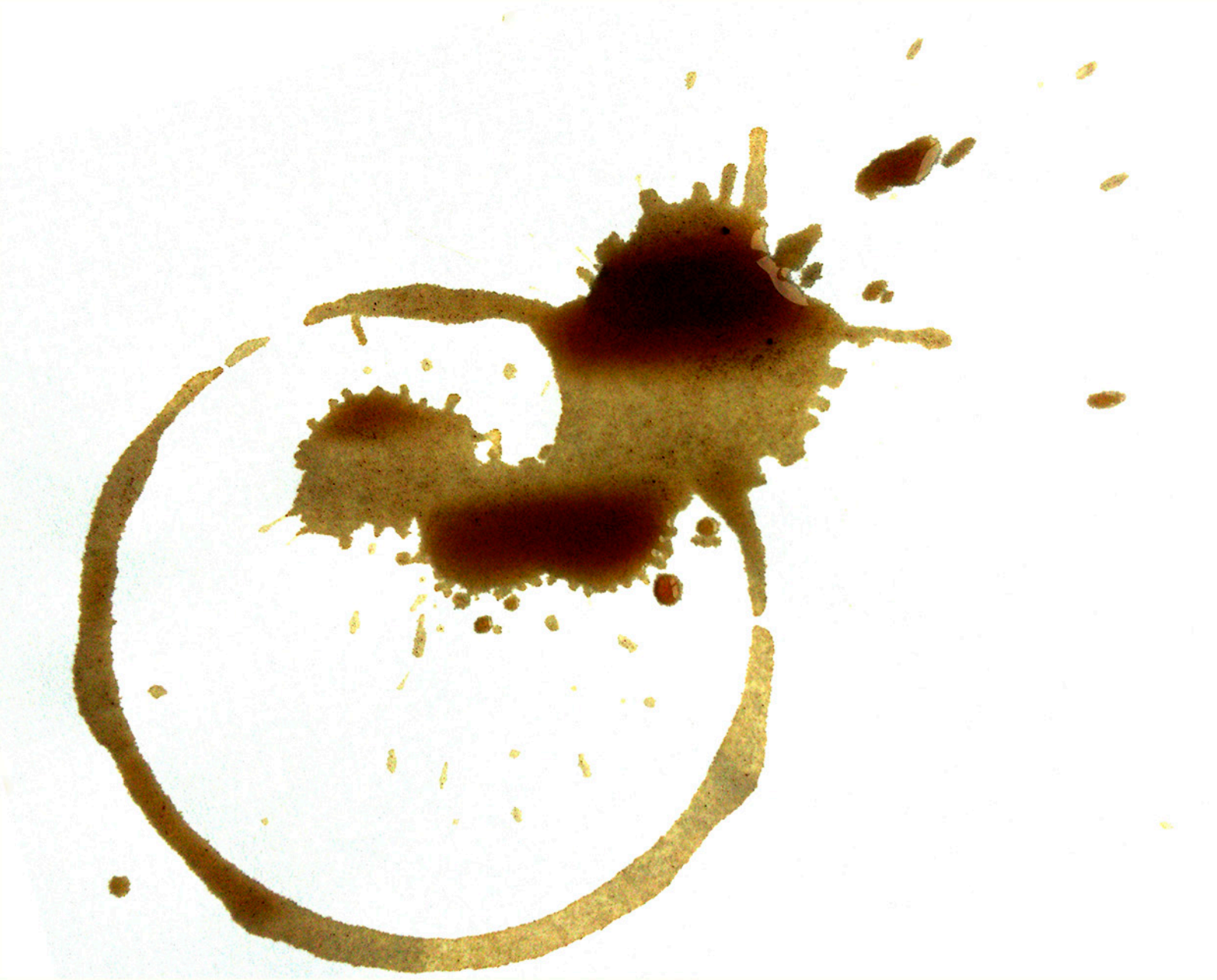
The Caffenol Cookbook

BIBLE



Vol. 1

The Caffenol Cookbook

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John Nanian
Jon Caradies
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Cover photograph "Coffee stain" by Bo´s phone.

Acknowledgments

by the Authors

This book has evolved over many months. During the slow and often interrupted evolution of this book, we have drawn on many sources, only a few of which we have the space to acknowledge here. During our time working with the many variations of coffee developers used in this book, many fantastic photographers and fellow experimenters from around the globe have inspired and surprised us with their unique experimentations and photographs.

We would like to especially mention and thank the following:

The Caffenol pioneers Dr. Scott A. Williams Ph.D., Rochester Institute of Technologie (R.I.T.) and his Technical Photography 1995 Class, Stephen Schaub and figitalrevolution.com, Apug.org, Larry (inetjoker) and all the members of the The new Caffenol Home for inspiration.

Kodak™, Fomafoto™, Adox™, Rollei™, Agfa™, FujiFilm™, Ilfordphoto™ Macodirect™, Fotoimpex™. and Moersch-Photochemie™ for the essential "raw" materials needed and for not leaving classic analog b/w photography totally abandoned.

Participation in *The new Caffenol Home and Other fun of Alchemy*, *Homemade Soup* and *Caffenol* Flickr groups has given us the opportunity to understand how coffeebased developing has evolved and captured the imagination of many in a global perspective. It has enabled us to work together with many avid experimenters and fantastic photographers, visit new places via some of the most incredible photographs created using Caffenol and participate in some very intense discussions on the use of and future evolution of the Caffenol developers. All these interactions were intellectually stimulating, provided new insights and always useful in getting an alternate perspective.

A few named, none forgotten!

October 11, 2012

“When I first heard about developing film with coffee I thought something like: oooh, the world is full of crazy people doing crazy things, but to be honest I regarded it as not more than a funny game. The pictures I saw in the web first confirmed that estimation, but some folks got pretty nice results. So I read more about Caffenol and about the happy union of coffee with vitamin-C. The first film I ever developed in Caffenol-C turned out very good, I was infected.”

- Reinhold G

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Foreword

by Mike Overs

It is not unusual for the writers of forewords to express surprise that they have been invited to do so, and since I am anything but radical, I will continue the tradition, by saying that I was astonished when Bo Sibbern-Larsen asked me if **I** would write this!

It was not only a surprise, but a privilege also, because I consider that the other photographers who have contributed to this book to be not only "kitchen alchemists", but also talented artists in their own rights. The word "other" is not a cloak of false modesty, but a mark of admiration for my fellow contributors.

Of all creative careers, or pastimes, photography has one of the widest of all spheres of interest - whether arts or science, within each of them are a myriad number of other more specific interests, and I am confident that this book will demonstrate that very clearly, as well as, perhaps, inspiring you to try it for yourself. Caffenol - What is it? Why would I want to use it? How do I make it? In this book you will find the answers to these questions, and, importantly, the answers will be given by people who have considerable experience of not only using Caffenol, but who have also been closely involved in making it into one of the most versatile, user-friendly, photographic developers ever!

Before you start on your voyage of discovery, I would like to say something about the nature of this book, in particular, the way in which has come into being. The contributors are from various countries, and this is an exact reflection of the way in which Caffenol has moved from being an obscure idea, kicked around in Rochester Technical Institute, in New York State, where the idea was first mooted, into a useable, everyday developer.

On a personal note, I am, by a sizeable margin, the oldest of the contributors to this book, and my early days were spent in the aftermath of the Second World War, not so bad a childhood in Britain as in many other countries, for sure, but still a period where foreigners were regarded with a mixture of mis-trust, animosity and fear, often quite openly expressed.

Sadly, there are still many places in the World where these same sentiments exist today, but for me, the pleasure of Caffenol is not only photographic, it is also the delight in being a member of a truly international group of people, whose individual talents increase the value of the whole in a way that would have been unimagineable when I was a child. Long may it continue!

