

Background Sibylla Merian

Sybilla Merian was born in an epoch that was recognized as an emergence in a new era, not only by today's historians but also by its contemporaries. They saw themselves surrounded by lively ideas, new knowledge and upheavals in many areas.

The social change in the early modern times, especially the Baroque led to a large interest in the exotic, the miraculous and, in the literal sense the remarkable. Besides multiple causes, it was not least of religious reason. One assumed to recognize the principles of creation in every single piece of it. This could be expressed with the term of the Macrocosm in the Microcosm (Macrocosmos in Microcosmo).

Consequently a large number of so called 'cabinets of wonder' or 'cabinets of curiosities' were formed, that are to some extent the ancestors of modern museums. They differ from the medieval treasuries in that they contain objects of little financial value but high appreciation. Initially precious metals, jewels, pearls, etc. had been collected; pieces that have a value besides their processed form. However, since the Renaissance pieces of art, stuffed animals, machines, dried plants, optical apparatuses, etc. (that did not necessarily have a material value) were collected and displayed in the cabinets. Those cabinets can be found with different characteristics. These were prestigious cabinets of the nobility (e.g. the Medici), but also collections of members of the republic of letters, like those of the Jesuit Athanasius Kircher or the Dane Ole Worm. Moreover there were also collections for educational purposes, such as those of the Franckesche Stiftungen in Halle (Germany).¹

Some attention must be paid to the collection of the before mentioned Athanasius Kircher. By the middle of the 17th century he had estab-

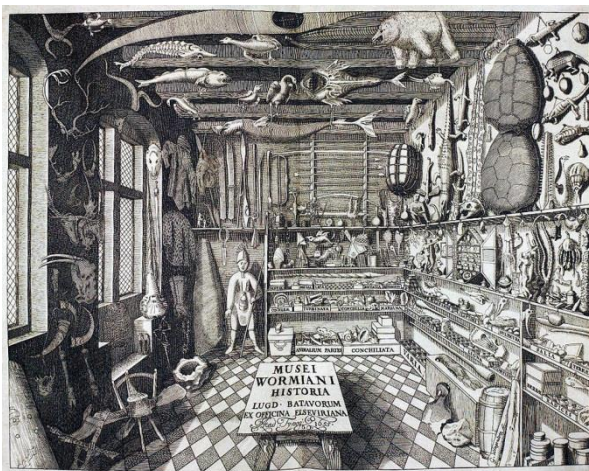


Figure 1: Cabinet of Ole Worm. Source: http://commons.wikimedia.org/wiki/File:Musei_Wormiani_Historia.jpg, accessed: 06-03-2013

lished the largest and best-known cabinet of wonders of the time. It was the place to go for the nobility and for scholars on a trip to Rome.

With his position at the Collegium Romanum, the famous Jesuit college, Kircher was in the center of one of the most powerful

scientific and political networks in the world. With its claim for active Christianization, the church sent friars as missionaries all over the known world and even to the not yet discovered parts of it.

Especially the Jesuits, who took themselves as the spearhead of the counterreformation, were active not only in Europe but also in Africa, China and the Americas. Information about all those countries, their cultural, scientific and technological level, and of course the flora and fauna were sent to Rome. Beside written reports they sent porcelain, stuffed animals, plants or at least illustrations of them. All these artifacts and information, insofar it was of any interest for scholars, accumulated on the desk of Athanasius Kircher, who wrote (and published) about it and included it in his cabinet. The fascination about China in the Baroque, for example, was triggered not at least by Kirchers 'China Illustrata'. This book contains a colorful description of China and its culture. From a modern point of view, the picture was a quite distorted one. As Kircher had only written rec-



Figure 2 Sibylla Merian on the 500 DM German banknote. Source: http://commons.wikimedia.org/wiki/File:Merian_500DM.jpg, accessed: 06-03-2013

¹ See Grote, *Macrocosmos in Microcosmo*.

ords and some artifacts, this does not come as a surprise.²

Often, artifacts passed through many hands before they were integrated in a collection. This opened the door for errors and frauds that may look quite bizarre from a modern viewpoint. For example, the bones of the Narwhal were identified as the horns of the unicorn. Frequently they were displayed, mounted on a stuffed pony. The skeletons of mermaids could be found as well as bones from giants (fossil bones). Another error concerned the paradise bird. For quite a long time it was assumed, that it had no feet. European collectors were fooled by the custom of the indigenous hunters to cut off the feet before stuffing the body.³

Besides dead animals and plants, living plants were of great interest. In the late 17th century there was a run on tulips in the Netherland. Even for wealthy persons, it was easy to run into bankruptcy, developing an obsession for tulips.⁴

The investigation and description of insects

was a fairly new area for natural philosophers. The first books dealing solely with insects were published not before the end of the 16th century. Very few books gained as much success as these from Sibylla Merian.

