

To recreate a Jurassic world

By: Per Wahlquist

When thinking of movies that takes place far back in time. No, no, I mean far, far, back in time like when the dinosaurs roamed the earth. We often forget how hard it is to actually know how anything looked like, lived, or even grow. Time is probably the dimension hardest to grasp even if we live through it every single day, hour, minute and second. It is however possible to get a glimpse of the worlds that one's was. Because right beneath our feet we have a fantastic record of the past. Because the rocks holds the truth!

If we for example would take a 28 meter long pipe and stick it down into the ground in the middle of Scania and then pulled it up, we could find the remains of the true Jurassic world. And this is what I have done. Well, I didn't use a pipe but I have worked on a 28 meter long sample of rock from the middle part of Scania and I have been able to recreate how our part of the world might have looked like back when the dinosaurs roamed the land.

The first step to unlock the secrets of the past is to identify what you have to work with. The 28 meters of rock I had could be divided in to three parts the bottom part is what we call the crystalline basement. This is rocks that are much, much, older then even the dinosaurs and

even complex life itself. These rocks are up to 1800 million years old. That is 10 times older than the rest of the rocks. These rocks have started to break down giving us our first clue of how the environment was. The rocks break down in this special way when they are subjected to warmth and humidity and a lot of it.

The next rock type we have is something called a mudstone, and this might sound like it's a rock made up of mud and it is. The mudstone is actually the most important rock we have to recreating this ancient world. Inside the mud hides hundreds if not thousands of small, microscopic grains of pollen. But it's not only pollen but also other tiny organisms that could live in water. Some of these only preferred to live in fresh water and some only in salt water. In our mudstone we actually have both. This then tells us that we were on the edge of the ocean in maybe a protected bay or why not a lagoon. The pollen in the rock tells us what plants grew all around this lagoon. The most common one was a swamp cypress, a tree that's relatives today like to live in and around shallow waters like, swamps. Other then the swamp cypress there were many different trees, like conifers, ginkgos and some tress that we don't have any relatives of today, like seed ferns. The plants on the ground on the other hand were dominated by ferns with an occasional horsetail sprinkled in. Remember this was in a time before we had flowers and grasses.

Well speaking of time, we don't yet know how old the rocks are. Okay I did say it was ten times younger than the crystalline basement. So that would make it 180 million years old. We got that age from the small organisms and pollen in the mudstone as well. Since these things can be found all over the world, in rocks, we have a pretty good idea of when new ones appear, and old ones disappear. And that's how we got the age.

The last rock we have is an exotic one, or it's exotic for Sweden. It's a volcanoclastic rock. So a rock that comes from a volcano but not as lava but as small parts of lava that have been thrown up in to the air and then fallen down to form a kind of rock made up of thousands of gravel sized lava pieces. This rock doesn't tell us as much as the mudstone, but it does tell us that there were volcanos here as well.

So, to summarize what we know of the place where we took out a 28 meter long section of rock. We know it was warm and humid. We would be in a lagoon surrounded by a thick forest with volcanos in it. And it's 180 million years old, putting it in the early Jurassic. This is just at the time when the dinosaurs started to really rule the land.

So, from 28 meters of rock you really can find that Jurassic world!