La Gardette, France 2012

The Photographers

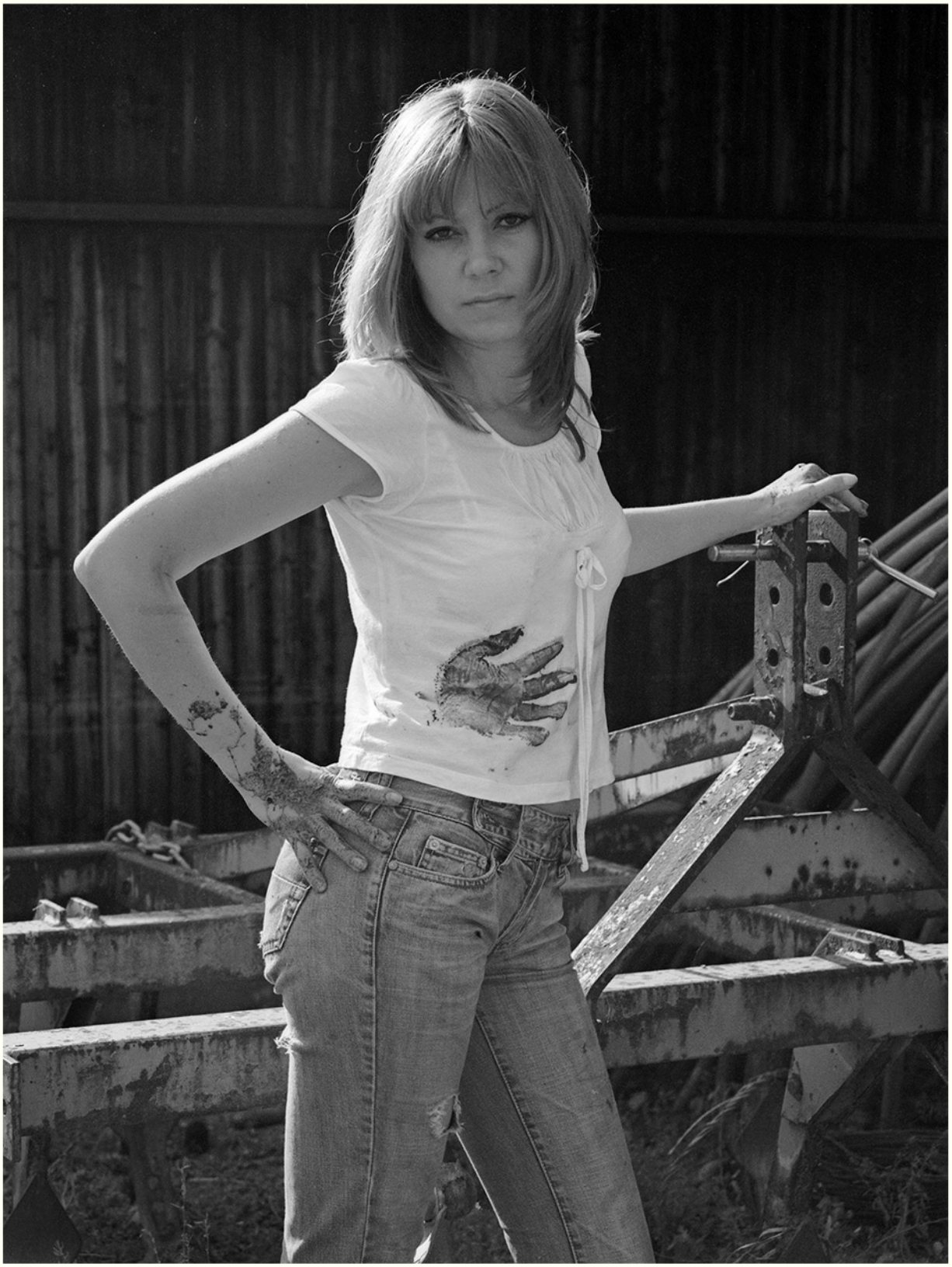
Reinhold G
Mike Overs
Eirik Russell Roberts
John Nanian
Jon Caradies
Gerald Figal
Martina Woll
Dirk Essl
Bo Sibbern-Larsen

Reinhold G

1.
Hibernation 2010
From my early Caffenol days and still one of my favorites, the very first image I published on my Caffenol blog. Voigtländer Bessa 66 from1945/46, uncoated Skopar, Fomapan 100, EI: 200, Caffenol-C-M, 15 minutes - 20°C / 68°F, regular agitation.

2.
Robert Wilson, singer 2010
Minolta X-300, Rokkor-PF 1.7/85 Fuji Acros 100, EI: 400,
Caffenol-C-M, 15 Minutes - 20°C / 68°F, regular agitation.

3.
Viktoria, a friend 2010
Minolta X-300, cheap 28-80 zoom lens Rollei Retro 80s, EI 100
Caffenol-C-L, 45 minutes stand development - 20°C / 68°F



Mike Overs

1. De-Restored
   Early 50's American made Kodak Reflex II, f3.5/80mm Anastar lens, X2 yellow filter. Rollei Retro 80S in Caffenol C: Crystalline Washing Soda: 20g. Instant Coffee: 20g. Ascorbic acid: 6g. Water: to 500ml. 15mins @ 21C

2. Shop Front
   1960 English made Kodak 66, f4.5/75mm Anaston lens, X2 Yellow filter. Foma pan 200 in Caffenol C: Crystalline Washing Soda: 30g. Instant Coffee: 20g. Ascorbic acid: 6g. Water: to 500ml. 12Minutes @21C.

3. Gatehouse
   1938 German made Kodak Duo Six-20, f3.5/75mm Kodak Anastigmat lens, X2 yellow filter. Fomapan Ultra 400 @800 in Caffenol C + Iodized salt: Crytalline Washing Soda:20g. Instant Coffee: 20g. Ascorbic acid: 6g. Iodized sea salt: 6g. Water: to 500ml. 5mins pre-soak, 18mins @ 21C

Stroud
Alarms
Lowe's
Picture Framing, Gifts, Prints & Mirrors
26
OPEN
9:30 - 5:00
MON - SAT

Eirik Russell Roberts

1.
Darkness at the edge of town - Sande I Vestfold, Norway 2011
Flexaret Va, Fuji Neopan Acros 100, EI 100. Pitch dark 2 min exposure. Caffenol-C-M, second film through the same soup. 12 minutes nominal, but this developed for 13 minutes @ 20C / 68°F.. Normal agitated development, 12 inversions initially, 3 every top of the minute thereafter.

2.
St Emilion Alleyway - St Emilion, France 2012
Leica M4-2, VC Ultron 28/f1.9, Ilford Delta 400 shot at EI400 in Caffenol-C-H 1g/l Kbr) for 13 and a half minutes @ 20C. Normal agitated development, 12 inversions initially, 3 every top of the minute thereafter.

3.
Lake Louise sunset - Alberta, Canada 2011
Flexaret Va, Kodak TMX, shot at EI 160-200 (Yellow filter). Caffenol-C-M (RS-40) for 16 minutes @ 20C. Normal agitated development, 12 inversions initially, 3 every top of the minute thereafter.

John Nanian

1.
The Cove Looking North - Occupasusatuxet Cove (Paswonquitte)
Equipment Used: Sears Delmar box camera, Exposure: Instantaneous
Film & Developer: Tmy sheets, Sumatranol 130 stand developed 20mins then tray shuffled 10mins, Paper & Developer: Ilford mgfb/Ansco130.

2.
Chepiwanoxet - Chepiwanoxet
Equipment Used: Sears Delmar box camera (4x5)Exposure: Instantaneous
Film & Developer: Tmy sheets, Sumatranol 130 stand developed 20mins then tray shuffled 10mins, Paper & Developer: Ilford mgfb/Ansco130.

3.
The Sparkling Tree - Cape Cod, Ma
Equipment Used: Leica m3, 50mm collapsible Summicron
Exposure: f/2 1/30s, Film & Developer: PlusX, CaffenolC 130 stand developed 30minutes, Paper & Developer: Film scan.

Jon Caradies

1. Rock and Water 2012
   Voigtlander Perkeo 2 w/ orange filter . Fuji Acros , Caffenol CM-RS (thanks again Eirik) 11 min. normal dev.

2. Sydney 2012
   Hasselblad w/ diopter , Fuji Acros , Caffenol CM-RS 11 min normal dev.

3. Rider 2012
   Voigtlander Perkeo 2 w/ orange filter , Fuji Acros , Caffenol CM-RS 11 min normal dev. incredibly bright day so I exposed it between a half and a full stop over to express that.

Absaroka County Rodeo
64
LUNGBUSTER

Gerald Figal

1.
Post-Agriculture, July 2011
4x5 Speed Graphic, 7" Aero-Ektar, Hoya R72 filter
Efke IR820 rated at EI 3, shot @ f-2.5, 1/30
Caffenol-C-L for 70 minutes, 20˚C/68˚F.

2.
Rolleing Retro Falls, June 2012
Mamiya RB67 with 50mm wide angle and Hoya R72 filter
Rollei Retro 80S rated at EI 3, shot @ f-16, 1 second
Caffenol-C-L for 50 minutes, 20˚C/68˚F.

3.
Backstory, April 2012
4x5 Speed Graphic, 7" Aero-Ektar, Hoya R72 filter
Maco IR820 rated at EI 3, shot @ f-2.5, 1/30
Caffenol-C-L for 60 minutes, 20˚C/68˚F.

Martina Woll

1.
Smoking 2012
Mamiya C330s - 80mm Mamiya Sekor S - Kodak Tri-X 400 (new) - 16 min - 20°C/68°F - Caffenol-C - 3x agitation every minute.

2.
Close Up 2011
Mamiya C330s - 80mm Mamiya Sekor S - Agfa APX 100 (expired) - 17 min 21°C/69,8°F - Caffenol-C - 3x agitation every minute.

