

Selenium toning

Recent discussions about image silver stabilisation by means of selenium toning appear pointless to me. There are more effective ways to achieve archival permanence like toning in gold, sulphur or sistan. But even weak selenium toning is better in terms of archival permanence than no toning at all. A fine printer has other reasons for using selenium, though. Selenium toner allows us to increase the densities of the shadows exclusively. Irrespective of the dilution or temperature, the toner always reaches the higher densities first.



top: untoned
bottom: toned in selenium

Apart from a distinctive increase in d_{max} , the deep shadows appear more differentiated. A higher contrast range and a more or less strong shift of the image tone towards cooler (and less green) tints make prints that have been toned in selenium look more brilliant. The shift in colour is dependent on the composition of the paper emulsion and on the developer. The greenish cast of the image silver, which most photographers do not appreciate, can be shifted to more pleasant hues in highly diluted working solutions. If you want the toner to reach the highlights as well - before a decrease in shadow density occurs - you have to choose for dilutions between 1+100 and 1+400. If you only want the shadows to intensify, you have to use stronger solutions of between 1+5 and 1+20 and tone for only very short times (20-60 seconds). Toning short and strong like that, you have to make sure that the process is stopped abruptly. Clearing agents are no stop baths for selenium toners! By a quick dilution of the toner, that is still present in emulsion and paper base, in running water and by gently wiping off both surfaces of the print with a piece of cotton wool, the toning process is sufficiently stopped.

All papers are accessible to selenium toning! Some tone quickly, but with others the effect of toning is only visible in direct comparison to an untoned print. In any case the print gains in brilliance and an increase of the shadow densities is visible and measurable. To keep things simple, note that warmtone paper tones quickly and with a clear change in image colour, whereas with coldtone paper the alteration is often barely visible. Even if you tone in a strong solution for a longer duration amazingly little is going on. If the print was toned only to increase archival protection, you should not be worried about this. How far toning really progressed is only visible if you bleach. If a red brown image remains, in which even the highlights show enough tonality, the goal is reached. If the highlights - maybe even down to the mid tones - appear worn out, toning was too short to give the print maximum protection from the environment. However, in the highlights as well, a small membrane will have been created around the silver grain. This is called "hidden selenium toning".

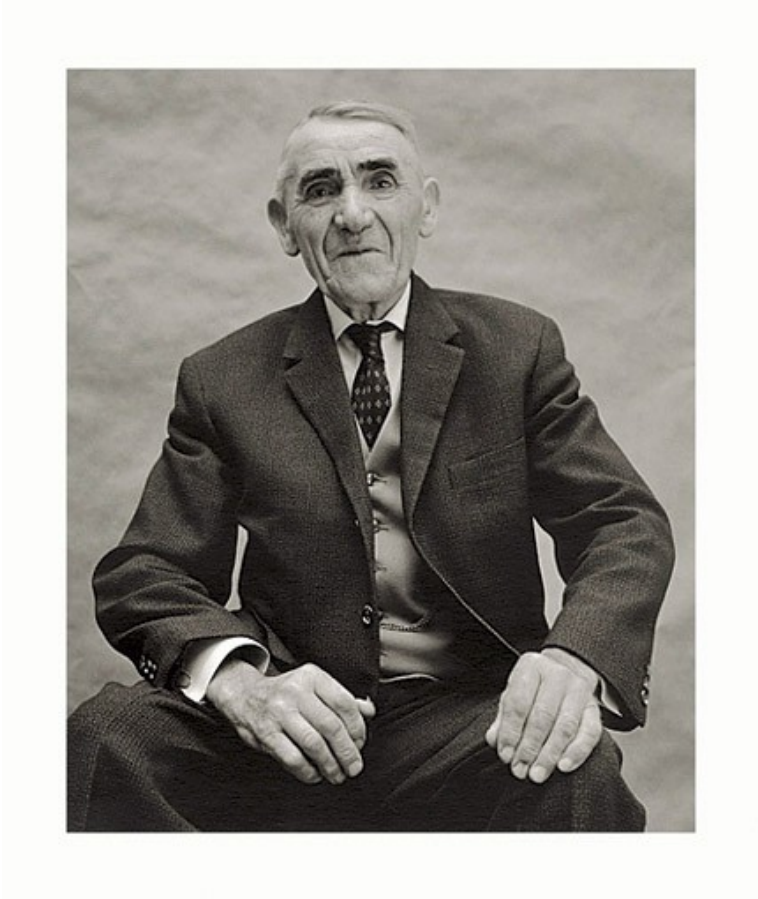


A.S.C.
Wephota Baryt Brilliant, lith development

left: selenium toner 1+100 for 2 minutes

right: selenium toner 1+10 for 2 minutes, then bleached to assess whether the highlights have also taken on the toning. After subsequent fixing, the still untoned silver is removed and the print becomes lighter. If the original condition is to be restored, reverse development (with any developer) can be used instead of fixing.

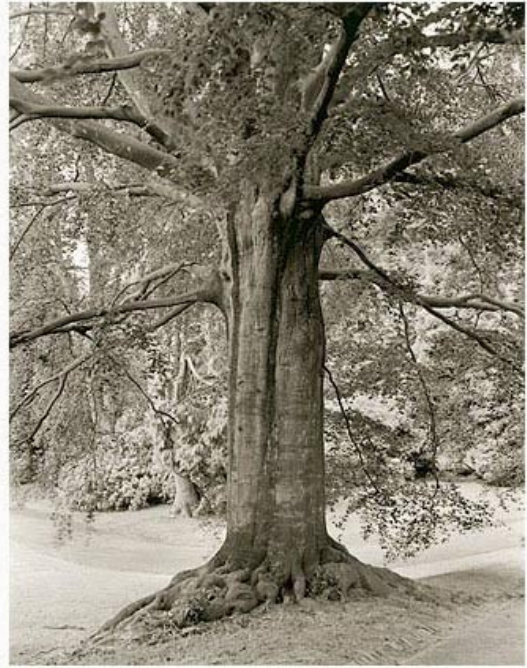
On warmtone paper the progress of toning is easier to judge. If you only want to intensify the shadows, you tone in a strong working solution (1+5 to 1+20) for only a short time. If you want to shift the image tone, it is wise to use higher dilutions. Otherwise the shadows start losing density, before the highlights have been reached. The warmer the print was developed, the higher should the toner be diluted to prevent excessive cooling of the image tone.



Select VC in VGT (developer kit) Selenium toning 1+10 1:30 mins



Markus Rottländer
Fomabrom in Easyliith 1+30
left untoned, center MT1 Selenium toner 1+10 40 secs, right 1+10 1:30 mins



Willi Morali
HP5 4x5inch @400ASA Tanol 1+1+100
Printed on Oriental Warmtone in Separol HE,
left untoned, right Selenium toner 1+50 3 minutes



Wolfgang Ludes
Ilford MGIV in SE6 BLUE, Selentoning 1+10 5 minutes,
followed by a short bleach for the lights and toned with MT3 Vario



Maple leaf enlarged directly on Select Ivory

Lith 1+8 4 minutes

Omega 1+100 4 minutes

MT1 Selenium toner 1+20 2 minutes



Serhan Sözman
Polychrome print on Select Vc with Selenium toning



Adox Variotone, two tray: Catechol and Blue – right fully toned in MT1 Selenium toner 1+6 4 minutes