

Why I upload my microscopy videos to YouTube

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Image courtesy of Firmbee and Pixabay

Personally, I like recording videos of interesting or unusual things under the microscope to send to friends and family, or to include in publications. The tools to do this are inexpensive. I use smartphone scope adapters that typically cost around £15 and attach to the microscope eyepiece. They also have the added benefit of saving the strain on your eyes.

Recently, I have been using this method while screening bumblebees for parasites, and I got [several videos of bumblebee parasites in motion](#). I detected many samples infected with *Crithidia bombi* (a eukaryotic parasite with a complex life cycle and a flagellated stage). I also found a single bumblebee queen whose faeces were crawling with *Sphaerularia bombi*, a parasitic nematode worm that alters the queen's behaviour, causing them to go and infect mating sites with the worm's young that pass through the faeces.

For those of us who may spend hours a day staring down a microscope, it might not occur to us that the images we share are interesting or even beautiful. Indeed, initially, I only put my parasite videos on YouTube as a backup for talks. This way, if the video failed to play, I could simply follow the



Figure 1. *Sphaerularia bombi* in the faeces of a bumblebee queen.

link and have a backup version of the video to show. While I could have chosen to make it unlisted or private, I figured that it wouldn't hurt to make the results public. There are relatively few examples of what bumblebee parasites actually look like in video form, so I thought it might be a helpful resource for somebody at some point. I was surprised to find these videos received over 1000 views.

While these aren't by any means big numbers for YouTube, and they will not produce any money, they represent a great amount of engagement and exposure for a piece of science communication that I would have produced anyway, and that took me maybe 2 minutes per video to upload. It is also not wildly dissimilar to the kind of engagement established organisations like the British Ecological Society (or indeed the RMS!) get on the platform. Since then, I have uploaded all the interesting microscopy and videos of pollinators, and I am currently on over 20,000 views.

While this might not be reproducible for all microscopists, I think that there is a lot of potential for short-form, very low-effort video content for a wide range of microscopists. Even static videos, such as screening pollen under the microscope, were highly viewed, meaning that you don't necessarily need to be studying moving samples. Time lapses of cancer cell migration, videos of dissections, timelines of embryonic development, organelle imaging, all of these could be great short-form videos.

But what's in it for you? Well, firstly, it is obviously good exposure both for yourself and, if your videos are connected to your recent research, it will help boost metrics like reads and the paper's altimetric score. Moreover, grant applications increasingly ask how you will communicate your results to the wider public. I recently successfully submitted a small research grant, and this provided a solid, quantifiable example of my science communication track record, which required minimal effort.

As microscopists, we are immersed in a world that few get to really see, but that can be beautiful.

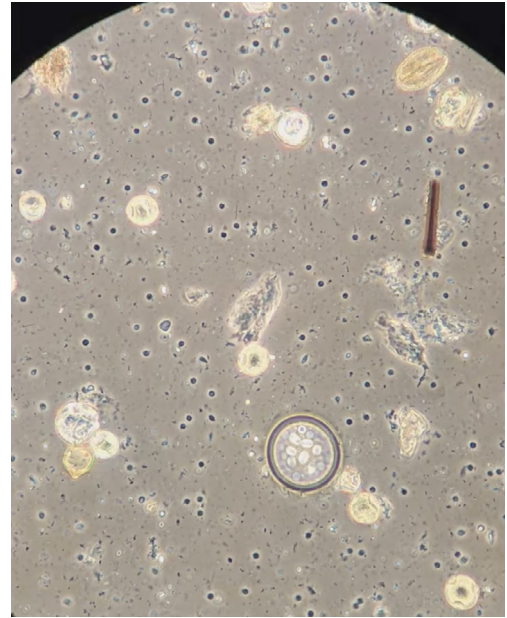


Figure 2. Heavy *Crithidia bombi* infection in bee gut contents. Black balls are the early life stages while elongated lighter ones are flagellated and can be seen moving under the microscope.

Opening that up to a wider audience may not convey as much information as an article or talk, but it might get people curious about the natural world, and it's a form of science communication you might actually have time to do!

Discover more at Alexis' YouTube Channel

About the Author

Alexis is a PhD student at Royal Holloway University of London studying how bumblebee parasites spread and are distributed across

landscapes. Over the last decade, Alexis has worked in an eclectic mix of research settings, from studying bumblebees, to ageing in fruit flies to varicose veins.