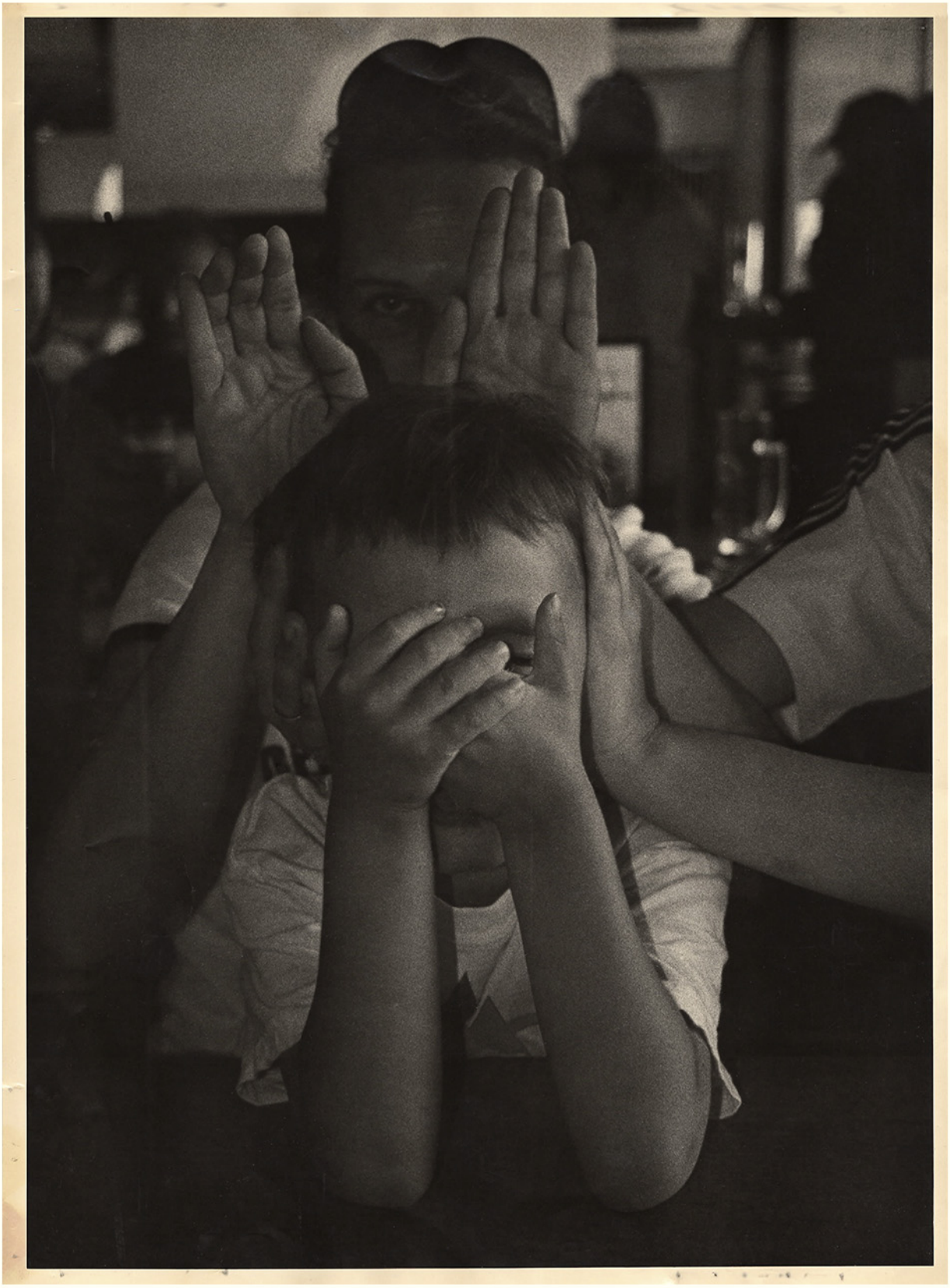
3.
Double Exposure 2011
Mamiya C330s - 80mm Mamiya Sekor S - Orwo NP 20 (expired 1992) - 14 min - 20°C/68°F - Caffenol-C - 3x agitation every minute.

Dirk Essl

1. Elevate!
   Leica M6 with 35mm/f2 Summicron ASPH, Ilford Delta 400, expired 1999, Caffenol-Delta-STD, 10min.@ 21ºC, 10 Inversions every minute. Scanned in B&W using a Plustek 7200i with Vuescan, PP in Adobe Lightroom.

2. Untitled.
   Canon EOS 3000N with Hartblei Superrotator 65mm/f3.5, Ilford HP5 Caffenol-Delta-STD, 12min.@ 21ºC, 10 inversions every minute. Printed on 1982 expired 8x10" Agfa Paper developed in Caffenol-Delta-STD on a Leitz Focomat V35 with matched 40mm Lens. Scanned with an Epson PX700W directly to an SD card with no adjustments.

3. Kettenkarussel.
   Zorki 4K with Jupiter8 50mm/f2, Kodak Porta 100T, Caffenol-Delta-STD, 14min. @ 21ºC - 3 Inversions every 3 minutes. Scanned in colour using a Plustek 7200i with Vuescan, no PP.

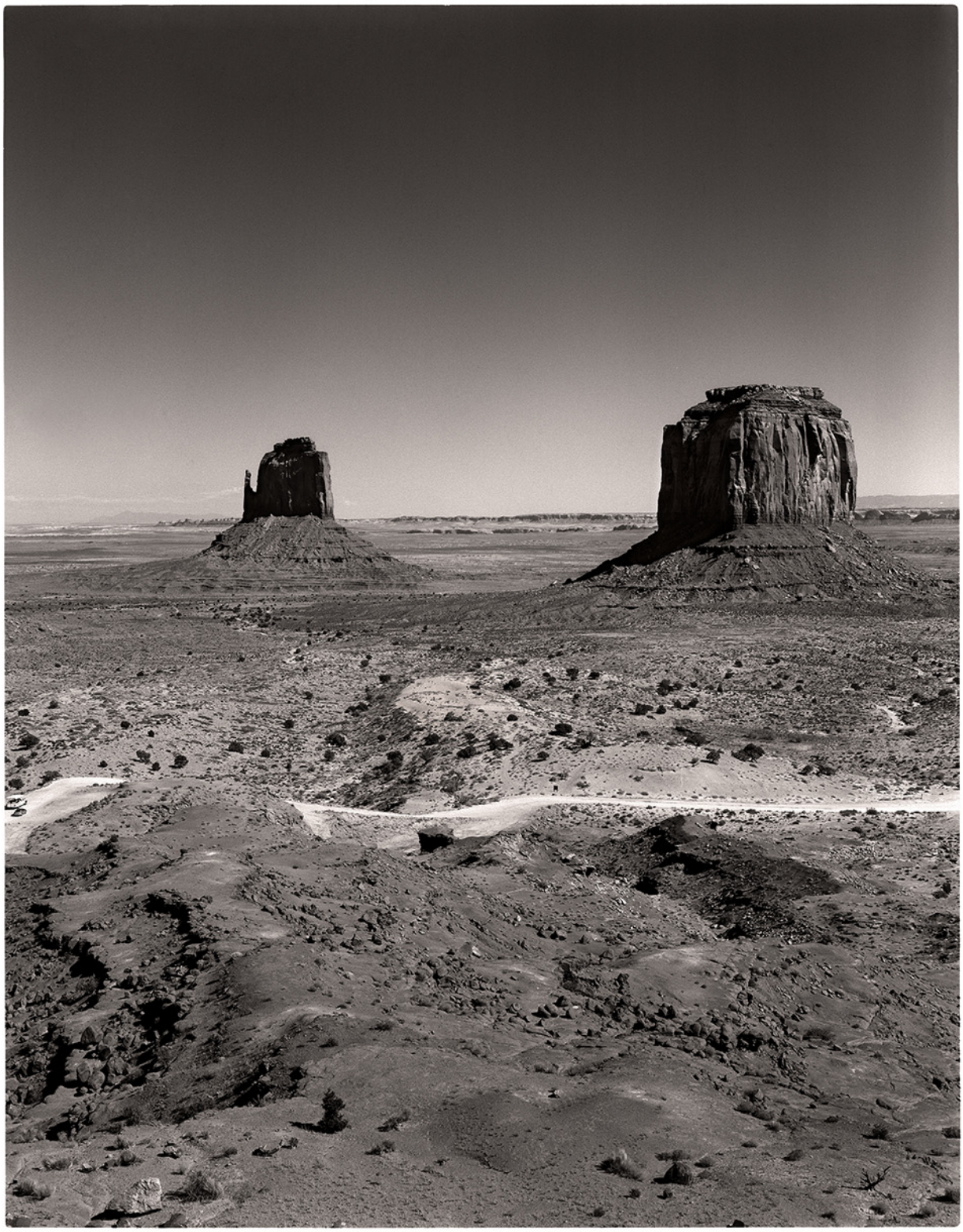


Bo Sibbern-Larsen

1.
Oljato - Monument Valley, Utah 2010
Linhof Tecknika IV, Voigtländer Apo Lanthar 150, Adox CHS 50, 4X5, Ei: 50,
Filter: Orange 4X, f/22-32 1/25s, Caffenol-C-L, 70 minutes - 20°C / 68°F.

2.
The Teepees/Spanish Skirts - Petrified Forest National Park, Arizona 2010
Linhof Tecknika IV, Voigtländer Apo Lanthar 150, Kodak TMax 100, 4X5, Ei: 100,
Filter: Yellow 2X, f/22-32 1/25s, Caffenol-C-L, 70 minutes - 20°C / 68°F.

3.
Tulshöj runestones - Västra Strö, Sweden 2012
Linhof Tecknika IV, Voigtländer Apo Lanthar 150, Foma Pan 100, 4X5, Ei: 100,
Filter: Yellow 2X, f/8 1 /25s, Caffenol-C-L, 60 minutes - 20°C / 68°F.



The Techniques

Ingredients
Recipes
Agitation Schemes
Stop Bath
Fixing
Washing
Printing
Scanning

Ingredients

The Ingredients

by Reinhold G.

The nicest thing about Caffenol is that you can buy the agents almost everywhere. In some countries you might have a problem buying this or that, but if you look close enough it should be possible. All ingredients are non- or very low-toxic and environmental safe. So if any government says you are not allowed to buy instant coffee, washing soda, pure Vitamin-C, potassium bromide or iodized salt - that's BS, period. Some do instead, and also in my country it has become more difficult to buy bromide, but it still isn't illegal at all and you can get it in pharmacies if you friendly ask an older pharmacist who remembers that there was a time before 9/11 and not all men were terrorists.

