Modified Calotypes

My contributions:

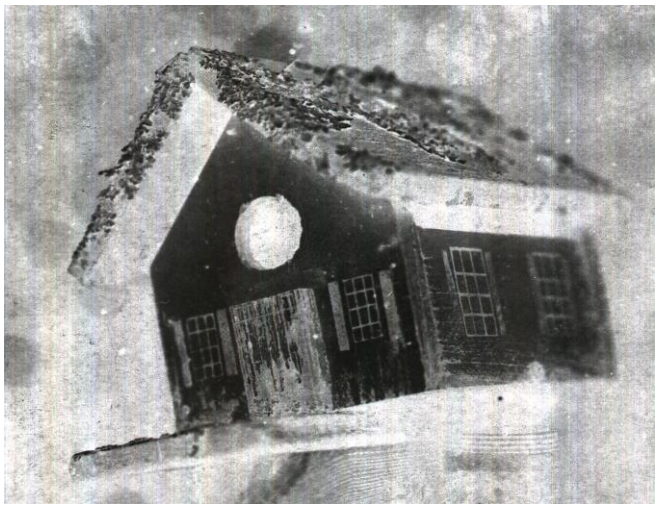
1)Using Mr. England's Honey/Tannin Process as a preservation bath for dry paper calotypes.[1]

2)Combining Mr. England's[2] presilving development bath with the use of modern film/paper developers to hasten develop to a matter of mintes.

3)The use of an acidified Metol developer for the development wet calotypes.

Acidic Metol Developer

1g Metol 5-50ml Vinegar (or 2-4g Citric Acid) as restrainer/antifogging agent to 200ml H20 *drops of Aceto-nitrate of silver can be added to boost development. This must be used with the dry calotype processes.



Wet Calotype (Transmissive Scan)
Acidic Metol Developer
EV 9 @100ASA 8 minutes, full aperture full plate camera
1g Metol, 175ml H20, 25ml Vinegar

For dry calotype processes, I favor Mr. England's pre-development silver bath. The developer is used only once while, the pre-silvering bath may be reused.

[1] The Silver Sunbeam. Pg 249.
[2] Ibid.

For the making aesthetically pleasing calotypes, for viewing reflectively, I prefer to use modern developers, such as Kodak D72, as development is quick, and exhibits pleasing tonal separations. However, with the dry calotype process, I have been unable to produce negatives with enough density for printing.

Film Positive scan of Honey/Tannin Dry Calotype
1 minute Pre-silver bath
Left: Acidic Metol Developer, 5 Minutes
Right: D23 Developer, 4 Minutes
The unexposed areas remained paper white. Calotype was over exposed. The left side has a strong yellow brown cast, showing underdevelopment.
(EV 9.25 @ASA 100, 12 minutes, Full aperture on #2 Kodak Brownie)

Formulas

Wet Calotypes

Iodizer

15g Gelatin
15g Potassium Iodide
3g Potassium Bromide
500ml Distilled H20

Bloom Gelatin in 400ml h20, melt in microwave in 20-second increments until hot (~120 degrees F), stirring every nuking. Dissolve Iodide and Bromide in small amount of water, and stir into hot gelatin. Add remaining water. Filter before every use.

Submerge Papers into Iodizer until limp, (~2-3 minutes). Hang to Dry.

Iodizer may be frozen and reheated for reuse.
Sensitizer:

400ml H20
40g Silver Nitrate
25ml Glacial Acetic Acid
to 500ml H20

(or 40g Silver Nitrate in 500ml Vinegar)

Submerge for 3 minutes, blot dry with paper towels, front and back. Silver bath can be used dirty/dark without ill effect. Filter before each session. The sensitizer needs to be seasoned before its first use (by adding drops of iodide.)

Exposure
Load calotype in between two sheets of glass to prevents ripples in the calotype, and an uneven exposure, as sensitive is lost during drying.

