

THE INSECT CONCERTO

CRICKETS SING AGAINST THE INSECT DECLINE

Interview with Matthias Meissner, Advisor For Sustainable Agriculture Policy At The WWF Germany

Mr. Meissner, what is the so-called insect decline?

As dramatic as it may sound, it does appear that insects are in severe danger. There have been studies with frightening results. In 2017, scientists from Germany, the Netherlands, and Great Britain together with insect experts from Krefeld found that three quarters of insects' biomass has been lost since 1989. This rapid decline in insects' abundance also points to a decline in species diversity.

Is that just a regional problem?

No, definitely not. There are several reports about the decline from all over the world. In China, especially in areas where pesticides are used a lot, there aren't enough insects to pollinate the apple trees. That's why people have to pollinate them artificially.

What could be possible reasons for this dramatic development?

One of the reasons is the intensive agriculture. It uses a lot of pesticides – and these become a twofold problem. Insects do not only die from insecticides directly. They starve as well, as herbicides kill the weeds, which are food for the insects.

Why do we need to save the insects? What role do they play in our ecosystem?

Well, they are food for other animals, especially birds. Long story short: if you have a decline of insects, you have an interruption in the food chain, which is a tremendous problem.

You're saying it's dangerous for other animals ... what about our species?

This scenario wouldn't end well for us humans. Insects pollinate so many plants we use, like vegetables, rapeseed and fruit plants. Not to mention plants like the cotton plant, which is essential for us to make clothes. Eventually we don't just have a decline in insects but in the production of plants as well, which means that we will have great, great difficulty producing sufficient food and clothing.

What is the WWF's strategy to stop the insect decline?

We are trying to change agriculture in Europe and Germany by doing a lot of lobbying work like talking to policymakers. The reduction of pesticide use has reached the European Parliament. But one of the biggest challenges is to redistribute the European agricultural subsidies to farmers who care about nature and environment.

And outside of the political debate?

Although giving policymakers a wake-up call is crucial, we work at the frontlines, too: together with farmers we develop measures for their farms. And last but not least, we also fight for protected habitats in general. Areas which are exclusively reserved for biodiversity are very important for breeding and feeding.

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Interview with Professor Hannelore Hoch, Leibniz Institute for Evolution and Biodiversity Science

Ms. Hoch, you specialise in the fascinating variety of insect sounds. And you have also advised the composition of the insect concerto.

Yes, for me, the idea behind the cricket choir is a very enticing, a very charming one. It shows the possibility of humans and insects playing together. Especially because playing music together actually means listening to each other.

However, in nature we hear less and less insect sounds in recent years.

Sadly, yes. One way to see the insect decline or to actually feel the insect decline is what we observe on the windshields going on a motorway. I remember when I was a kid and we drove on the motorway, my father had to stop every half hour to clean the windshield of the insects that had gone smashed. This is no longer observed.

What might be possible consequences if the insect decline continues.

Well without insects humans would be hungry and naked as most of our food and fabrics rely on the action of insects. Nearly all vegetables, all fruits, cotton - all is the result of the pollination. Insects play an enormous role in all kinds of so called ecosystem services. And besides pollination: don't forget that insects have a very important role in the food webs! Insects are eaten by a lot of other animals, very importantly by birds, bats, hedgehogs, frogs... And they also decompose dead wood and dead animals!

Is there something everyone can do to help save the insects?

There is actually a lot! First of all we should allow some wild places in the cities and in our private gardens. We shouldn't eradicate all wild herbs but let them grow even if only in a small part of one's garden. It's surprising how beautiful nature draws a very unique picture to your garden! And always consider that insects are a million species and humans are only one.

How do insects make their music?

Many insects use their abdomen to tap onto the ground, they're really percussionists. Other insects produce sound by so called stridulation. That means rubbing of two hard parts against each other, like in a violin for example.

The similarities to classical instruments seem obvious.

Indeed, but there are completely different types too. Insects can produce sound and vibration by the use of an organ which is called the tymbal. The tymbal is a specialized area in the basely part of the abdomen to which attaches a big muscle on the inside. As it contracts, these ribs are being pulled in consecutively and produce a row of clicks. This is the principle Cicadas use to produce this loud sounds which we all know from the Mediterranean.

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Interview with Gregor A. Mayrhofer, Composer And Conductor

Mr. Mayrhofer you composed a musical piece for orchestra and insects. How are your Soloists doing?

They are doing great! The 45 bush crickets that will be performing with our human musicians are currently back home at the breeder's place in Berlin Neukölln – but will rejoin the ensemble for the big premiere of the piece on the 21st of May.

Why did you decide to write a piece for this unusual combination of musicians?

Although our piece might appear funny at first, the situation of the insects is quite severe! In some parts of Germany three quarters of flying insect species have already perished. If this goes on, it will have terrible consequences. Insects are a very important link in the food chain. They pollinate the plants we eat and are themselves food for many other animals. Many of us think of them just as annoying creatures, like mosquitos or wasps, but often we don't realize how important insects are!

So did you intend to change our perspective on insects?

When you're living in a city, you forget sometimes, that we humans are part of nature too. I think, it's important not to lose the link to the animal world. So my Idea was, to create a musical dialog between the insects and the humans.

How do you compose a dialogue? The "languages" of insects and classical musicians are quite different, aren't they?

First of all we listened carefully to the infinite variety of their sounds and I transcribed some of their rhythmic patterns. Funnily, we found one cricket that is always chirping in a funny irregular rhythm, so he became our basic groove for the whole piece. I tried to create a musical language, which links the noisy world of the insect swarm with our traditional instruments. Sometimes we had to find some new ways to use our instruments. So I told my musicians: Do what your violin teachers probably would never have allowed you.

How did your musicians react?

For many of them it was quite a new thing. They didn't have to produce their normal Tchaikovsky- or Mozart-like violin sound but had to explore the whole variety of scratch and squeek noises with our bows and even with the reeds of the wind instruments.

That sounds like the most tricky part?

Indeed it was. I was very lucky to have such fabulous musicians who where able to shift so quickly in between the two sound worlds, in order to connect their noisy „chant“ to our classical music. Very often the notation doesn't show the exact sound, but gives them more a kind of graphical explanation of what they should do, for example: put the bow here and then pull it up. Funnily some parts of the score finally looked like some insect colonies running over the paper, too.

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But you also used new kinds of instruments, right?

Yes, there is for example the "Pergamentrassel", a kind of rattle, that creates very beautifully whispering rustle and crackle sounds like the leafs around the insects. A friend of mine, Sebastian Breitsamer constructed it and as far as I know it is the first time in music history, that this completely new instrument is played in a piece of music.

In the film about your piece we see the cricket walking on your violin. How come this insect is so trustful with you? One would expect it to fly away ...

It was so funny, because we didn't plan this. During the interview he just always started walking directly towards my Violin - apparently he likes being a musician...! But to be more realistic, I could imagine, that he recognizes the wood of the violin, which might remind him of his natural habitat. Or smells the rosin, what every violinist uses to create a good friction in between bow and instrument, so maybe he thought: „I should try this stuff too in between my wing and leg, maybe it will make my chirping sound even more beautiful..." In every case he himself made another connection between the two worlds.