Of course you should take the basic precautions, f.e. not whirl up washing soda powder and inhale it or let it go on your eyes. Also you probably don't want your children to eat bigger amounts of instant coffee crystals, so keep things out of reach for children.

Instant coffee: granulate (crystals) with some air included. Buy the cheapest brand you can get. More expensive ones might not be so good. Get the "strong" labeled version if possible. Not the "mild" ones. The active substance in coffee is not caffeine but caffeic acid, that probably behaves similar to the very toxic pyrogallol and is a very compensating developing agent. I tried some cheapest brands here in Germany from Aldi, Lidl and other supermarkets. They all taste the same (awfully) and they are all made by the same company (Deutsche-Extrakt-Kaffee). So it shouldn't be a problem to get reproducible results. 200 gramms for about 3,60 Euro. It has become more expensive since I started the Caffenol thing, but still Caffenol is very affordable here.

Vitamin-C: ascorbic acid, the second active developing agent. Works probably similar like Hydrochinone, giving more contrast and is hyperadditive to caffeic acid. Also reduces fog and of course developing time. Whenever possible, buy pure Vitamin-C, small crystals. Here I buy 100 gramms for 2 - 3 Euro, available in any pharmacy and many supermarkets. Don't use vitamin pills or tablets, there will be other substances added and you might have to adjust the recipe. Buy only pure crystals for reproducible results. Ascorbate, the salt of the ascorbic acid, is used also in a famous commercial developer. Ascorbic acid will be transformed to ascorbate while diluting in an alkaline dilution, indicated by gas bubbles (CO_2) appearing.

Washing soda (sodium carbonate): Soda is used for making the solution alkaline, that is important for activating the developing agents.If you experiance problems with a Caffenol development, most probably the washing soda is to blame - or the man who bought the wrong one or didn't care for the differences. Sodium carbonate (Na_2CO_3), is available in different versions, the so called "waterfree" or "anhydrous", the monohydrate and the decahydrate and - to make things completely nuts - the french version is a mixture of the aforementioned and contains about 50 % water. How can you determine which kind of soda you got?

Waterfree soda is provided as a fine white powder. If you have crystals, it will be either the monohydrate or decahydrate. Take a small amount of your soda, let's say 10 gramms, determine the weight and put it in the oven above 120 °C. If it looses weight after some time, you have a hydrate. I tested my waterfree soda and it only looses about 2 or 3 %, neglectible. If you loose more than 50 % of weight, it's the decahydrate. Above 34 °C the decahydrate turns to monohydrate, above 107 °C the monohydrate turns to waterfree soda. When you don't loose weight anymore, all the water has evaporated and you now have pure waterfree soda.

Heating might take 30 minutes for a small amount.

Once determined which kind of soda you have, you can use every kind. Take 1.2x the weight (!) for mono- and 2.7x the weight (!) for decahydrate compared to waterfree. Look, if the recipe is specified for a specific kind of soda. If not ..... Volumetric measuring is not possible, the scientifically determined densities are not usable because they don't regard the huge and very differing amounts of air between the crystals/powdergrains. Some people claim that f.e. decahydrates weighs xyz gramms for a teaspoon and that will be reproducable all over the world. Believe me, it's not!

Some people don't care about these differences and get somehow developed negatives. That may be OK. But if you experiance problems, here is the reason why for 99 %. Washing soda is the winner hands down if you do not get the results you want or expect. Available at drugstores, supermarkets, zoo shops, swimming pool suppliers. Here at drugstores less than 1 Euro/500 gramms.

Restrainer - anti-fogging agents: Potassium bromide: a restrainer needed for fast films or stand development. Cures any problems if you should experiance uneven development. Reduces base fog significantly. If you can get it, get it! First choice.

Iodized kitchen salt: a suitable replacement if you can't get bromide. Use about 10 times of the amount of bromide. Second choice.

Regular kitchen salt, non-iodized: a suitable replacement for iodized salt. Use about 20 times of the amount of bromide. Third choice.

Order of dilution: I always dilute first the washing soda and then the Vit-C. Why? The Vit-C must be transformed to ascorbate by the alkaline soda and that makes bubbles and the process shouldn't be disturbed imho. Stir until all bubbles have gone! Furthermore you get much less foam when diluting the coffee. Now add the instant coffee. Proper diluting may take 5 minutes. This order of diluting I find to be very important! Bromide or salt I add at last, but that probably doesn't really matter.

So, you can do the teaspoon thing and forget about all the rubbish I told you here. If it works for you, enjoy and it works. Personally I would highly recommend buying a small precision scale (10 - 20 Euro here), and don't forget to check your soda. Some recipes simply demand correct measuring. Anyway, Martina here is the best example that you can become happy with Caffenol without a scale. It's just not my cup of tea. I want to push HP5+ to EI 3200 or develop the delicate Kodak Technical Pan in Caffenol and get great results! I simply can't do that without a scale.

First and only rule: have fun! Shooting film is fun. Developing film at home more fun. Developing at home with a self brewed developer is the biggest fun - almost ;-)

Baden-Württemberg, Germany 2012

Recipes

Caffenol Metric

The Origins of Caffenol

by Reinhold G.

There are some hints that coffee was (ab)used for film development since the time of the second world war, but started to become popular in 1995.

When asking myself who invented Caffenol, I stumbled across an article by Dr. Scott A. Williams Ph.D., Rochester Institute of Technologie (R.I.T.).

The Technical Photography 1995 Class under the leadership of Dr. Williams should research non traditional developers based on household ingredients and after some unsuccessful trials they decided to test drinks with caffeine like tea or coffee. Coffee was the winner and that was the beginning of coffee based developing. They used baking soda and potassium hydroxide for buffering the pH of 9. The name Caffenol had not been created yet at this time.

If you want to read the original article, look here:
people.rit.edu/andpph/text-coffee.html

And a picture of the Caffenol pioneers can be found here:
caffenol.blogspot.de/2010/06/who-invented-coffee-based-development.html

We now use the more convenient washing soda as pH adjusting agent, and the later addition of Vitamin-C since about the year 2000 improves the image quality dramatically.

Baden-Württemberg, Germany 2012

Recipes Caffenol-C-M, C-H, -C-L

	Caffenol-C-M	Caffenol-C-H	Caffenol-C-L
Washing Soda, waterfree	54 g/l	54 g/l	16 g/l
Vitamin-C	16 g/l	16 g/l	10 g/l
Potassium Bromide Kbr	X	1 g/l	1 (– 2 g/l)*
Instant Coffee	40 g/l	40 g/l	40 g/l
use for	low to medium speed film up to 100 ASA, speed enhancing, use push 1 or 2 as starting point	general purpose, speed enhancing, low fog	General purpose, speed enhancing, stand- development, low pH, low fog, small grain, high acctuance
time 20 °C	15 minutes as a starting point	15 minutes as a starting point	70 minutes as a starting point
agitation	standard, 10 times initially, 3 times every minute	standard, 10 times initially, 3 times every minute	10 gentle turns initially, then let stand
remarks	easy to brew, easy to get, quite foolproof		* Use more than 1 g/l only if you get uneven deveopment. Presoak 5 minutes. Simply the best!
general remarks	Coffee needs a couple of minutes for proper diluting, don't store the mix, use immediately, add agents in given order, use demineralized water if in doubt, adjust times for different temperatures, check temperature after diluting the soda. Standard international units used, recalculate for your preferred units, measure with accuracy especially Caffenol-C-L. **HAVE FUN!!!**		

Caffenol -C-M (rs)

by Eirik Russell Roberts

RS, what is that?

Serendipity yet again

When starting out with Caffenol I, like many others, based by efforts on Reinhold's wonderful recipes (you'll find them under the Recipes, Metric section). But being a lazy sod, I tried to find a way of not having to go through the rigmarole of measuring up, mixing, letting cool etc, every time I wanted to develop a roll or two. Instead I prepared beforehand three solutions, ready to be mixed together whenever (see my blog for details) I wanted to develop a film. In principle this is easy, just make sure everything is triple strength and measure out all mixtures 1/3 each when developing. However, there are some drawbacks. One is that the coffee mixture develops mold in a matter of weeks, the ascorbic acid oxidises, and the high concentration sodium carbonate mixture will form crystals if stored in less than approximately 60F/15C. The first two I knew about and when to mix new, the latter I did not to begin with. Which is how I came about developing the RS versions.

Without my knowing I developed a roll of TMX, in what I thought was my regular Caffenol-C-M mix. I in fact ended up with a lower pH version, due to crystals having formed a layer of sediments in my ready-made sodium carbonate mixture, leaving the rest of the solution less concentrated. The results were really quite something. The compensating effects of Caffenol have been likened to Rodinal, in other words not very compensating, but yet still very much present. The lower pH seemed to have increased the compensating effects somewhat, making for lower contrast negatives. When scanned and processed these looked fantastic. Highlights were well controlled, a full spread of tones, and even shadow detail to boot. Grain seemed to be less pronounced too. My three examples images in this book are all developed in RS versions. Jon's pictures are developed in another version of his own making, and Mike too at times uses his own reduced sodium carbonate solution.

