VIRUS HUNTERS

Sample VH10008

Thank you for taking part!

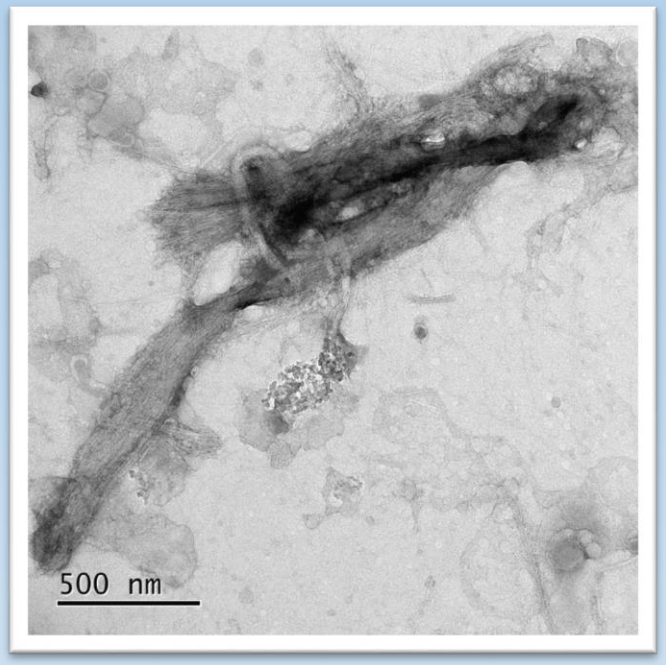
We took over one hundred pictures from your water sample, we can't include them all but here's some highlights. We had a great time looking at this.

Bacteria

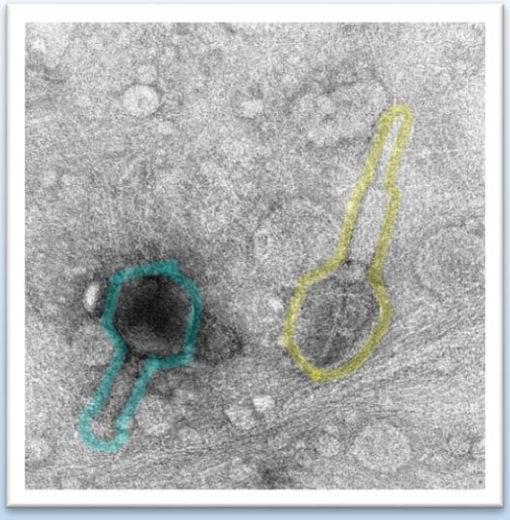
We try to filter them out but some always get through. This one has a load of bits stuck to it. The scalebar in the bottom left is 500 nanometers - a human hair would be 100,000 nanometers across!

A Thing!

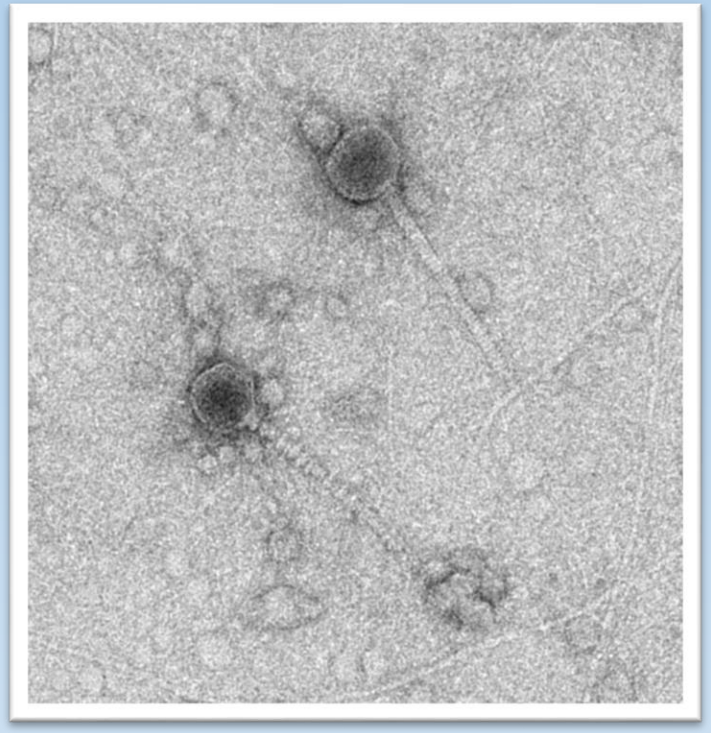
We're not sure because it's so tangled and messy but we think what we have here is a big bundle of filamentous (string like) viruses that have just burst out of a bacterium. The dark squiggle in the middle is all that's left of the cell.