Ev14 @ 100 ASA – ~40 Seconds @ f/~4 (full aperture)
EV10 @100 ASA - ~8-10 Minutes Full aperture

Developer

1g Metol
150ml H20
50ml Vinegar

Develop for 3-4 Minutes. Small amounts of Aceto-nitrate of Silver (see Thomas Sutton section) can be added to remedy underexposure. Wash with tap water before fixing in 20% Sodium Thiosulfate, until the yellow cast of Silver Iodide disappears. A ph+ additive can be added for faster fixing. Basic thiosulfate releases Sulphur dioxide gas and thus should be used under proper ventilation.

Honey/Tannin Dry Calotype

Same Iodizer and Sensitizer as Wet Calotypes, but with a wash and preservation before the exposure, and a pre-silvering step before development.

*IF calotypes are for presention- D72 works great.
If calotypes are for printing- a silvering bath must be used prior to development

Preservation:
Wash in tap water[3] until milk white silver clears from tray (3-5 minutes). Submerge in Honey/Tannin Preservative for 1-2 minutes. Hang to dry. The negatives are then pressed inside a contact frame, with interleaving sheets separation wrapped in a black bag.

Honey/Tannin Preservation

12g Tannin 12g Honey 355ml H20

Development
If traditional developers are used, the calotypes should be submerged in a 1-minute pre-silvering bath before development, as the excess silver is washed away during the preservation process.

Pre-silver Bath

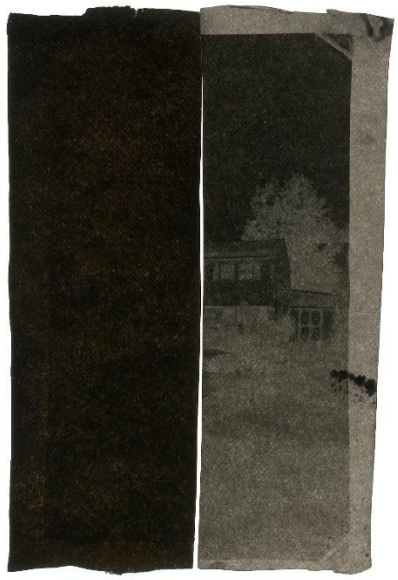
2g Silver Nitrate 1ml Acetic Acid To 100ml H20

Working Developers

D23: 7.5g Metol 100g Sodium Sulfite 1L H20	D72: 3g Metol 45g Sodium Sulfite 12g Hydroquinone 80g Sodium Carbonate 2g Potassium Bromide 1L H20	D25: 7.5g Metol 100g Sodium Sulfite 15g Sodium bisulphite

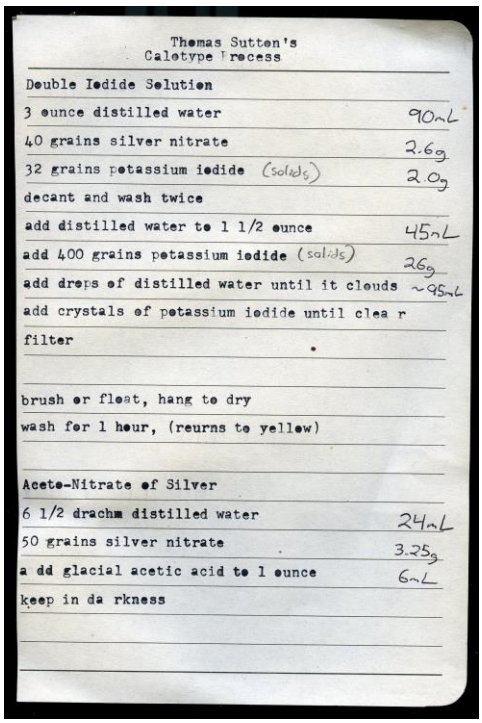
[3] The water quality at Renaissance Press was sufficient to preserve calotypes for days with washing under the tap. If this is not the case, shuffling negatives under distilled water is necessary.

Transmission and Reflective Scan from Honey/Tannin Dry Calotype (unwaxed)
Left 1-minute pre-silver bath, 5 minutes D23 development
Right 1:9 D72 9-minute development (no-pre-silver bath)
(The scan exaggerated the density of the unexposed areas on the transmission scan.)