The recipe

This warranted investigation. After a bit of detective work I found the culprit. I have since then experimented with various amounts of sodium carbonate, and found that about a 75% concentration compared to Reinhold's standard Caffenol-C-M and H recipes works very well. My versions are but small variations of the original, which is why I decided to keep Reinhold's nomenclature, adding the RS designation indicating that these are Reduced Soda (soda = sodium carbonate) mixtures. I.e Caffenol-C-M(RS), Caffenol-C-H(RS) etc.

To sum up, use the Caffenol-C-M and Caffenol-C-H recipes and reduce the sodium carbonate to 40g/l (instead of 54g/l). All else equal. Indeed, I have not really adjusted my developing times either, but then again I shoot at more or less box speed most of the time, whereas the original recipes are designed to enable at least a 1-stop push. 100 speed films shot at box speed I develop for approximately 12-13 minutes. 400 speed films 14-15 minutes (Caffenol-C-H remember). Regular agitation scheme, and at 20C/68F.

Films tested
Of the films I have tested, most seem to work well with RS recipes. To name a few that I find work very well. Fuji Neopan Acros, shot at EI 100-160. Kodak TMAX 100 (TMX) at EI 100-160. Ilford Delta 400 at EI 400 mostly, but can work at 800 too. Kodak Tri-X (old and present versions) at EI 400. Ilford HP5+ at EI 400. Shanghai GP3 at EI 160.

Good luck.

Sande i Vestfold, Norway 2012

The Delta Recipe and about Caffenol in general

by Dirk Essl

When I first started caffenol, there where not so many recipes on the net, I think there where about 3 websites that had some information about caffenol. One of the best ressources at the time for me was digitaltruth, as they had a huge table about different films in different developers and also a caffenol recipe. They also have an iPhone app with the whole database in the palm of your hands which doubles as a developing timer. You can even store your own presets and so I started using it, noting down my experiments in the app, setting up presets.

The first recipe I ever used was without Vitamin C. I bought a Rodinax bakelit daylight developing tank on ebay and a Voigtlaender Vitoret DR on the fleamarket. I grabbed some expired Ilford Delta 3200 and shot a whole role of boring things around in my house. The rodinax tank requieres a film with the filmleader still being out, so I carefully rewinded the film, inserted it into the tank and mixed up some caffenol. 4 teaspoons of instant coffee and 2 teaspoons of washing soda. I poured in the developer, and turned the crank. the manual says you have to turn the crank every 30 seconds (as the developer only fills in the lower half of the tank) but me being a lazy person, I just turned whenever I felt like it. After about 30 minutes I fixed and washed the film.

When I removed the film from the tank, I was stunned. After a 20 years break, I developed film in my kitchen, using stuff, that (beside fixer) can be found in it. It was addiction from the first shot! It being weekend and having no scanner for negatives, I made a slide duplicator out of cardboard, black tape, a 50mm lens and some macro rings. So even if you don't have a scanner, you can easily make 'scans' of your negatives at nearly no cost.

And so it began. I registered caffenol.org, installed wordpress and began to blog about my findings about caffenol. I started doing a lot of experiments with loads of different films trying to find the perfect caffenol recipe for me. It was no way scientific and somewhat chaotic, but it was so much fun. At some point I was mainly shooting Ilford Delta 400 and all my developments looked really good so I decided to stop experimenting and give this recipe a name. The Delta recipe was born.

The Delta Recipe for no scientific reason or knowing the Ph value of the mix, uses quite some amount of Vitamin C, but less washing soda then Caffenol-C-M, which I didn't even know it existed at that time. I find it quite amusing that two Germans without knowing each other did the same thing at about the same time.

As I knew I had a recipe that works I eventually experimented again. I doubled Vitamin C, (for Ilford HP5 Plus), I tested two step developing after reading about diafine (caffeafine), tried Microfilms in caffenol (Caffenol-MICRO) and always wrote about my findings. **I** invited other photographers to show their work on my site, and posted my pictures in the caffenol group on flickr. I wanted people to experiment. I wanted people to slow down, have fun and enjoy anaolog film developing.

Caffenol today? It rivals other commercial developers and in many countries it is easy to buy the ingredients. The whole caffenol movement has built up great communities which help each other out if some things are not available in their country. I know quite some people that came back to film through caffenol. It is something new, even if it has been discovered decades ago. It makes your photographs even more handmade, more alive. I am proud to be a part of the caffenol world in which I met so many nice people, weird scientists and very talented photographers.

by Dirk Essl

The caffenol.org recipes:

Delta Recipe for 1000ml stock (Delta-STD)

Mix Coffee and Soda seperate, as it makes it easier to see if the Soda is completely dispersed.

1000ml (1l) Water
45g Instant coffee
24g Washing soda
20g Vitamin C

Let solution stand for about 5 minutes to clear microbubbles.
9:00 – 11:00 minutes at 20 degrees, fix and rinse as usual.

Delta MICRO for 1000ml stock (Delta-MIC)

For high contrast Microfilms I have made some adjustments to the Delta-STD recipe, but I don't think that I am there, yet. Here is the current recipe for 1l stock:

1000ml (1l) Water
22 grams instant coffee
32 grams washing soda
10 grams Vitamin C

Let solution stand for about 5 minutes to clear microbubbles.
9:00 – 11:00 minutes at 20 degrees, fix and rinse as usual.

Caffeafine (two step developer)

A:
240ml Water
7 rounded Teaspoons of Instant Coffee

B:
100ml Water
4 Teaspoons of Washing Soda
2 Teaspoons of Vitamin C

Put the Coffee mix (A) into the developing tank, agitate once per second for the first minute leave it for another 2 minutes, agitate for 10 seconds every minute.

Pour out 100ml of Water and add the Washing Soda mix (B).
Agitate once per second for the first minute
Agitate for 10 seconds every minute for 9 minutes
Stand development for another 4 minutes.

Caffenol Volumetric

Caffenol - Volumetric

by Martina Woll & Jon Caradies

Without photography life is nothing!
I am self taught, I never studied photography, nor am I trained in it or have learned any photo books by heart. I think that you shouldn't waste with that theoretical stuff ;) I was never interested in the theory or the technology i am working with, I have my camera(s), my eyes and my heart.

How it all began.
I'm not an expert in developing of black and white films, my beginning with "the real" chemicals (Rodinal in my case) was a sobering experience, my experience was rather limited. I developed a couple of films with Rodinal, unfortunately I never monitored the water temperature during fixation and I was surprised by the results accordingly. Although I like to try new things, I'm an impatient person and if something does not work the first time, I move on.

After a long time without developing by myself, I read about the development with coffee. I doubted that it was serious,but found it interesting, funny and I had to try it, of course. It had certainly aroused my curiosity and I wanted to reattempt to develop my own films. So I went to the nearest supermarket and bought instant coffee, washing soda and vitamin C powder, the main ingredients of Caffenol-C.

I work with the following recipe for my Jobo tank with 480ml capacity:

9,5 slightly heaped teaspoon of instant coffee
4.5 slightly heaped teaspoon of washing soda
0,5 teaspoon of vitamin C powder

I mix it all together in the Jobo Tank, shaking it thoroughly and leaving it to rest for about 10 minutes, so that any foam eventually will disappear. The broth will heat up slightly and does not smell very pleasant. I'm using the same developing times as if I would work with Rodinal. And more importantly, I´m always using the same amount of Caffenol-C for every film; I only change the developing time. 17 minutes for APX 100, 14 minutes for Kodak Tri-X 400 and so on. My fixing time for 6x6 films is 4 minutes, for 35mm films 3 minutes. And I don't use stop bath, I only rinse the film with plain water between developing and fixing.

I was very excited when the first film was finally drying in the bathroom and I could see the negatives. And I was very happy with the results, great tones, fine contrast (at least in my eyes compared to my previous pictures from the lab!) and I did not need to work them out on the computer.

Well - and since then, I'm addicted to coffee.
For me the analogue photography is a big experiment. While many people are fixated on technically perfection, I do like pictures with charme, which may include lightleaks or exposure errors. But that of course does not mean that you couldn't do technically perfect analogue photography!

Saarbrücken, Germany 2012

Caffenol - Volumetric

by Martina Woll & Jon Caradies

About two years ago I was looking at photos on flickr when I ran across one that had these great qualities; Amazing shadow detail and this watery smooth grain that was gorgeous. I'd found that it was developed in caffenol, which I'd never heard of. So I started researching caffenol and soon found Reinhold G's blog. COOL !!

It being European, I had to go about finding the equivalent ingredients here in New Mexico, which was not hard at all. The next step was to convert Reinhold G's recipe from weight to volume . In America, kitchen scales are rare (in fact I've never seen one). Knowing that Soda , vit. C crystals, Salt and Coffee all have different volume to weight ratios, rather than drive myself crazy , I just rounded everything off to 5 grams = 1 teaspoon. I mean how exact does it have to be , right?

Here is the Caffenol CM-RS recipe I use:

500 mls tap water @ 70 deg. F.
4 tsp. arm and hammer washing soda (not baking soda)
1&1/2 tsp vitamin C powder
1/2 tsp iodized salt (mortons)
5 rounded tsp cheap instant coffee (the cheaper the better and not decaffeinated)

Mix in that order and let sit for 5 minutes.
Pre-soak film for 5 min in 70 deg. tap water.
Develop for 11 minutes - agitate for the first 30 sec. then a couple inversions every 30 sec. till done.