Myoviruses



We found a few myoviruses in the stream. 'Myo' means muscle – because these guys can move – sort of. The tail has legs that attach to a bacterial cell, the tail contracts and injects DNA into the cell just like a syringe. The one on the left is empty – you can see the 'syringe' sticking out and there's nothing left in the head. These are 200nm long.



Siphoviruses

They look like the myoviruses above but they have longer tails that don't contract. If you look closely at the shape of the tails on these two you can see they're different and probably attack different bacteria.

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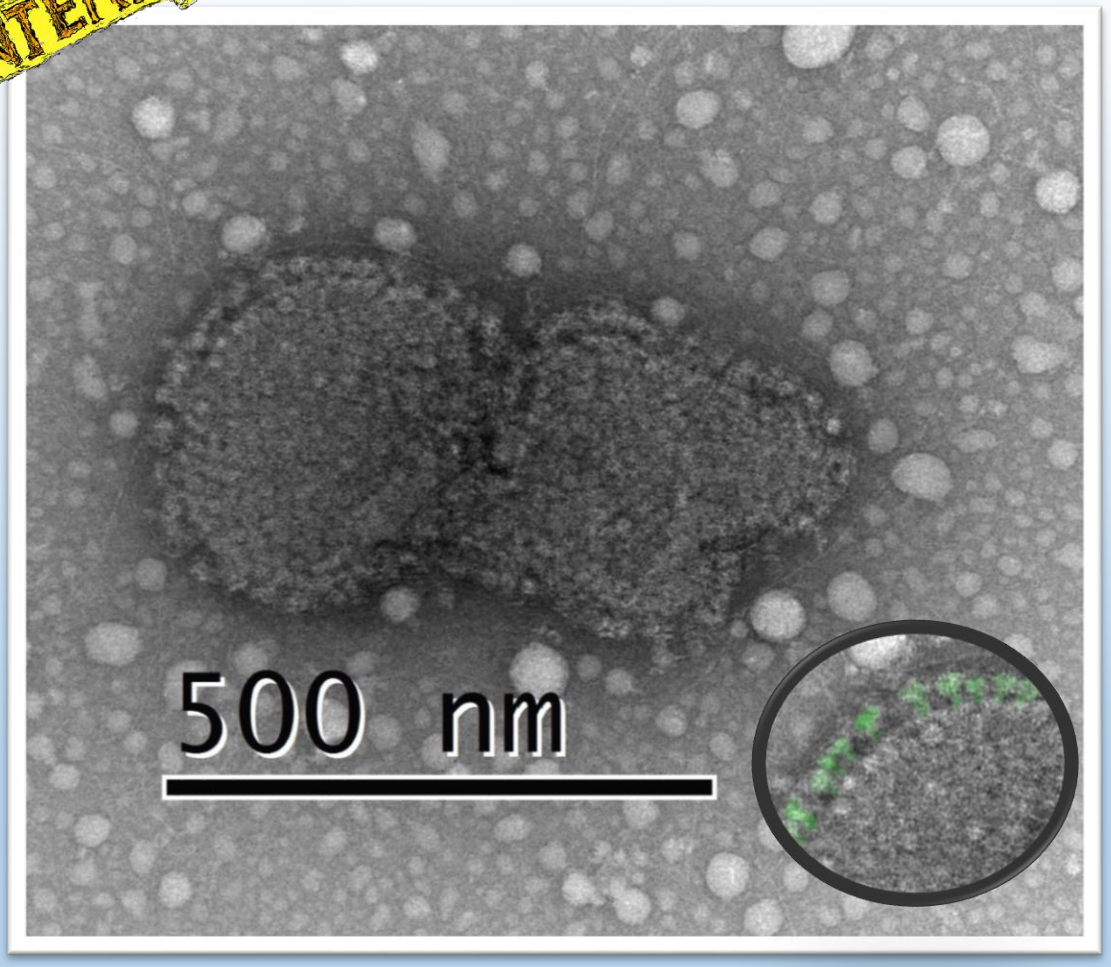

Coronavirus (maybe)

Not all viruses have a hard coat, the two in this picture are soft and squishy - we call them enveloped viruses. It's hard to identify them from just a picture but they look like coronaviruses - not bacteriophages at all. They infect all sorts of animals - birds, fish, shrimp, some can give people sore throats and runny noses. These ones definitely don't infect people.

If you look around the edge you can see the spikes - those are the proteins that recognise the right kind of cell and start infection. We've coloured some in green to make them easier to pick out.

