Miniatures
Small and Beautiful
From the treasures of
Fritz Schulze

In a recent communication with David Walker I learned of the Micscape Magazine addition *Micscape Lite.* Searching there I came across an article by my old friend Dr. Manuel del Cero describing curious miniature microscopes. That reminded me of the fact that I also have some unusual miniatures in my collection. In the following I shall elaborate about these and similar small instruments.

The first is a scale model of an East German VEB Carl Zeiss Jena microscope. I could not clearly identify it, but it is probably a simple version of the 1980 Laboval. It stands 160mm tall and the only movable parts are the revolving nosepiece and the mirror. Oh yes, the eyepiece can be removed and it even has a glass plate at its lower end! There is no optics. It was made by the apprentices of their training workshop. Its provenance is enhanced by the fact that it was deeded so me by an older friend who had trained at the Jena factory before the end of WW II together with another mechanic who later, in 1949, became my instructor (Lehrmeister) at the new Zeiss Opton factory in Oberkochen, West Germany. It's a small world indeed, here I am in Canada 60 years later, and by pure chance meet this friend and inherit this fine model.

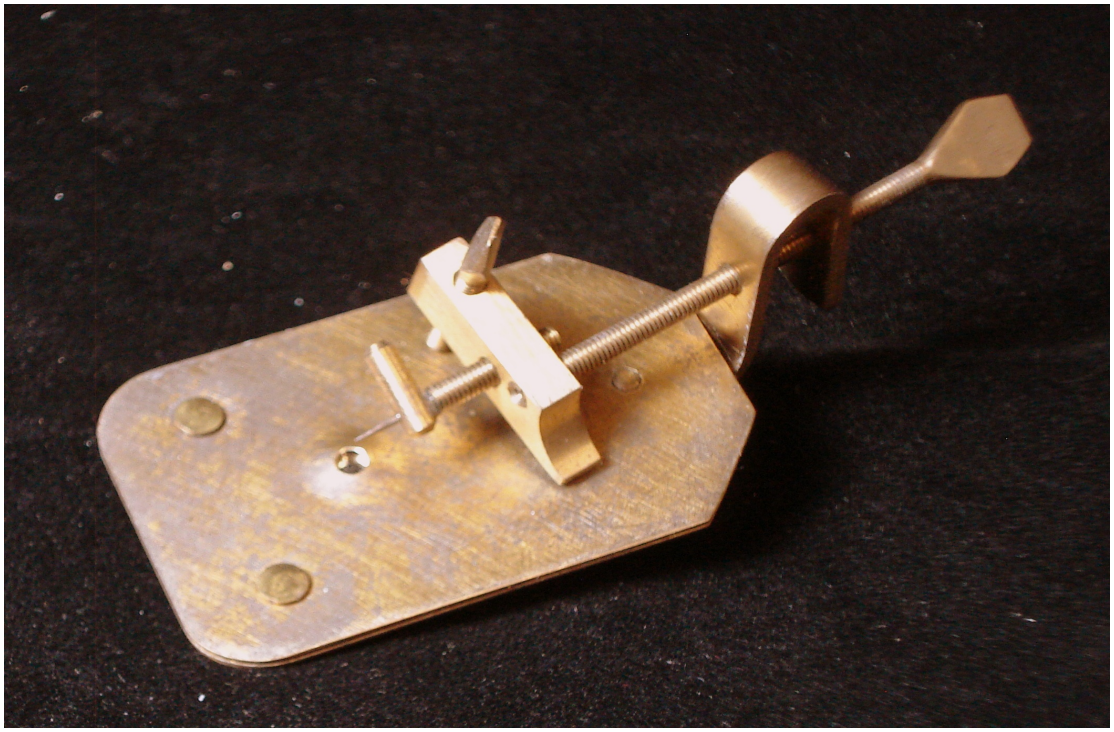
A postage stamp from the GDR depicting a similar microscope, issued for the 125th anniversary of Carl Zeiss Jena in 1971.

