



## Biology: uniformity and diversity

### *Looking for phytoplankton*

Narrator

Off the north coast of Wales, Gabrielle Kennaway is searching for the secrets of the single cell plankton.

Dr Gabrielle Kennaway, University of Westminster, London

Under a light microscope you can see a certain number of things. But then there are organisms that are so small, that are actually too small to see in the light microscope. So you have to look at them with very powerful electron microscopes and it's just like I suppose those Russian dolls. You keep on taking one doll off, and there's something smaller. I find that completely fascinating.

Narrator

Gabrielle's mission is to find out more about the organisms in their natural environment.

Gabrielle Kennaway

Now this is the CTD. It's got lots of really Gucci bits of kit on this. Now, we sample the water with this. It's called the Rosette Sampler and all these are bottles. They're controlled by the computer. It gets a message down this wire, and the top and the bottom snap together enclosing nearly a litre of water inside.

Narrator

The CTD is also fitted with sensors. They record depth, temperature and the tell tale signs of photosynthesis.

Gabrielle Kennaway

If you shine blue light on chlorophyll, it excites the chlorophyll molecule and this change in the energy level is given off as red light and the sensor in here picks that up and it comes up the cable, up there, into the computer and where there's a peak of phytoplankton we'll get a nice big peak on the graph.

That looks like a nice smooth launch of the CTD. This trace is really interesting. The chlorophyll peak, the phytoplankton peak, is here at 30 metres. Now an hour ago that wasn't there. And it's an excellent example of a medium term, a medium scale turbulent event. The tide bringing a parcel of phytoplankton along in the tide, just passed us as we were sampling. It wasn't there an hour ago.