Left: Pre-silver bath 1-minute, then 1:4 D72 30 seconds
Right: 1-minute pre-silver bath, then 5 min D23
The D23 development is the closest printable dry calotype with this method.

Thomas Sutton's Wet Calotype



Thomas Sutten's
Calotype Process

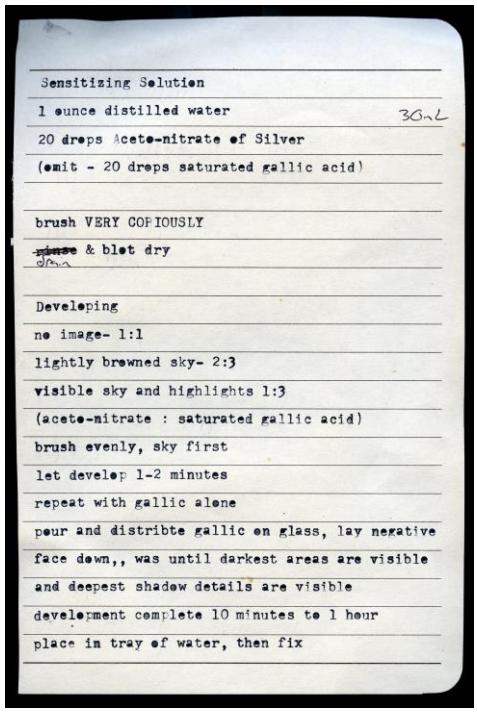
Deuble Iedide Selutien

3 eunce distilled water — 90mL
40 grains silver nitrate — 2.6g
32 grains petassium iedide (solids) — 2.0g
decant and wash twice
add distilled water te 1 1/2 eunce — 45mL
add 400 grains petassium iedide (solids) — 26g
add dreps ef distilled water until it clouds — ~95mL
add crystals ef petassium iedide until clea r
filter

brush er float, hang te dry
wash fer 1 heur, (reurns te yellew)

Acete-Nitrate ef Silver

6 1/2 drachm distilled water — 24mL
50 grains silver nitrate — 3.25g
a dd glacial acetic acid te 1 eunce — 6mL
keep in da rkness



Sensitizing Selutien

1 eunce distilled water — 30mL
20 dreps Acete-nitrate ef Silver
(emit - 20 dreps saturated gallic acid)

brush VERY COPIOUSLY
~~rinse~~ & blet dry
dram

Developing

ne image- 1:1
lightly brewned sky- 2:3
visible sky and highlights 1:3
(acete-nitrate : saturated gallic acid)
brush evenly, sky first
let develep 1-2 minutes
repeat with gallic alene
pour and distribte gallic en glass, lay negative
face dewn,, was until darkest areas are visible
and deepest shadew details are visible
development complete 10 minutes te 1 heur
place in tray ef water, then fix

*The Acidic Metol developer does not bring up the image as quickly, nor as dense as the Aceto-nitrate/gallic acid developer, as the developer contains a larger amount of silver.

Pelgery Calotype

Making Whey, warm milk and add 2 capfuls of vinegar, decant/filter the liquid.

Iodizer
500ml Whey
7.5g Potassium Iodide
1g Potassium Bromide
10g Lactose

Dissolve powders in 100ml of water, add to the whey and filter. Submerge paper until limp (2-4 minutes). Hang to dry.

Sensitizer
50g Silver Nitrate
15g Citric Acid
500ml H20

Shuffle paper in Sensitizer until limp (2-4 minutes). To preserve for dry process, shuffle in distilled a water bath, then a 0.75% sodium chloride bath, then 2 distilled water baths (5 minutes each). Calotypes are then placed in a Preservation bath for 2 minutes, one at a time, and hung to dry. When dry, the are pressed in a contact frame with interleaving tissue and sealed in a light tight bag.

Preservation bath

15g Tannin
15g Dextrin
600ml H20

Exposure:

Development, 4-7 Minutes in

1g Metol
150ml H20
25ml Vinegar
2mls Aceto-Nitrate of Silver

(D72 development cannot be used.)

Wash with tap water before fixing in 15% Sodium Thiosulfate, until yellow Silver Iodide is removed. A ph+ additive can be added for faster fixing.