The second is a simple microscope with 50x magnification. This kind of small microscopes were at the time (1930 - 40) given out by publishers of popular scientific books. I don't recall under what circumstances I obtained this instrument when I was a boy of 12 or 13 years. It comes with a neat little box and a set of prepared slides. The box is marked 4.80 (Reichs-mark) on the bottom and has the instructions of use printed on a label in the lid. Always being a tinkerer, I at some time modified the instrument so that the springloaded slide holder can be “rested” in the open position. Similar instruments appear occasionally on eBay. Note that the dimension of this microscope prevents the use of standard-size slides, only 15x57mm ones.

What about the small gnome with the funny cone hat? Well, do you remember the mechanical hand-cranked adding machines and calculators by the Swedish company FACIT?

This little fellow, an advertising give-away, insinuated himself somehow among my collected trivia. He stands 90mm tall beside the microscope. Facit calculators were in the end made redundant by the new electronic calculators in the 1970s.

The next small instrument is a Leeuwenhoek replica I was given by a generous colleague and which became the germ of my interest in such replicas. It was made by the apprentices of Carl Zeiss Oberkochen in the 1980s and differs from the well-known illustrations by having a double bearing on the long spindle and the rotating lever being a cylindrical shaft instead of the thin lever with a tiny ball at the end. The image quality is good, the magnification perhaps 20x. In the years since I made and sold over half a dozen similar Leeuwenhoek replicas (and still have two!).

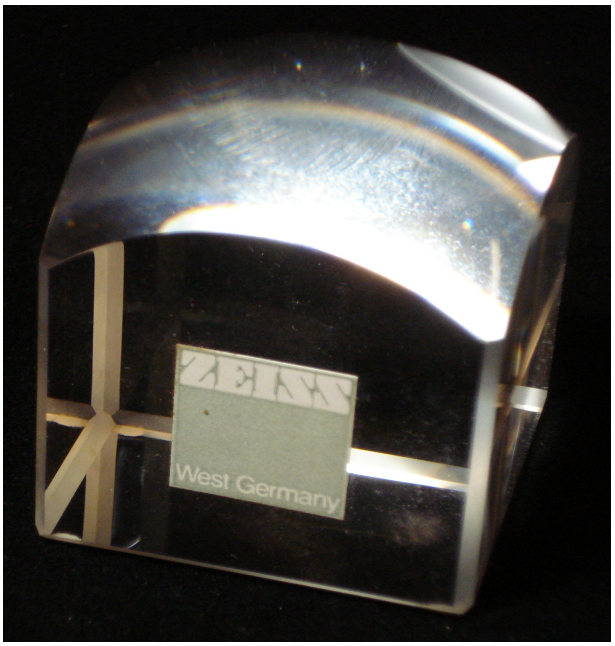


Then there is the tripod magnifier I picked up at a flea market. The cast tripod frame of 50mm diameter and a height of 25 has a thread for focusing the large 20mm diameter lens. The magnification is 10x, manufacturer unknown.

Next is a tiny Hensoldt measuring magnifier with a glass scale in the base of the frame. For focusing the lens slides up and down. The very fine scale reads from 0 - 8mm graduated in 0.1mm. This magnifier was given to me while at training at the Hensoldt factory in Wetzlar in the 1950s. My little FACIT manikin serves again for size comparison.

Then there is my Zeiss folding magnifier 3 - 6 - 9x, a most handy tool I regularly use.

The last is a 40mm square block of glass, a postage stamp magnifier with about 3-4x magnification. In use it is laid right on the stamp to be examined. The optically active curved surface has an estimated radius of 45mm with the centre at the bottom surface.
The image quality is amazing. This prism magnifier was also produced by the optician apprentices of Carl Zeiss as an advertising give-away. To protect the bottom surface from scratches, I glued a tiny speck of paper on each corner. It can also serve as an unusual paperweight! A second picture showes it upon a GDR postage stamp for the Zeiss Mikroval microscope, issued in 1971 for the company's 125th anniversary (See above).



