Greetings from Ukraine

This story covers 3.5 parts:
- my own experiences from web transaction to Ukraine and my recommendation for Taking pictures of lens for adverts to non-hobbyist
- Lomo OI-17 epi adapter introduction (both imported from Ukraine:)
- Lomo mir-2 reading microscope introduction (mir means peace and as the situation is as it is, in this context I can not use capital letters with any Russian propaganda - old or new. There is WAR in Ukraine!)
- quick listing of Lomo objective markings

‘ryssitty’ is a new chapter to pinpoint some obscurities, easily preventable design errors or manufacturing problems etc. What has been ryssitty? (ryssitty is a Russian derivative for poor design, manufacturing, handling, managing, making etc: based on centurian (more or less co-)operation between Finns and Russian).

Making web shopping from Ukraine

eBay is an easy and quite safe site for buyers with easy money transactions. https://violity.com/en is Ukrainian site with moderate good reputation by https://www.scamadviser.com/check-website/violity.com

You must register in Violity and it seems to have many functions. Most ads are written as Ukraine and you can not bid or make transactions unless shipping info (worldwide) matches. If you can have contact with sellers via chat by the site with a common language, you can proceed.

Money transactions may be tricky: Ukraine is not yet part of the Sepa bank transfer area. I made latest money transaction with Western Union, which seems to have several kiosks in Ukraine (actually I can't make a credit card payment with WU, because Americans aren't familiar with non-ascii char (in Finnish there are 3 extra characters (ö, ä, å) compared to ascii, Ukraine has totally different alphabet set)).

At mid of Recember 2023 a parcel from Odessa to Helsinki by Ukrphosta took 6 days to travel. Two other shipments from Ukraine were much faster than eBay estimated. Three out of three transactions of mine have been OK since summer 2023 (from the Lomo lens box I have written before (boxes may be the reason for undamaged transports)).

I tried to make an honest picture from a damaged lens of my own, it was hard to find an easy routine which produces a representative picture. Cracks may be hard to see without reflection and if you use a light thru lens, it is easy to overexposure or 'misalign' defects. These are the best instructions to non-hobbyist which I can generate.

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Hints for a microscope lens advertisement pictures:
1) do not make any cleaning, you may damage lens coatings, fastening cement etc
2) objectives can easily turn out from revolver, eyepieces can usually lift out from tube
3) put optics on white A4 paper sheet
4) use (your phone's camera) macro settings with forced 'flash' and take 4 pictures from every objective:
2 pictures from text / markings each side of obj (max 5 cm from obj, text must be readable, not need for eyepieces)
1pict focus in front lens
1 pict focus in backside

You can use the attached picture with your own microscope optics inquiry.

The crack is not the white spot in the front lens, but on the little side of it. The ‘ghost’ of the crack can be removed from the back lens picture with a little twist or by poorer light.

OI-17

It may be a jolt for native English speakers, but there are extra alphabets in the other word. With Slavic language you have another mismatch: 'exactly same'alphabet can or can't turn to a different character (AY-12 bino as western character set is AU-12 and Metam P-1 'is' R-1). I have used several different phrases to look after OI-17:
lomo oi-17
ломо ой-17 (little mistake by G translation)
ломо ОИ-17

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G translations from (https://forum.shvedun.ru/viewtopic.php?f=6&t=11132):
"OI-17 is an opaque illuminator with a Brumberg-Krylova beam splitter plate, which selectively casts short blue and ultraviolet rays onto the object and transmits the rest from the OI-18 fluorescent illuminator with an SVD-120A mercury lamp. Together OI-17 + OI-18 can be called 'Luminescent device OI-17'. It is used in conjunction with biological microscopes - MBI-1, MBR-1, MBI-3, MBR-3, MBD-1 or with stereoscopic microscopes - MBS-1 and MBS-2."

Brumberg-Krylova beam splitter plate:
https://www.leica-microsystems.com/science-lab/life-science/multi-wavelength-epi-illumination-in-fluorescence-microscopy/
"A major contribution to epi-illumination fluorescence microscopy was the introduction of a dichromatic mirror for incident illumination with ultraviolet light by Brumberg and Krylova (1953)."

