

Beauty in a box

- a story of how a butterfly helped create the theory of evolution



"Among them were three Morphos, those splendid large metallic-blue butterflies, alternately in deep shade and bright sunshine, they present one of the most striking sights the insect world can produce."

"The shining blue Papilio ulysses was one of the princes of the tribe. From its large size, its tailed wings and brilliant colour, is one of the most tropical-looking insects the naturalist can gaze upon."

"But naturalists are now beginning to look beyond this, and to see that there must be some other principle regulating the infinitely varied forms of animal life."

- A.R. Wallace

At first glance, most people are quickly mesmerized by the beauty of this object. This wooden box displays preserved specimens of 8 butterfly species brought together from all over the world here in Göttingen. Already native butterflies fascinate us since then with their patterns and colors, when they flutter in summer in our gardens from flower to flower.

If you look at the wings under a stereomicroscope, you can see that they are covered with very small scales, which are arranged like roof tiles to create the patterns. Most of the bright colors are not produced by dyes in the scales, but by various reflections of light. For butterflies, these patterns and colorations can serve as warning signal, for mimicry, or for intraspecific communication.

In the 19th century, many explorers were drawn to the tropics and returned with collections of animals. One of them was Alfred Russel Wallace, who travelled the Amazon and Southeast Asia. In his notes he also describes two species of butterflies from our wooden box.

When he travelled to Southeast Asia and collected specimens of *Papilio ulysses*, he discovered that there was something much greater behind the beauty of the wings. He observed that the appearance of this species differs slightly, but significant depending on the region. There had to be some kind of mechanism that causes species to change in small steps and adapt to the environment. From this and other observations, he formulated a hypothesis which is known to us today as the theory of evolution. Today, Charles Darwin, who conducted research in parallel with Wallace, is most acclaimed as the father of the theory of evolution. Over time, Wallace's part in it has been forgotten....

The beauty of butterflies caught Wallace's attention and contributed to knowledge that is now considered unmissable. Yet, this object can still have an impact on us today. It makes us marvel. It shows us the magnificence and incredible diversity of nature.

Isn't that worth protecting?