Works best with 100 iso or slower film!

New Mexico, USA 2012

Sumatranol130

by John Nanian

First I have to do the whole disclaimer thing ...
I have realized over the years when people ask me how I do something, or how I get a certain effect good or bad, they try what I do themselves and come up empty, or dissatisfied with their results. Nothing worked as they imagined and it seems to have been a big waste of time ... Film ruined, or paper wasted ...

The way I do photography is kind of like my eyes closed and I am feeling around in the dark. Even though I have a science - interest (I was going to become a Microbiologist or a Geneticist or something similar before my interests changed in college) and I know how important observation, and measuring and repeatable results are ... I take a different approach: I allow whatever is going to happen to happen. Sometimes it is good, sometimes it leaves me wondering what I was thinking. Eventually I go back to the film and figure out a way to use it. I do this it again, and again and again ... Sometimes things repeat sometimes they don't. I make the best of things ... All this to say is that my methods aren't written down, I am just doing something familiar ... And if you try my methods maybe they will work, maybe they won't.

I am not the most exact recorder, precise measurer, pay good attentioner kind of person out there. I observe , but I don't really use a scale and take notes ... It is funny because there are people who are real scientists and measure exact amounts of Coffee, and Sodium Carbonate, and Water, and Vitamin C. They are very on top of things when it comes to using coffee as a developer. they have names like Caffenol LC, and Caffenol CH, and these people are really into the science of how and why Caffenol works. They get perfect and repeatable results ... They are the KINGS of Caffenol !

I am the opposite ... My coffee, it is not the usual local super market generic brand (I do have a jar "just in case"), I roast my coffee instead. My beans are brewed like regular coffee .. Nothing fancy ... I course grind the beans coffee and brew them in a percolator and they are the only things I measure. Usually I brew 11 scoops of coffee and 10 "cups" of water just like if I was to drink it. Sometimes I am a little off, I use less water, or more coffee ... I don't worry about it ... Sometimes I brew it a few times .. Sometimes just once. When the coffee is cold, I bring it to the darkroom, and put it into a large plastic bucket and I pour in a large scoop of Sodium Carbonate. It is A&H, in a cardboard box that is open, so it is probably getting closer to baking soda. I use a 4 oz baby food container (plastic rectangle) to do the scooping ... I stir it a little bit with a big wooden spoon and and then I add in powdered Vitamin C. I have used expensive pharmacy grade Vitamin C, and I have used health food store grade as well, now use Trader Joe's generic brand and it works fine. I use around the same amount of Vitamin C as the washing soda, maybe a little less ... It starts to foam like mad ... I stop and stir ... Then I brew a second 10-cups of coffee and add it in when it is cold.

After the Coffee, Sodium Carbonate and Vitamin C are all mixed together, I usually add about 10-15c of Ansco 130 print developer. While I have used Caffenol without Ansco 130 with good success I like to add in the 130 because it tends to add a little contrast and stain when I process film ... It takes the edge off and smoothes everything out. A lot of people don't bother adding any print developer in when they make their Caffenol, and it works great. People actually insist that it is the Ansco 130 that is processing my film (and prints) but I have used just Ansco 130, the same dilution (15cc:750cc) with water and it didn't process my film at all ...

So who knows ? Maybe it is, maybe it isn't?
Maybe it is the Vitamin C and the Sodium Carbonate boosting the Ansco 130? Maybe it is all the stuff together? I don't know, and to be honest, it really doesn't matter to me as much as it matters to others. I like the results I get, so I keep doing what I am doing ...

When I develop film ... I make sure there are no solids (there are usually chunks of Sodium Carbonate that didn't dissolve in my bucket so I remove them) ... With roll film, I do a pre-wet at around 70ºF ... And try to get my developer around that temp. (Ansco 130 likes it warm) If the developer is colder, I don't stress about it, it isn't that important. I usually don't agitate much ... Maybe a few inversions and a knock on the counter to dislodge air-bubbles ... I leave the room for about 25-30mins. Sometimes I agitate for a few inversions at the end out of boredom, but most of the time I just pour out the developer and save to reuse it (I re-use it for a few months without replenishment). I rinse my film off with water (fill + dump a few times) and to the fix it goes. With sheet film I often times stand develop in big plastic slotted "FR Tanks" the same way as I process the roll film. Sometimes I agitate in trays for around 15mins. Unlike my roll film, my sheet film sometimes comes out very dense, maybe because I over expose on a regular basis by a few stops I usually shoot everything between 1/15th second and 1/60th second ... (Again, I don't worry about it) I enlarge the roll film sometimes, it scans well too. I contact print the sheet film, with a flood light on RC or FB paper as well paper I hand coat with emulsion.

Caffenol purists sometimes cringe when I tell them my routine. I like it low key and hands off. I get OK results, and really can't complain.

Pros and Cons ...

Pros:
Well, it is fun to use random ingredients, and getting good results. I have grown fond of roasting coffee in the kitchen and filling the house up with smoke. The way the film looks with Caffenol is beautiful: The grain has a nice feel, and the tonality of the negatives is something that prints easily. I have to admit, it took me a while to get used to the film though, it might look weird to some, it doesn't look "normal" like a D76 negatives, it is kind of foggy and thinnish. When I use sheet film, it really allows me to exploit the film: It is kind of rough, not smooth like digital.

Cons:
If you are a newcomer sometimes it doesn't work, mainly because you mixed the wrong ingredients. There are lots of brands of coffee to sift through, Sodium Carbonate isn't available everywhere, and Vitamin C sometimes has additives in it. When making prints with Caffenol, it takes 2 minutes or more for a image appear instead of 1 minute.
It smells bad ...

I can't really say much about it that is bad because it is a fun, easy to make, and forgiving developer.

Rhode Island, USA 2012

Agitation Schemes

Agitation suggestions for Caffenol

by Bo Sibbern-Larsen

Depending on your chosen Caffenol developer, the recommended agitation scheme varies and is as always when developing b/w negatives, an intricate and important part of the procedure. Without agitation you'll get underdevelopment, since the developer that is in contact with the film quickly will become exhausted.

You can also use the agitation to actively control the contrast of your negatives by using a less vigourous scheme for a softer result or a more active one for a harder contrast, useful for those times where you know beforehand that the scene you photographed needs a contrast adjustment.

To standardize agitation or not, that´s the question.
You will eventually work out a personal agitation scheme, best suited for your own particular workflow. But if you have just started developing b/w film in Caffenol or simply need a pointer, you will find the most commonly used agitation schemes for daylight tanks recommended by the authors of this book listed below.

Caffenol C-M, C-H, C-M(rs) & C-F:
10 inversions initially, 3 inversions every minute.

Caffenol C-L (semi stand)
10 inversions initially, 3 gentle inversions at the 1, 2, 4, 8, 16 and 32 minute markers, let stand.

Caffenol C-L (full stand):
10 inversions initially, let stand.

Sumatranol130:
Don't agitate much.. Maybe a few inversions and a knock on the counter to dislodge air-bubbles.

Never overdo agitation!
It can have adverse effects like burning out the highlights and induce reticulation, which - normally - is not a desirable result. The developer loses energy in the highlights areas towards the end of each development period, only to be recharged by fresh developer running over the film with your next inversion. Longer time between agitation cycles provides for compensation effects, which is exactly why Caffenol C-L semi or full stand developing is so effective in retaining a wide scale of tones even with overexposed negatives.

So if your highlights are where you want them to be, continue on with your chosen scheme. If they blow out occasionally and maybe even the shadows are blocked, change is definitely called for and you´ll have to try with a less energetic agitation scheme.

Remember, consistency is the keyword.

Sibbarp, Sweden 2012

Stop Bath

Acid stop bath or just plain water stop bath?

by Bo Sibbern-Larsen

Certain "old school" emulsions are very very delicate and especially the Foma Pan emulsion is prone to black spots in the negative - dandruff/white specks on prints/scans when using an acid stop bath, even at very dilute concentrations. It may be a negative sideeffect of the ingredients in Caffenol in combination with the Foma emulsion, I really don´t know.. I haven´t had any similar problems with any of the other films that I´ve used so far.

With Kodak Tmax 4X5 and Rollei RPX 100 roll film I´ve used an acid stop bath at stock strength without any mishaps, with the extremely delicate and scratch prone Adox Art 4X5 films I´ve used an dilute stop bath (1-300), without any negative results at all, but when I tried the exact same dilute stop bath (freshly mixed of course) with the Foma emulsions, I had massive black spots/dandruff that took hours to spot out, I even blamed Foma at first until I realized that the probable culprit was the acid stop bath. Amazing how such a minute amount of acidity could produce such disastrous effects/results, just goes to show that this particular emulsion is indeed VERY finicky.

So what to choose?
Depends I guess.. If you´re planning on only using modern emulsion films like Kodak Tmax ,Fuji Acros or Ilford Delta etc. I´d probably go for a stock acid stop bath. But if you like me tend to change film every now and then, also including the Foma films and like me favor a certain degree of reproducibility and standardization in your developing workflow, then perhaps it´s best to incorporate a plain water stop bath from the start. Better safe than sorry right?

Another benefit of a water stop bath is, personally I use an alkaline fixer mainly because I want to keep as much of the Caffenol stain as possible and somewhere in the back of my head adding an intermediary acid bath seemed counterproductive, as any acidity would invariably remove some of that stain just like when you develop in Pyro, so I ditched the acid stop for good and only use a plain water stop bath now, for any film that I might choose to buy.