There is poorly named
http://mikroskopfreunde-nordhessen.de/dateien/Beleuchter%20OI-14.pdf (OI-14 is a condenser and please do NOT use spaces in a filename) as German version of OI-17 & OI-18 user manual. First picture is from it:

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Beleuchter OI-14

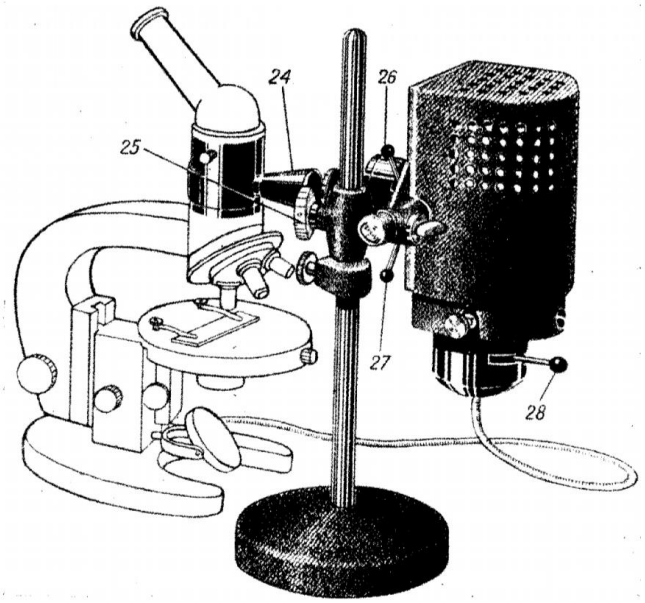

Abbildung 11

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Mercury bulb SVD-120A can determine as environment hazard (at least by modern (western) standard) http://lampes-et-tubes.info/dlhg/dl143.php?l=d
and it needs a power source with 140V and 220V (ignition). I try to find 1 - 3W UV or blue led instead for Lum-i-Pas device in picture with OI-17 in LgO

OI-17 is pretty much the same adapter that I drafted at the end of the Lum-i-Pas story. Because of the frequency sensitivity of beam splitter, it is more focused on botany. Based on serial numbers OI-17 has been in production at least 1959 - 1970 (searchable as now) , but the device seems to be a rarity. OI-8 and OI-21 are other epi adapters.

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The 10-0.40 (OM-33L according RafCamera, serial# searchable as now: 64… - 87… (maybe without Л / L)) objective has a remarkably big front and back lens, Numerical Aperture is about twice the normal one. The 90-1.25 from 1966 may not be part of the original set.

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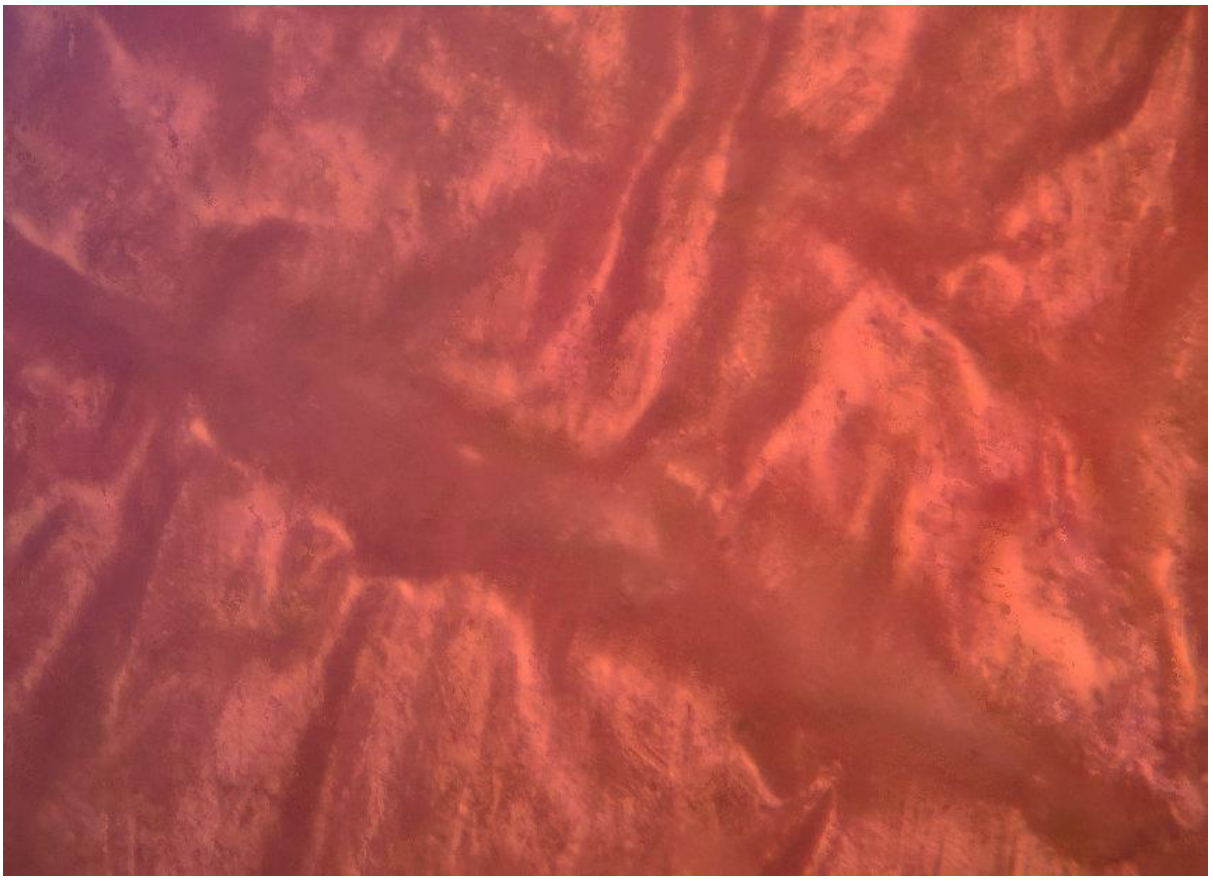
Left: mint mark of 2€ coin by OI-17 & 10-0.40 and Nikon adapter, Right: Chinese CS-mount USB-camera + 180X zoom objective with wall mounted wooden stative (containing coarse and “fine” focusing; maybe another story?). Upper “arm” of F is 0.4 mm length measured by mir-2.