Now I come to the principal objects of this article: my miniature microscopes:

The most intriguing one is a tiny Swarovski jewel, 40mm in size with gold detailing. Nothing is movable, it is purely ornamental. I found it in a shop in Yorkshire during a holiday there in 2003. It came with a tiny 40mm square booklet describing its care and warranty. I don't remember how much I paid for it, but, being discontinued, it was on sale. I have never again seen anything like it at a Swarovski dealer or jeweller. As a matter of fact, when I enquired at such places I met only stares and disbelief. An aside: the little Prussian soldier was a gift from my oldest friend who cast it himself from tin and painted it according to historic illustrations. This particular one is from a “company” of 9, including a drummer, a flag bearer, and a “captain”

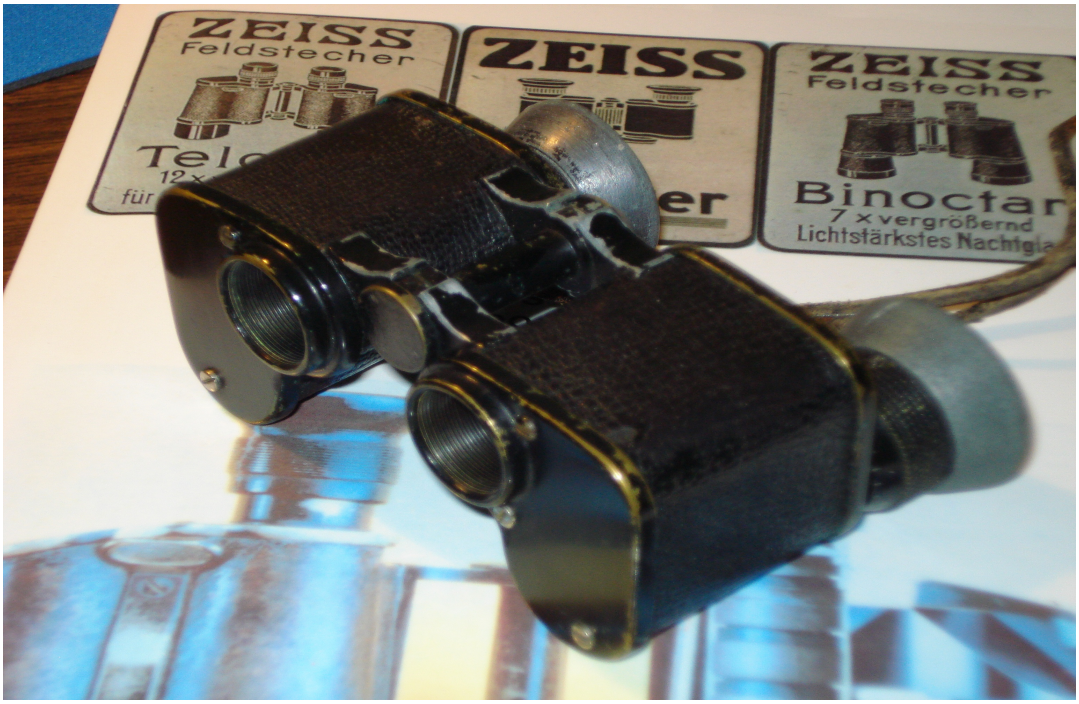
My other miniature microscope is a normal trinket picked up somewhere. It stands 30mm, has no moving parts and is gold plated. In all likelihood it is Chinese. Nothing special, but why not buy it? If you are a collector of microscopes and find such an item on sale for a dollar or two why not grab it? The 35mm “OSRAM” sugar cube is over 50 years old ! It dates from a time when you were given the sugar for your coffee in Cafes in cube form, the wrapping often an advertisement like this one.

My particular pride is my pair of miniature Swarovski binoculars,, less than 30mm long, with a tiny leather carrying strap and workable hinge. All detailing is in gold. The workmanship is amazing. It, too, was acquired in Yorkshire “on sale”. I am waiting to hear from Swarovski in Austria to learn more about these miniatures.