One of the most recognized books about insects had many fathers. In the late 16th century the English physician Thomas Moffet (also Mouffet and Muffet) compiled a book on insects using several unpublished sources. Yet he could not get it published. It appeared 30 years after his death, published by the famous physician Théodore de Mayerne. On the front page of the book with the title ‘Theatrum Insectorum’ (Theater of Insects) one can also find the names of Conrad Gesner, Edward Wotton, and Thomas Penny. Gesner and Wotton died already in the middle of the 16th century. This means that the work of 1634 contained information that was gained some generations earlier. This can be taken as indication that only very few people were engaged in observing insects, especially holometabolic insects. By the middle of the 17th century one can find an increasing number of published works on insects.

To give an example, Jan Swammerdam, a Dutch scholar, wrote in 1669 his ‘Historia Insectorum Generalis’ (General History of Insects) about the transformation of insects from the egg to the grub and finally the grown insect. He was one of the first to use optical equipment like magnifying glasses and microscopes for observation. The metamorphosis of insects was a topic of Johannes Goedaert as well as Swammerdam. Goedaert published a book solely dedicated to this transformation, the ‘Metamorphosis Et Historia Naturalis Insectorum’ (Metamorphosis and Natural History of Insects), which was published in 1662. But it was Francesco Redi who was the first to show, that there was no such thing as abiogenesis, the creation of insects out of nothing. Using experiments with covered and uncovered meat, he showed, that insects only appeared where insects before laid their eggs.

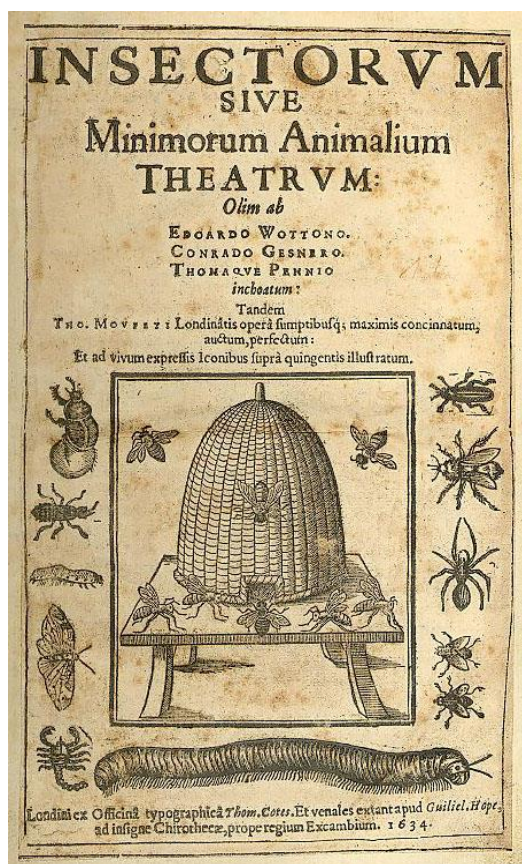


Figure 2: Titlepage of Moffets work. Source: http://en.wikipedia.org/wiki/File:Theater_of_Insects.jpg, accessed: 06-03-2013

² See Findlen, *Athanasius Kircher*.

³ Findlen, „Natural history“, 456.

⁴ Kerner, *Seidenraupe, Dschungelblüte*.

Without doubt, Sibylla Merian was not the first to observe the metamorphosis of insects, but

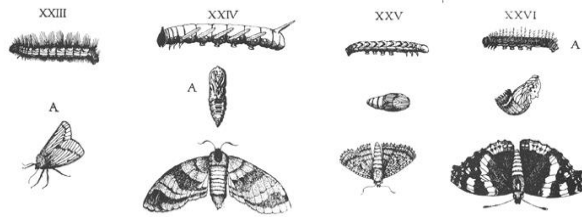


Figure 4: Plate from Goedaert's Metamorphosis. Source: http://en.wikipedia.org/wiki/File:Geodart_Metamorphosis_1663.png, accessed: 06-03-2013

this cannot diminish her accomplishments. She was one of the first to observe the importance of specific host plants for the insects. Perhaps even more important is the extremely high quality of her illustrations and associated with this, the accuracy of her observations. Wherever possible she painted from the living insects and did not limit herself to the dead ones in collections.

The works of Sibylla Merian were received in a very positive way by the republic of letters. As the historian Londa Schiebinger points out, there were also very few resentments due to her female gender up to the 19th century. Not by chance most of the abovementioned scholars were physicians. The study of medicine was the only academic discipline, providing an understanding of nature and natural history.