Epi lightning is harder to photocopy:

- image sharpness area / field is very limited (targets aren’t flatten between glass?)
- haze / veiling appears easily to images (also in my Metam P-1 too (missing coatings inside?))



Surface of red grape by OI-17 & 10-0.40 and Nikon tube.

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With OI-17 there are couple new challenge:

- position of light make big differences for images
- it is easy to focus some ‘bogus’ conjugate plane
- non-luminous objectives give “various restricted color palettes”

Focus stacking program (‘focus-stack --no-opencl DSC*.JPG’ from the command line of Ubuntu with Nvidia works) is mandatory.

OM-33L can be used as brightfield (with big lenses it’s **bright**). If you use OI-17 with brightfield illumination, the light turns yellow due Brumberg-Krylova.

‘ryssitty’

On the Russian site there are complaints about the weakening quality of paintings over the years.

mir-2

If we think of a reasonable price for a mir-2, there are two different factors: device and objective. Device can contain a box, filter, eyepiece, tubes and fitting. Objective OM-12 (3.7-0.11) has remarkably good macro photography properties as intact and has an aftermarket price 100 - 120€ as alone (but good quality is impossible to check from a picture). Lens with moderate defects can be good for enough in visual inspection with range 19 - 33X mag on mir-2.

The Mir2-User Manual is made with G translator: ocr app for Android and ‘tesseract’ program to Linux has been used to transform picture back to text.

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Device has a predecessor from the end of 1940 and successor from 1980. Toe / Zenith 4-page brochure (from the 80's ?) sells mir-3 with a picture of mir-2!

Eyepiece of mir-2 has a focusing (thread) for measurement scale and it is 7X. Total magnification depends on the objective (3.7X), eyepiece and tube length (130 - 190 mm). The optics theory of magnification can be explained by the sir Isaac formula (easily, but maybe in a different story (newer Lomo epi obj are printed with focusing length & na instead of mag)).

Original fittings were missing from my set, but I made ‘stative’ for handheld use from a plastic tube.

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‘ryssitty’

There is no restriction for over lengthening of tube, reinstall must done via dismantling friction collar because of spring / leaf in it:

Objective nomenclature

From https://www.microbehunter.com/microscopy-forum/viewtopic.php?t=5501
Obj markings:
ви = water immersion
ми = oil immersion
п = polarizing
план = plan
апо = apo
ф = phase
Л = luminescence (meaning lens elements do not contain impurities that can affect luminescent techniques)
Д = D (cover slip depth, for example D= 0 means no cover)
К = contacting objective utilizing gelatine (usually not useful for hobbyist (not eyepiece))
ЛОМО = LOMO
КОРР = correction collar
иРиС = iris

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From http://www.mikroskopfreunde-nordhessen.de/dateien/Lomo-Objektive.pdf are quite definitive illustrated list of Lomo microscope obj (as far as I know only darkfield epi and Metam WD = 45mm & infinite obj are missing)

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