Here´s how I go about it:
After developing is finished, I immerse the negative holder into my semi deep tank filled with plain water, agitate continuously by lifting the holder up and turning it 180°, for a minute and then let the water run off for about 15-20 seconds before transferring the negative holder to the fixer and that´s it, it only takes about 45 seconds longer!

Of course if you´re using rollfilm and spirals in something like a Paterson or Jobo tank, your modus operandi will be different. Then it´s just a question of pouring in the water, agitating for a minute and emptying the tank after that, perhaps even doing it twice for good measures.

"After all it´s not rocket science!"
But eliminating any possibilty of negative defects due to the stop bath allows you to move on in your quest for the best possible negative, leaving room to concentrate on finetuning other more important aspects of your creative process..

Sibbarp, Sweden 2012

Fixing

Fixing Caffenol developed negatives

by Bo Sibbern-Larsen

Choosing the appropriate fixer and fixing your developed film.

A fairly straightforward process.
Or so you would think, it depends on whether you´re using a non-hardening or hardening, an alkaline or acidic, rapid or slow acting fixer, the process temperature and of course, the type of film you´re using. If you´re mainly interested in seeing results and have little to no intentions of overcomplicating (like I do) this relatively simple part of the process but just need to get started with the Caffenol developer itself, there is absolutely no shame in skipping this chapter, getting the most readily available fixer and just start using that. Many fellow photographers don´t bother with the type of fixer and they achieve brilliant results regardless.

However, if you would like to try something different or you´re new to developing your own film, you will find 2 different film manufacturer recommendations, well proven standards and my personal approach listed below.

Ilford:
"A fixer hardener is recommended only when processing at high temperatures (above 30°C). As a general rule, keep the fixing time constant as the temperature increases. This will ensure adequate fixing and no harm can be done by over-fixing the film.

In general, fix film for twice the time it takes the emulsion to clear. To find the clearing time: let a drop of fixer act on a piece of unprocessed film for about 30 seconds; immerse the film in fixer; the time it takes for the spot to disappear is the clearing time. Fixing time must not be more than four times the initial clearing time."

Kodak:
"Agitate continuously for the first 30 seconds and at 30-second intervals after that with a hardening fixer. Fix for twice as long as it takes the film to clear (lose its milky appearance). See instructions for the specific fixer.

IMPORTANT: With KODAK PROFESSIONAL T-MAX Films, fixer will be exhausted more rapidly than with other films. If negatives show a magenta (pink) stain after fixing, fixer may be near exhaustion, or fixing time is too short. If the stain is pronounced and irregular, refix the film in fresh fixer."

Fixing isn´t just fixation..
Personally I use a odorless non hardening alkaline ammonium thiosulphate based rapid fixer, **I** really want to keep as much Caffenol stain as possible, an acidic fixer could remove some of that stain and I don´t want any foul smelling liquids in my tiny darkroom either. I always mix fresh fixer before each new session, unless **I** have more film to develop shortly after the same day or if **I**´m doing a test. Silver precipitates out of the fixer if left to stand for an extended period, it sticks to the next film and can´t be washed off causing white spots on your positive. Trying to remove it physically will inevitably cause scratching.

Sibbarp, Sweden 2012

Washing

Washing Caffenol developed negatives

by Bo Sibbern-Larsen

The black-and-white film consist of metallic silver imbedded in gelatin. Gelatin is used because it is flexible but most of all porous; it allows chemicals to particulate in and out of the structure while keeping the metallic sliver in place. The porosity of gelatin is enhanced because gelatin swells when wet and shrinks back down when dry.

The metallic silver in the developed negative is stable, however it is subject to attack by airborne and residual substances. The worst enemy is sulfur, in heavily polluted areas prints quickly stain due to airborne sulfur. Fixers contain sulfur, so degradation of your precious negative is a danger if the film is insufficiently washed.

What´s the best way to remove residual fixer and avoid a contaminated negative?
Just soaking in a container of water would suffice however the water quickly becomes laden with fixer, so that´s a big no no unless you´re in the field, developing etc. away from home. Frequent changes of the water is mandatory, the best would be to wash in running water for 30+ minutes but that seems rather wasteful considering the scarce supply of fresh clean water in many parts of the world. Using distilled water promotes gelatin swelling and helps release the fixer quicker but swelled gelatin is soft, so scratching, specks and whatnot can occur. Hard water on the other hand reduces the emulsion swelling thus prolonging the wash time.

Hypo clearing agent aka HCA or the older variant Hypo Eliminator aka HE, is used by many to assure the best archival negative properties. HE is a dilute solution of hydrogen peroxide and ammonia., this solution destroys residual thiosulphate by oxidation into sulphate.. Sulfate is inert and will not attack the silver of the image. HCA is mainly sodium sulphite which accelerates the washing out of the residual fixer and saves water.

The Ilford washing method:
Clean the tank with the film under running water and
Fill tank with fresh water, turn 5 times
refresh water, turn 10 times
refresh water, turn 20 times
and the film is washed in archive quality.

My personal method:
My washing regime is essentially a bastardization of the above, 15-20 min. running water (thru a 10 µm filter) and a final rinse in distilled water with added wetting agent.

Fill the tank with fresh running water and dump, do this 12-15 times
Then leave it to wash in running water for 15-20 minutes
Final step is to fill the tank with distilled water, adding the wetting agent and letting the negatives soak for about 3 minutes.

Still somewhat wasteful from an environmental point of view, water is becoming a luxury.

Sibbarp, Sweden 2012

Printing

Making prints with Sumatranol 130

by John Nanian

I use Sumatranol 130, my film developer, to make photographic prints.

It works well with Fiber and RC Paper, projected or enlarged prints, contact prints, paper negatives, dry plates and hand coated emulsion too. There aren't many differences between standard print developers and using a coffee based developer, other than time spent in the developer, the tonal range of the developer and the staining effect of the developer. Straight Caffenol without Ansco 130 while it works, well with prints as it does with films, is not as active a developer, so I tend to use my home brewed Caffenol together with a little print developer.

I use a Caffenol C variant that make with whole bean Sumatra Robusta coffee and a small amount of Ansco 130 print developer. Ansco 130 is a universal developer made with glycin and a few other ingredients that give it a very long tonal scale and shelf life.

What do I do when I make prints using a coffee developer?

Well, it is pretty straightforward and easy. I expose my paper or glass plate, and let it soak in the developer. When the image appears, I double that time for my total development time, and I keep an eye on the print. Sometimes go between the developer and a water bath to slow down development. When it seems done, I remove it from the developer and fix and wash.

I have a second method as well. I use two baths of developer, instead of one. I mix Ansco 130 print developer 1:2 when I make prints. If you don't have Ansco 130, I am confident any print developer will work, it is just used to jump start the development process. When I get my developers and water bath prepared, I make my exposure and begin development in the "regular" print developer. As soon as an image begins to appear, I put it into the coffee developer. I finish the development in the coffee and like my other method, i use a water bath to slow down the development as needed. If the image is too flat, I go back into the "regular" developer to increase the contrast. This two bath method reduces the amount of time the print is in the coffee, which can sometimes take more than 5 minutes.

Using two baths instead of one allows the contrast to be managed in the standard developer (hard developer) and the mid tones and highlights to come out in the coffee (soft developer).

Tonality of the prints can vary, depending on papers used and time spent in the developer. RC papers do not absorb much of the coffee stain or brown tone while fiber papers tend to stain more of a brownish color. The tonal range and contrast of paper processed in Caffenol tends to be lower contrast, softer working developer than a "regular" developer. Other than these few things, coffee based print developer tends to work as well as any "regular" developer.

While the methods I have described in this chapter and others work for me, my water, coffee, additives, and working methods are not the same as anyone elses, and I suggest that my writings be looked at as "starting points" for whoever wants to try what I do.

Have fun !

Rhode Island, USA 2012

Scanning

Scanning Caffenol developed negatives?

by Eirik Russell Roberts

What do you want to attain when scanning a negative?
It is the most important question you need answering. In my case I scan with post processing in mind. In other words my main goal is to end up with a scan that contains all the information the scanner is able to extract from the negative. Making the image ready for print or presentation is reserved for other and better suited tools. The other approach would be to scan the negatives to be more or less ready for print, straight out of the scanner. My personal experience is that this tends to give poorer results, though admittedly the process may be more expedient and convenient.

Knowing your scanner
My scanner is the not so expensive, nor very competent EPSON V500 flatbed scanner. My reasoning is that for big prints I will use traditional enlarging or send out for professional scanning. For smaller prints and web use a reasonable scanner can very well be good enough, especially if you for the most part scan 120 roll film. If however you plan on scanning for big prints, a more competent scanner would be advisable. A flatbed scanner is not kown for holding film very flat, nor for their ability to transilluminate the darker areas of the negative. The former can be improved on by using better film holders, the latter may need taking into account when developing. Very dense negatives will pose a problem with most scanners, more on some than others. Some people may develop for the sole purpose of scanning. In which case thinner negatives is a good idea. Shortening your development times by 10% or so could yield positive results. Personally I develop normally, as I plan on printing the better negatives in the darkroom one day.