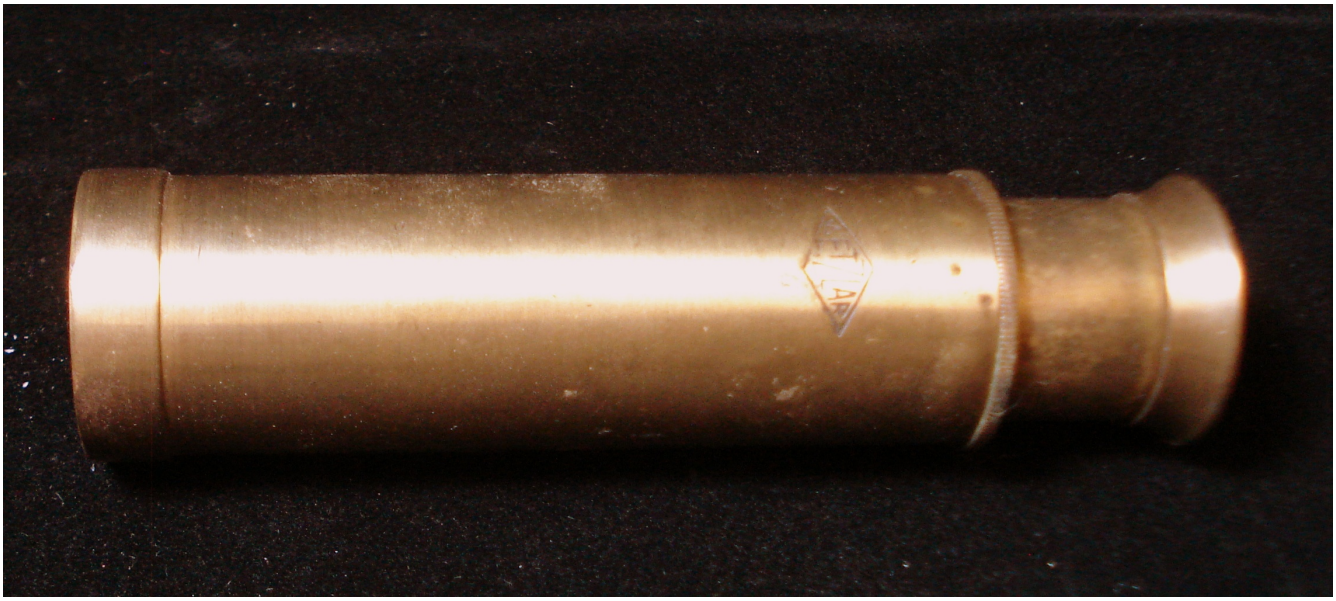
As a counterpoint to these crystal beauties I close with a really cheap miniature prism binocular made in China as a pendant for a necklace. It looks nice from a distance, but upon

closer look it is a cheap and rough cast piece of nickel-plated alloy. Both these last two items are now part of my collection of binoculars and telescopes, which includes also some larger but still small in comparison items:

The last item is not really a miniature, but is very small in comparison with the normal standard Zeiss binoculars (before the advent of the “modern” mini-binoculars).
The Carl Zeiss Teletur 6x15 small prism binocular, date of manufacture between 1918 and 1928, is the first Zeiss binocular with the objective distance smaller than the ocular distance. Remember that Zeiss' argument for the patent (1893) on its binoculars was “ an increased separation of the objectives for enhanced stereoscopic effect”. This cute little “field glass”, easy to carry along with a weight of only 220 g and only 80mm wide was, therefore, an exception to the rule. I am quite proud to have it in my collection, particularly as it is fully functioning despite its wear and tear. I obtained it from Slovakia via eBay in 2009.



The last is a 90mm simple telescope engraved only “Wetzlar” in a diamond shape. The objective diameter is 20mm. For focusing the eyepiece pulls out. The magnification is about 3x, the field abysmally small. It was given to me by a friend who who knew about my optical interests: “if you want it you can have it!”. So I took it gratefully.



So you see, it does not necessarily require expensive large instruments to give you joy in ownership and possession. You find pleasure in many things, if you but see it. This applies to all things in life.

A remark about the image quality of the illustrations: I use a simple Sony Cybershot MPEG Movie VX 7.2 Megapixels, but I struggled to obtain really sharp pictures both in the “Macro” mode and normal, despite using a stand for the camera. It can't be the Zeiss Vario-Tessar objective., no way! Could be the autofocus. After repeated trials I gave up. So, my apologies.

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