2018 Dr A.H. Heineken Prize for Environmental Sciences, awarded to Paul Hebert

Presentation speech by Louise Vet, chair of the jury of the 2018 Dr A.H. Heineken Prize for Environmental Sciences

Ladies and gentlemen, for hundreds of years, taxonomists have travelled the world searching for biological species. They filled museums, cabinets and gardens with thousands of animals and plants. They studied their sizes, shapes, and colours. Then they assigned them names, and placed them in the evolutionary Tree of Life.

Today taxonomists have collected 1.9 million species. That may sound like a lot, but using these methods, it would take centuries more to name all species of the world. In the meantime, many could already have gone extinct.

Over recent decades, however, the science of taxonomy has been shaken up. The reason was the advance of DNA technology. In studying the history of evolution, nothing beats reading the genetic code, because the longer two species lived apart, the more their DNA codes will differ.

Paul Hebert, ladies and gentlemen, has come to be known as 'the father of DNA bar-coding'. He was among the first to see that we could use DNA in another way as well.

Very short DNA fragments might be enough to distinguish and identify separate species. Armed with the right tools, scientists could do that really quickly. They could count species in their yards just by throwing them in a blender. More importantly: They could catalogue all the world's species much faster than before.

Like most revolutionaries, our laureate had to win over many sceptics. When he proposed barcodes to define species, many doubted it could do the trick. By focusing on tiny barcodes, he might ignore other important genes.

Hebert, however, was not discouraged. He developed bar-coding methods and demonstrated that they could indeed do the trick. A handful of short DNA regions allowed him to tell almost all species apart. Some bar-codes even showed that in the past, distinct species had been lumped together.

So Hebert rolled up his sleeves and got to work. He began adding thousands of barcodes to databases. He launched a project called the International Barcode of Life. And he encouraged colleagues from all over the world to join in.

Today, close to 25 thousand researchers from 25 countries have answered his call. Here in The Netherlands, the Naturalis Biodiversity Centre is a key partner. Six hundred thousand species have now been bar-coded, and millions more will follow.

Ladies and gentlemen, the jury was impressed not just by Paul Hebert's revolutionary science, but also his revolutionary drive and determination. One look at his résumé will show you that he is in a hurry.

He wants his Library of Life on planet Earth to be completed, because species that are lost today will never make the list. His plan is to reach 10 million bar-coded species in the coming decades. If it succeeds, then future scientists, hundreds of years from now, will know about the biodiversity we enjoy today.

They would owe that knowledge to many people, but to one man especially. So please join us, ladies and gentlemen, in recognizing Paul Hebert, winner of the Heineken Prize for Environmental Sciences 2018!