Scanning involves two major components. The scanner HW and the scanning SW. Most of the processing is done in SW. It can of course not add information to whatever the HW has not been able to extract from the negative, but different SW´s have been known to yield different results. I use the EPSON native SW. I´ve tried Vuescan, but saw little or no gain. Common to most scanner SW is that they do not have the minute control that even the simplest of image post processing tools have. This is why I tend to leave most of the image processing until after scanning.

My method
Do you need to apply a different approach to scanning Caffenol negatives? The short answer is no. It is like scanning any other B+W negative.

Load the negative into the approriate film holder, emulsion side down. I use non-lint gloves when handling the film, and non-abrasive lint-free Pec Pad wipes to wipe dust off the negatives, and the scanner glass bed and lid.

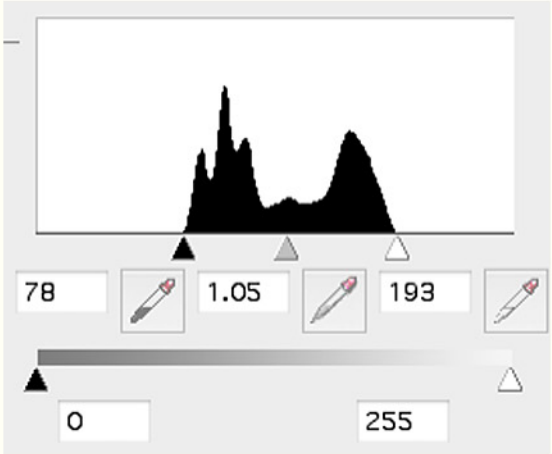
I set my SW to professional mode, as my intention is to take control over the most important settings myself. Remember my goal is to not gain a ready printable scan, but a scan that contains as much information as possible, leaving the finishing to an image post processing tool.

I set the Document type to Film and the Film type to Positive. Positive, you say? Yes, my experience is that scanning a negative as a negative, on my scanner at least, tends to enhance grain more than if I scan as a positive. Also, scanning as a positive seems to fool my scanner into flattening the contrast, improving the tonal gradation. This process entails inverting the scan afterwards, but since I´m already going to post process it, it´s not much of an issue.

I set the Image type to 16-bit greyscale and the resolution to between 1800 and 2400dpi (which is over the real resolving power of the scanner anyway).Then press Preview. The scanner now makes a preliminary scan of the whole scanning area. Draw up your frames for each of the negatives. For each I make sure the Unsharp mask, Grain reduction, Color restoration, Backlight correction, Dust removal and ICE dust removal settings are all turned off.

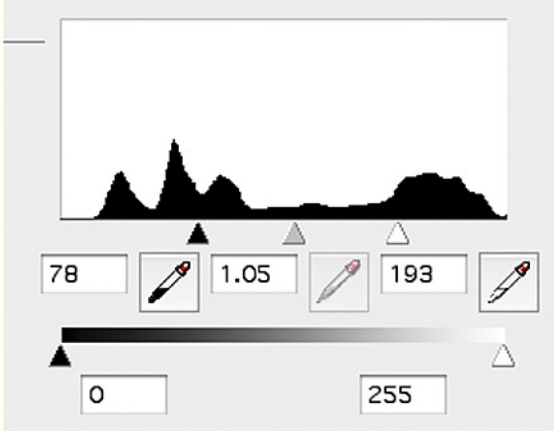
I then go into the Histogram adjustment window, second from left buttom under Adjustments. This is where you can either make or break a scan. Note that this is done for each and every frame you want to scan. At first make a note of there the information is located. If it is bunched up towards one edge, it would indicate your exposure (or development or both) is over or under. Most B+W films have a bit of latitude for error, and all may not be lost. Since I scan as a positive, information located to the left would indicate overexposure/development, and vice versa if the information for the most part is located to the right. It´s a good idea to make a note of this when assessing the scanned negative. Not all faults can be corrected. Figure 1 depicts a rather average negative, which seems to be exposed and developed just about right.

Figure1, input data histogram:



First make sure the channel selector is set to RGB, and not one of the channels only. Then set the Output values to 0 and 255 (not 18 and 246 or whatever the SW often proposes). Then set the White and Black points to the edge of the histogram left and right boundaries. The gamma setting is often set to a value larger than 1.00. This is because the SW is trying to give you what it thinks is optimum contrast straight away. I however tend to set it back to 1.00 or just over or under, which straightens the curve somewhat. (See figure 1 for an example of histogram settings for an average negative). The Tone Curve view should now give you a curve which goes from lower left to upper right in a more or less straight line, a small curve is fine. Press the Show Output button and the output histogram is presented instead of the input histogram. See figure 2. If all is well there should be a good spread of values from far left to far right, if not from edge to edge at least not far from it. Dips and bumps are fine, as long as there are no dips which go all the way to the bottom. This indicates that information for certain values are missing. This may result in banding (sharp transition between tones not normally neighbours) or blocking (areas of uniform tonality). Also make sure that the boundaries of the histogram do not go off the scale at either side, as you will be loosing shadow and/or highlight information if they do. In which case adjust the Black and White points to pull the edges of histrogram back in.

Figure 2, Output histogram preview:



You should now be ready to press Scan. Choose the location for your output file. I tend to name my files with film and developer type, and date. Make sure you scan to uncompressed TIFF. And you are off.

I´ll not go into post processing in depth here. But since I´ve mentioned it on many occassions I´ll give a few pointers. I first invert the image and then flip it left to right or top to bottom depending (the scan is mirrored). An older version of Photoshop Elements which is thrown in with the scanner can do this easily. I then import the image to Aperture, my tool of choice, but the principles are the same for any RAW file converter or editors such as Adobe RAW, Gimp, Lightroom or Photoshop CS. I first straighten and crop the image. Then do a bit of dust removal (retouch). I then adjust the Luminance levels to increase contrast. First by drawing black and white points towards the histogram edges, and then play around with the G (gamma) setting. And if need be the 1/4 and 3/4 levels too, to adjust contrast in the darker and lighter areas separately and more minutely. What you want to see is a histogram with values from far left to far right, this time all the way to the edges, and sometimes beyond. Sharpen to Intensity 0.75 and Radius 1.0. If I´m lucky that´s all that is needed. If not there are other adjustments...

Good luck.

Sande i Vestfold, Norway 2012

Afterword

by Gerald Figal

The very first roll of film that I ever processed—Fuji Neopan Acros 100—was with Caffenol. Why begin with Caffenol? Why not any number of other fine commercial developers? (Of course, this question comes after the question "why film?" but that's a topic for another book....). My personal answer at the time was threefold: 1) it's inexpensive; 2) its ingredients are readily available and not nearly as dangerous as other developers—ingesting coffee and vitamin C can actually make you feel good rather than kill you; and 3) the thought of developing film in coffee was just too cool not to do. I earned a certain amount of street creds when revealing to fellow fotogs that I used coffee to develop film.

Beyond these three reasons, I think the inspiring work of the practicing Caffenologists represented in this volume amply demonstrates the best reason of all: Caffenol produces beautiful images. And it works this magic with a smorgasbord of films, papers, subjects, and shooting conditions. From Efke 25 to Kodak Tri-X 400, from infrared film to photographic paper, from smoothed-skinned studio-lit portraits to textured sun-drenched landscapes and urban grit, Caffenol conquers all. Well, almost all—according to Reinhold's vast experimentation, Rollei Superpan 200 seems to be the only film so far that doesn't play nice with Caffenol. Maybe it's a tea drinker....

The versatility of Caffenol and the gamut of grays it liberates from (nearly) every emulsion could only have been discovered through the spirit of experimentation that this cookbook embodies. What you saw here in the images presented, the techniques detailed, and the recipes shared is the product of a kind of spontaneous open-sourcing of far-flung photographers who are willing to take the risks and to suffer the failures for the rewards that trial-and-error brings. The hard part's done; Caffenol has proven itself. It may not exactly be mainstream, but it certainly has lowered the previously raised eyebrows of the skeptics.

Whether you are a skeptic or convert, newbie film fotog or old-school vet, The Caffenol Cookbook is more than just a set of pretty pictures and helpful hints. It is ultimately, we hope, an invitation to join the party, to cook up a little Caffenol for your own future photographic adventures.

Nashville Tennessee, USA 2012

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The Caffenol Cookbook & Bible is an extensive collection of technical tips, developer recipes and beautiful photographs. This book will help the reader expand his or her knowledge of Caffenol and ability to successfully develop black and white film in coffee based developers.

" Congratulations on a wonderful document on the wonders of Caffenol in the darkroom. While I do not use Caffenol on my negatives, it has been my developer of choice for printing for several years now. "

" I really like caffenol and other home brewing experiments. Your cookbook is really fine and I would like to put it next to the 'Darkroom cookbook'. "

" This is really a public service! Thank you for sharing with us. Formidable! "

" Amazing stuff! Wonderful project to be part of... With the prices of chemicals around here this is going to be my err... coffee table book! I'm spreading the word "

" Nice work! I quickly buzzed through it and have it bookmarked. I'm a seat of the pants shooter and a very laid back developer so this is a great read. "

In The Caffenol Cookbook & Bible, you will learn:

The differences between the developer types
The proper ingredients and how to mix them
How to control the contrast with agitation
The importance of temperature, stopbath, fixing and wash
How to print using coffee developer
How to scan Caffenol developed negatives

Book level: Beginner/intermediate and advanced.

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