If this is the case, the question arises, how an untitled woman, born and raised in the household of a craftsman and artisan made her way into natural history. The answer is, for sure, multi-faceted. Two aspects seem to be of great importance.

On the one hand, caterpillars, silkworms to be precise, were economically interesting. From the knowledge of the origin of silk the wish for European silkworm-cultivation emerged. One can assume that Sibylla Merian visited such a breeding station. Later she was always interested in an alternative to the silkworm.⁵

On the other hand she was the daughter of a famous engraver and got a professional training at the workshop of her stepfather, who also worked as a painter and engraver. Engravers and illustrators were sought after in the 17th century for the production of books. Yet in these times, painting from nature and not from a description was quite important. Therefore

careful observation and painting from nature was part of her training.

Often the engravers were not only contractors but publishers on their own risk. This often led to alterations in the books of scholars to match the assumed taste of the time.⁶

Merians father for example published a book on flowers. The same did the daughter some decades later. Those books did not only serve as textbooks but also for the enjoyment of the readers. Sibylla Merians so called Blumenbuch (Book on Flowers) was meant mainly as a stitch chart for upper class women.⁷

One can conclude the Sibylla Merian had a good basis to start with the investigation of plants and insects. Especially Amsterdam as the place of residence in her late years was close to ideal. The Netherlands were one of the leading maritime powers of the time and one of the most important trading points for goods from the Americas. Therefore it was possible for her to go to Surinam the Dutch colony in America. Studying the butterflies and their metamorphosis was the main reason for this journey, on which she was accompanied by one of her grown up daughters.

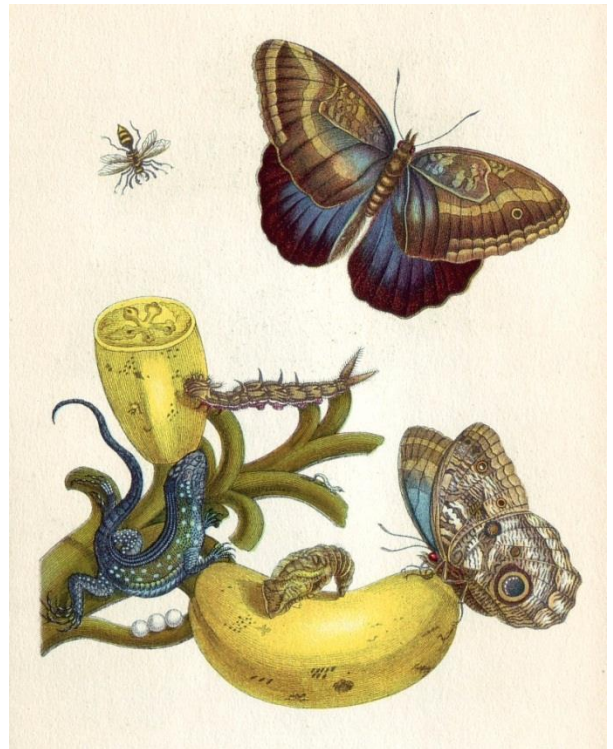


Figure 5: Plate 23 from Merians *Metamorphosis insectorum Surinamensium*. Source: http://commons.wikimedia.org/wiki/File:Merian_Metamorphosis_XXIII.jpg, accessed:06-03-2013

⁵ Kerner, *Seidenraupe, Dschungelblüte*.

⁶ Johns, „Coffeehouses and print shops“.

⁷ Kerner, *Seidenraupe, Dschungelblüte*.

Goods from other continents did not only satisfy the curiosity of the time, but also were economically important. The search for cures for the new diseases that appeared in the colonies was of great importance for the colonial empires. Those plants could also generate great profit in the old world. As example may serve the cacao, that came as a medical tonic to Europe and then turned into a beverage. Naturally the indigenous population was not eager to cooperate with their suppressors. They could be pressed to work, but not to reveal their knowledge.

Sibylla Merian was one of the few naturalists who made friends with parts of the indigenous population.⁸

Later she criticized the repression of the natural population by their colonial masters.⁹ It should be mentioned, that the appetite for new knowledge had its limits. Some knowledge was not suitable for transfer in the eyes of most of the authors. The native people could prevent and abort pregnancies for example, using some plants. One of the very few reports about this was written by Sibylla Merian. Although she was not the only one to report this, the knowledge was not transferred to Europe. One can conclude that the Baroque was a time where it was possible for women to participate in science, mostly as passive consumers, though.

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⁸ Schiebinger, „Scientific Exchange in the Eighteenth-Century Atlantic World“; Schiebinger, „West Indian Abortifacients and the Maikin of Ignorance“.

⁹ Schiebinger, „West Indian Abortifacients and the Maikin of Ignorance“, 150.

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