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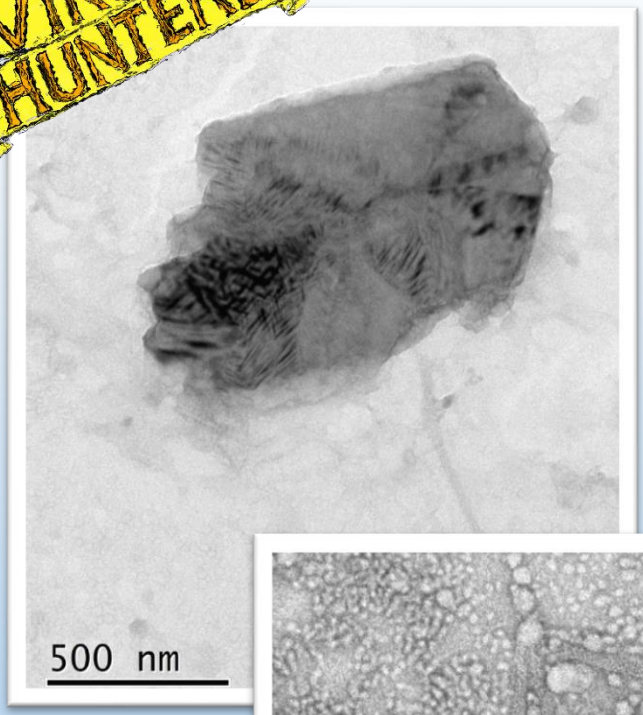
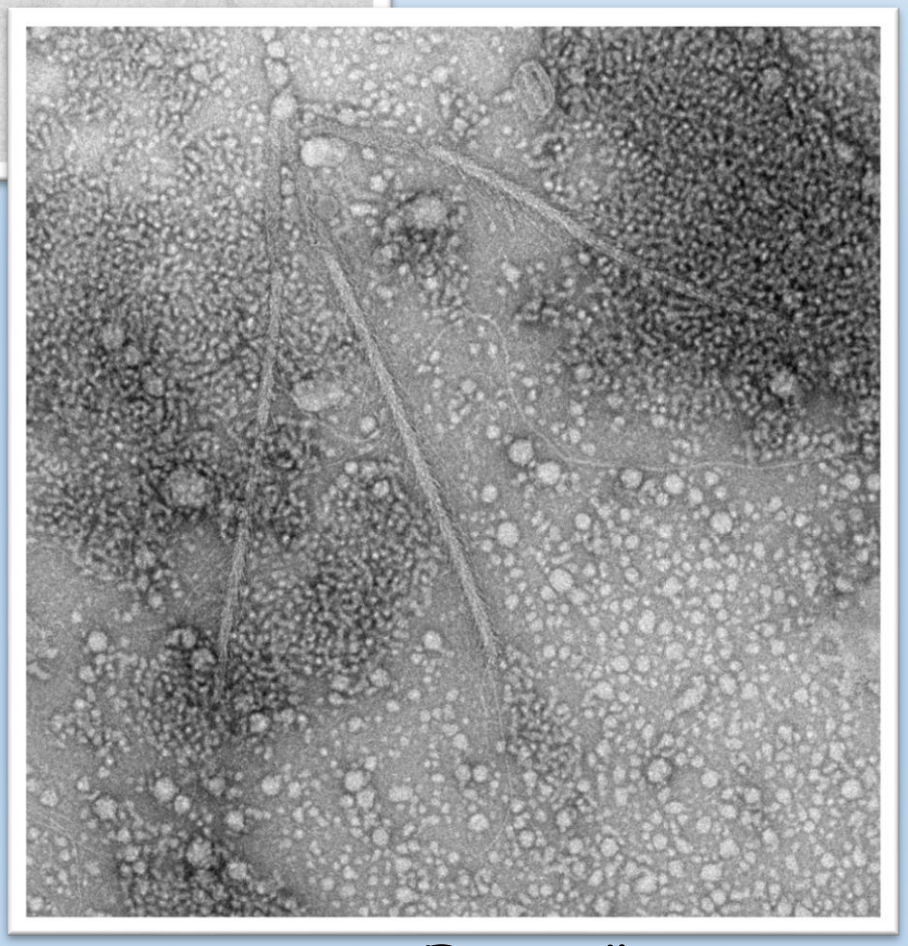


Dirt!

Flowing water breaks bits of mud off the river bank and carries them along as silt. This bit is a tiny crystal of quartz, 200 times smaller than a human hair.



Very Excited!

Some of us shouted 'Whoop!' and other happy noises. These things are odd. We think the three long rods are rudiviruses, everything we know about them says they live in hotsprings and near volcanoes, not streams in Coventry. We have a lot of work to do on these so we could be completely wrong but we'll enjoy finding out.