

# Confessions of a microscope hoarder

David R Smith<sup>\*</sup> 

**T**he COVID-19 pandemic has made us all go a little coccoo. My wife, for example, has been diligently making her way through seventeen seasons (380 episodes) of *Grey's Anatomy*, despite openly admitting that she does not really like the show. One of my master's students has become preoccupied with high horology and regularly emails me photos of Patek Philippe watches that cost more than a new car. I have used the pandemic as an excuse to become a microscope hoarder.

It all began in November 2020 when a staff member from my department's microscopy facility sent out a group email to faculty and graduate students asking if anyone wanted some old microscope parts they were getting rid of. My research does not involve microscopy, nor have I ever showed much interest in microscopes, but for some reason I replied to the email immediately: "I'll take it all!"

Fifteen minutes later, I was pushing a large over-loaded, two-tier metal trolley towards my office. A colleague passed me in the hallway and asked, "What are you going to do with all that junk?" I shrugged my shoulders and said, "That's an excellent question", as I navigated a sharp turn. After emptying the trolley, "all that junk" covered nearly every surface of my office desk and floor. I scratched my head and took stock of the situation.

There were some grimy microscopes with broken or missing parts; a wide assortment of lenses, eyepieces, and stage equipment; dozens of wooden slide boxes, some containing shards of glass; faded pamphlets, brochures, and instruction booklets; a lifetime supply of unopened lens paper; and many items that I'm still unable to accurately identify. From what I could tell, most of the stuff was about 60–70 years old.

Although I had more important things to do, I spent the afternoon sorting through the

bric-a-brac. By the end of the day, I had collected enough matching parts to assemble a working brass binocular stereo microscope by Leitz Wetzlar—i.e. Leica—with a beautiful black enamel finish and three functioning objectives (Fig 1A). Based on the serial number, it appears to have been built in 1927. I placed the microscope on the bookshelf behind my desk, gazed at it admiringly for a few minutes and then cursed myself for flitting away the day.

The next morning during a Zoom meeting, a co-worker noticed the vintage Leitz on the shelf and asked where it came from. I recounted the tale of my recent acquisitions, and she said, "Check out the basement of the Biological and Geological Sciences Building. I think there are some old scopes hiding down there". Sure enough, as soon as the meeting ended, I was traipsing down the stairs to the bowels of the biology department.

The basement is where all the old scientific equipment goes to die. It is underneath the green house and next to a massive furnace, making it dank, dusky and surprisingly hot—not the kind of place to age a good bottle of Bordeaux. On the back wall, behind some large metal storage shelves, I located the old wooden microscope cabinets—massive handmade units containing dozens of doored cubbyholes for storing microscopes. They used to be in the teaching labs but were long ago replaced by cheap IKEA-esque cabinets. The building manager told me that sometime this year they will be broken down and hauled off to the dump.

I started at one end carefully opening and inspecting each cubbyhole. Some were empty. Others contained old glassware or crumbling teaching notes. Finally, I found what I was looking for. In the bottom corner of the last cabinet was a patinated gold-coloured brass standard microscope, which I later dated to 1923. It was missing an eyepiece and objectives, but by rummaging

through a stack of old microscope boxes in the corner of the basement, I was able to locate time-appropriate replacement parts, thus restoring functionality to this 100-year-old specimen (Fig 1B). And so began my obsession with antique scopes.

Everywhere I went on campus, I was on the lookout for more finds. One time while roaming through the hallways of the Geology Department, for instance, I stopped a professor whom I had not met before and asked if she had any broken or obsolete microscopes that she was willing to give up. She looked at me like I was from another planet, but after explaining myself more clearly, I walked away with a well-worn 1940s Leitz petrographic scope. In the closet of a third-floor storage room, I was directed to an abandoned Leitz Inverted Microscope in immaculate condition from the mid-twentieth century. With a bit of online research, I learnt that a similar model was used by Leonard Hayflick for his and his collaborators' pioneering scientific work in the early 1960s, including the discovery of *Mycoplasma pneumonia* (Chanock *et al*, 1962) and the development of the vaccine-producing cell strain WI-38 (Hayflick *et al*, 1962), which was eventually used for producing nearly all human virus vaccines. More than 10% of humanity has had artificial immunizations grown in WI-38 (Sharer, 2007).

Word got around and colleagues started coming to me with their own outdated scientific instruments. One time, I arrived at work and there were three sorry-looking microscopes sitting beside my office door along with a sticky note saying, "Enjoy". Two of my favourite pieces come from my friend André Lachance, a yeast geneticist in my department: a late 1800s French field microscope and a stunning, near-pristine binocular microscope produced in 1923 by the Spencer Lens Corporation in Buffalo, NY, USA (Fig 1C). Other notable offerings included a

University of Western Ontario, London, UK

<sup>\*</sup>Corresponding author. E-mail: dsmit242@uwo.ca

David R. Smith is a regular columnist for *EMBO reports*.

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**Figure 1. Assorted vintage microscope.**

(A) Seibert Wetzlar (left) and Leitz Wetzlar (right) binocular microscopes from mid to late 1920s. (B) Two Leitz Wetzlar standard microscopes from 1923 (left) and 1930 (right). (C) Two Spencer microscopes, circa 1924 (left) and 1914 (right). (D) Two small field microscopes (late 1800s) and a large French drum microscope circa 1860. Photos by the author.

125-year-old microtome by Bausch & Lomb, which weighs about 75 pounds, and a French Drum microscope from 1860 (Fig 1D).

Things really took a turn for the worse when I started bidding in online auctions.

Unlike vintage Leica cameras, which can fetch thousands of dollars, antique microscopes can be had for relatively cheap. But forty dollars here and fifty dollars there adds up, and space for storing the pieces runs

out. Eventually, I started keeping some of my collection at home. At first, it was romantic—an aged scope on the mantelpiece, another as a bookend ... But when my wife discovered a large tray of Reichert eyepieces in our sock drawer, she said, “Honey, it’s me or the microscopes”.

Needless to say, my office now looks like something off the reality TV show *Hoarders*. But like any hoarder worth their salt, I can give you a good reason for why I need each and every object: comfort. It has been a stressful and unsettling time, and these time-worn brass instruments have proven to be a perfect distraction, and one that is still grounded in science and research. Moreover, they are objects of great beauty and craftsmanship and that they can still do what they were designed for after all these decades is inspiring.

Let me end with a small suggestion. If you are ever feeling anxious or down, pick up a 1920s Leitz microscope, set it in front of you, run your fingers over the cold polished surfaces, think of all the other hands that have held it, see your reflection in the brass and then slowly rotate the coarse adjustment knob. If it is well oiled, there is no better feeling. It cuts through the anxiety like a hot microtome blade through cold butter.

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