

Biography: Maria Sibylla Merian (1647-1717)

Maria Sibylla Merian was a prominent German naturalist, an excellent artist - a painter, engraver and publisher. She is considered as one of the first entomologists, studying the metamorphosis of insects. She described a cycles of 186 species of insects and was a pioneer of scientific research expeditions. Her trip to Surinam (1699-1701) led to the discovery of many unknown species of plants and animals, and her classification of the butterflies and moths is in force to this day. She gave the scientific names to many plants. Her paintings of plants, insects, spiders, amphibians and reptiles until today perceived as masterpieces, are collectible and admired around the world. Her most important work, *Insectorum Surinamensium Metamorphosis* (1705) is considered as one of the finest natural history books, ever published. It brought her worldwide fame among naturalists and collectors of art. The most valuable part of the publication - collections and watercolors were purchased by the Tsar of Russia and belong to the Academy of Sciences in St. Petersburg, Two further collections are placed in London, in the Royal Library at Windsor Castle and at the British Museum. Biologist Kay Etheridge in his article of 2011, said: *Maria Sibylla Merian can be considered as the first environmentalist in the world, as she documented interactions between different species, highlighting what we call food chain.*



Maria Sibylla Merian was born on April 2, 1647 in the German city Frankfurt am Main, in the family of artists and engravers. Her father, Matthäus (Mathias) Elder Merian was a Swiss engraver, publisher, artist and topographer (the author of: *Theatrum Europaeum and Topographien*). A year after the death of his first wife, Mary Magdalene, in 1645, he remarried to Catherine Johanna Sibylla Heim (mother of Maria Sibylla).

When Maria was born her father was 54 years old and was known throughout Europe in engravings, depicting urban landscapes and wildlife, scientific books and illustrated editions of *The Great Expeditions*. He died when Mary was only three years. Her mother quickly remarried (1651) for an excellent Dutch flowers' painter Jacob Marrel (1614-1681), a widower, having three young children. He was painting still lifes, dealt with copperplate engravings and art trade. It is thanks stepfather, who recognized her talent, Maria explored the secrets of drawing, the use of watercolors, painting still lifes and chalcography.

His disciple, Abraham Mignon (1640-1679) also supported her enthusiasm and trained her in the art of painting and engraving. Pedantic mother taught Mary and her half-sister homework, embroidery, management and care

of children. Her half-brothers Mathias Younger and Caspar Merian who were engravers, publishers, artists-painters as the men could travel around the world in order to learn science, and in 1653, they made illustrations to the *Historia Naturalis de Insectis* Johna Jonstona). Maria stayed at home, however, many unique experiences have provided her collections of reproduction of paintings and books from the family library, belonging to her father and stepfather.

From an early age she was fascinated by the world of insects and plants. Her interests were unusual, because people at that time still believed that insects were created from dirt and mud. Her observations started in 1660 in Frankfurt. At 13, she started to study the metamorphosis of insects, for example, the development of silkworms fed with the leaves of mulberry and lettuce.

In the preface to *Metamorphosis Insectorum Surinamensium* she writes: *From my youth, study of insects occupied me constantly. At first they were silkworms in my hometown, Frankfurt am Main, then I watched much more beautiful butterflies and moths that hatched from other type of larvae. This encouraged me to collect all the caterpillars that I could find, in order to study their metamorphosis and develop my painting*

skills, so that I could sketch them live and represent the true color.

On May 16, 1665, at the age of 18, Maria married older 10 years than she painter, Johann Andreas Graff, another stepfather's student, who later specialized in the works of painting and engraving of architectural objects. Until 1670, the couple lived in Frankfurt, where in 1668, Maria gave birth to their first daughter, Johanna Helena. Soon after, they moved to Nuremberg, the hometown of Graff. There, Maria Sibylla continued the study the life cycle of butterflies. Conducted observations of insects, finding and

sketching of caterpillars in the garden, bringing them to her laboratory to feed them with the appropriate plant leaves, record their behavior and to sketch and paint in various stages of development. She reported a variety of details of metamorphosis and illustrated their steps in his sketchbook and plants, which fed on caterpillars. On the basis of this sketchbook, her first book *Blumenbuch*, containing detailed images of plants was edited (1675). She also painted on parchment and on linen canvas, embroidered and engraved, and taught a group of women, one of them was the daughter of publisher-engraver Clara Regina Imhoff.

Joachim Sandrart - painter - then wrote about her: *Not only with talent she created watercolors and oil paintings, linen canvas paintings and engravings, and not only managed to give the shape and color of flowers, plants and insects, but also was a shrewd observer of the habits of caterpillars, flies, spiders, she was the right woman, a good housekeeper.*

Her first book, which was published under the name "Maria Sibylla Graffin, the daughter of Mathias Merian elder" was published by her husband. It was a three-volume (the parts were published in the years 1675, 1677 and 1680) collection of engravings, without text, *Blumenbuch*, showing single flowers and garlands, bunchets and bouquets. Flowers and added to them sometimes caterpillars, butterflies, spiders, and other creatures are reproduced beautifully and accurately. Each piece contained 12 plates in quarto format.

In 1678 Maria gave birth to a second daughter, Dorothea Maria. At the same time she continued to research on metamorphosis of insects, resulting in publishing (1679) her first scientific book *Der wunderbare Raupen Verwandlung sonderbar Blumen und - Nahrung* (*Miraculous transformation of caterpillars and their unique plant-based diet*). The first part of the book, *Caterpillar* contained 50 tables, all engraved and etched by her with the description of insects, mostly moths, butterflies, and their larvae. Second part was published in Frankfurt in 1683.

