori* silk parachutes were found in the rubble after the attacks, this one hooked onto an awning in Heraklion's Lions Square. They would eventually be refashioned into dresses, handkerchiefs, and scarves after WWII.

A member of the Women's Auxiliary Air Force uses a Singer sewing machine to stitch a bundle of parachute silk, circa 1942.