On each of the hundred copperplates (each containing 50 tables) Maria presented one or more species of insects painted from nature, in various stages of development, including plants, which the insects were nourish. The central theme of each drawing, there was one plant, usually in a flourishing condition and sometimes fruiting. At each plant, could be seen the name in German and Latin. Often, Maria added colors herself. The book, which was colorized by the author was a new phenomenon at that time. Nuremberg luminary Arnold Chistopher named her work as "a magnificent" ...

In 1681, her stepfather Marrel died, and Maria Sybilla moved from Nuremberg to Frankfurt to help her mother. Marriage of Graffs returned to that city to engage the family and property matters. Jacob Marrel left the house, money, a huge library and art gallery. The bequest was, however, burdened with debts. But, in 1683 the second part of Maria book *Caterpillar* containing another 50 tables and accompanying text appeared. It was published by Johann Andreas in Frankfur. Maria continued her observations, learned to paint a group of girls from Frankfurt and wrote the letters to friend Dorothea Maria Auerin, the painter in Nuremberg. At that time, however, marital problems appeared.

In the same year (1685), Maria Sibylla broke up with her husband, and with her mother and two daughters moved to the property Wieuwerd in the Netherlands, hoping for admission to the Community of Labadysts (radical protestant community in the Dutch province of Friesland),

whose member since 1677 was her widowed brother Casper. Wieuwert Castle was owned by Cornelis van Sommelsdijk, governor of Suriname. Thanks to him Maria Sibylla was able to go to Suriname, where he became acquainted with the flora and fauna of tropical South America.

In 1691, Maria and her daughter left the community of Labadysts and moved to Amsterdam, where they quickly gained a reputation among many owners of showrooms in the city, as a painters of plants and animals, both exotic and native. Here, in 1692, her eldest daughter Johanna Helena married Jacob Hendrik Herolt, who was also a former member of the community of Labadysts in Wieuwert and traded with Suriname. Maria has conducted research in entomology, bred the caterpillars from the vicinity of Amsterdam and expanded her observations on ants. She returned to teaching and painting, from which derived income during the Nuremberg and Frankfurt time. Her watercolor were constantly earning buyers.

In 1699, at the age of 52, in spite of friends and family, who advised against the trip, she made her will and boarded the ship to Surinam (Dutch colony in America) with her younger daughter Dorothe. Purpose of the trip was to study the development cycles of tropical insects and painting of exotic insects and plants. Trip was facilitated by the loan granted by the city of Amsterdam. As noted by Davis, this trip was not only unusual for a woman in her position, but it was unprecedented for any European naturalist

After arriving in the capital of Suriname, Maria Sibylla and her daughter Dorothe, lived in the house in Paramaribo. During his stay in South America Maria led observations not only in her own garden, but also set off a forest full of birds, just outside Paramaribo. She traveled around the Dutch colony, sketching local animals and plants. She visited plantations along the Suriname River in search of new caterpillars. She started with a 40-mile canoe expedition up the river to the plantation of Providence in April 1700, together with her daughter she made a lot of trips to the hinterland, during which drew up

numerous descriptions, drawings and watercolors among others the metamorphosis of insects. In Suriname she worked on the collection, observations and painting more than 90 species of animals and 60 or more species of plants.

In Suriname she stayed no more than 21 months, because became seriously ill, possibly suffering from yellow fever (other sources say that malaria). In June 1701, together with her daughter left Suriname and returned to Amsterdam, bringing images on parchment and collection of specimens (butterflies preserved in brandy, a bottles of crocodiles and snakes, lizards, eggs, root crops, pupae, and boxes of desiccated insects), which she intended to sell.

Gathered in Suriname huge documentation allowed Maria Sibylla, publish in Amsterdam in 1705 her most important work: *Metamorphosis Insectorum Surinamensium*, considered by most scholars as her magnum opus. Beautiful, richly illustrated book of 60 plates was printed on transparencies in Latin and Dutch. It brought her international fame among naturalists and collectors of art. Indeed, it is considered as one of the finest natural history books, ever published. It is clear, has a straightforward writing style, its five editions were issued with original tables, the last in France in 1771. However, the high price of the book caused that few people bought it, and Maria Sibylla had to keep up with the teaching of painting, sales of paint supplies and medicines, which are made of plants and animals. In vain also sought sufficient number of subscribers for any edition of this book in German and English.

Even in the last years of her life, Maria Merian was working on a third book about the European *Caterpillar book* that her daughter Dorothea published

after the death of Mary in 1717r. Nevertheless Maria managed to translate the first two volumes of books about caterpillars into Dutch and publish them in the 1713 / 1714. Actively worked until 1715, when she had suffered a stroke. After a long illness, died at his home in Amsterdam on January, 13, 1717 at the age of 70. The register of death was listed at her as poor,

but she still had its own grave (which no longer exists). Unfortunately, she not reached the second edition *Insectorum Surinamensium*, which was published in Amsterdam in 1719.

Maria Sibylla Merian's during the lifetime became famous as a great naturalist and artist. When she died, her watercolors and books were widely known in Europe. Just a few weeks before her death, Peter the Great, tsar of Russia ordered his doctor Robert Erskine, to buy original drawings of Merian (all her original works were purchased). When the tsar died, they were exhibited in the museum of Russia, where they remain to this day.

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Biography: Maria Sibylla Merian is based, in part on **Historical Background: Sibylla Merian** written by Timo Engels.

Biography: Maria Sibylla Merian was written by Marlena Zielińska with the support of the European Commission (project 518094-LLP-1-2011-1-GR-COMENIUS-CMP) and Polish Association of Science Teachers, Poland. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



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