

Sieving Wax with Oil

By Graydon Wetzler

The text below is an excerpt from a larger creative research experiment that brings together sets of normally reclusive discourses to render a speculative constellation generated by defining the gifted biologist Hilde Proescholdt (1898-1924, later known under her married name Mangold) and Abraham Gesner (1797-1864)—a Nova Scotia-born physician, geologist, inventor, and an obscure father of the petroleum industry—as a disinclinating locus. The encompassing research project within which the current text is situated first germinated a decade ago in a required PhD course, ‘Performance Studies Methods’, which I took at New York University. I endeavored to contribute to developing ecology-oriented exchanges across artistic research, performance studies, object-oriented ontology, new materialism, and science and technology studies. If I am offering a new vision for performance studies methodologies in these exchanges today, it is to speculate plausible chimeras by collecting and distinguishing between—or ‘sieving’—extant historicities. Put differently, I aim to adapt Pinar Yoldas’s (Visual Arts Professor, UC San Diego) impetus for speculative biology as a ‘Fabula Rasa’ that is in the service not of ‘flights of fancy, but alternate realities with disruptive power’ and to induce a kind of a/biotic magic, ‘where the sky is the color of a television turned to a dead channel’ (35-36).

Hilde Proescholdt’s 1921 laboratory studies on newt embryos were foundational in that they originated the current view of embryonic development as chemically induced cell-cell communication that occurs within morphogenetic fields over long distances and self-regulates in response to experimental perturbations. Recognition would elide Proescholdt, however, as she tragically died in 1924 from burns suffered after a kerosene stove exploded while she was heating up milk for her newborn baby. In 1846, Abraham Gesner was the first to distill

liquid fuel from coal, bitumen, and oil shale, which he named kerosene. Gesner's technical innovations spurred the petroleum industry, but he also never received wide-scale recognition, as the development of large-scale commercial petroleum mining in the 1850s and '60s caused the value of illuminating oil to plummet.

A complex historical and semantic field emerges when Proescholdt and Gesner are placed along a speculative continuum. Rather than kerosene itself, attention should be devoted to the word's Greek conjoint *keroselaion*, meaning 'wax-oil'. Setting loose this complex sum revealed a constellation of historical tableaux, materialities, and marginalia that spans the South East/North East Canadian/U.S. border(s) and Atlantic/New England triangular trade dissonance. To give form to this research, I look to Wyatt MacGaffey's extensive anthropological and sociological studies of *minkisi* (*minkisi* is the plural form of *nkisi*)—West African containers comprised of animal, vegetable, and mineral materials that the Belgian filmmaker and anthropologist Luc De Heusch famously called vessels for the 'spirits of the dead metonymically caught in a metaphorical trap' (qtd. in MacGaffey, 'Complexity' 190). MacGaffey characterised *minkisi* as irreducible complexes of material, medicinal, and performative dimensions whose principal structure is that of a multitudinous rebus operating through combinations of displacements initiated through homology, pun, metonymy, and other associative devices ('African Objects'). Concurrent to much of MacGaffey's work on the *minkisi*, William Pietz published a series of extensive genealogies of how the idea of *fetish* came to modulate and install a key semantic field that enabled the West to self-identify with a rationalized colonialism that stood in contrast to the irrational attribution of causal relations to random associations through efficacious magic. *Minkisi* lie at the heart of Pietz's negative dialectics of the fetish, because, for Pietz, the fetish 'as an idea and a problem, and as a novel object not proper to any prior discrete society, originated in the cross-cultural spaces of the coast of

West Africa during the sixteenth and seventeenth centuries' (5). Pietz observes that the scholarship of the fetish in the eighteenth century provided 'the image and conception of fetishes on which Enlightenment intellectuals based their elaboration of the notion into a general theory of primitive religion' against a false attribution of value based on the 'historicization, territorialization, reification, and personalisation' of matter (5, 12).

Elsewhere (Wetzler 2019), I emphasize the chemical links of the above conjuncture. As a contribution to Platform's issue 'On Magic', the excerpt below follows some of this research's magical threads through techniques spanning experimental biology, colloidal suspension, industrial synthetics, and anthropology. My hope is to give form to this speculative non-fiction, of science and of fire, in the spirit of Pietz's negative field of the fetish, MacGaffey's explication of *minkisi* as complex performative assemblages ('African Objects'), and the *minkisi*'s efficacious conceptual trouble-making for Western perspectives of social relations, material value, and non-human agency. The question then is whether, here, history is a magician, or whether history is a magical material?

Coup en Bias

1892. The Sootless Kerosene Stove is patented to a Swede. With coveted burner design, the stove takes doubles worldwide: in the U.S. as the 'Coleman', the 'Metace' in Australia, 'Hipolito' in Portugal, the Czechoslovakian 'Meva', and the German 'Petromax'. Shortly after Proescholdt transplanted living substance, a French designer, Madeleine Vionnett, introduced her 'coup en bias' in 1924, traversing warp and weft, cutting along 'bias grain' giving fluidity (to fabric) through distaste (for corsets). Vionnett's *cuts* challenged conventions of corsets and stays—dresses notoriously difficult to remove quickly (such as in the case of catching fire) (see Mahe).

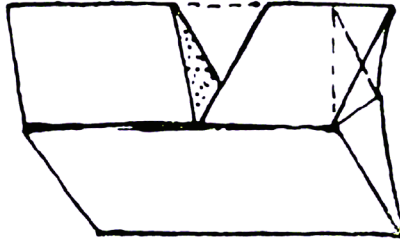


Fig. 1: Calcite twinning generated by a re-entrant angle caused through reversal of portion. Adapted by the author from Przibram.

In protostome, blastopore becomes mouth. In deuterostome, blastopore becomes anus.

A Lock of Natural Fibre

A consummate *bricoleur* fastens a lasso from a tress of his offspring's hair, binding noose on jelly around a specimen's first fold, tightening until a distinction is manifest, and obtains two complete embryos. Under more attenuated constrictions, fused embryos emerge. Dorsal planar manipulations terminate in a piece of belly, while ventral repertoires yield skin, undifferentiated mesenchyme, kidney tubules; but none participate in corporeal axis.

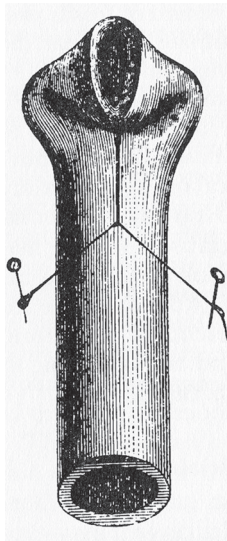


Fig. 2: Wilhelm His, Sr., 'Chick Brain Compared to Folded Rubber Tube' (in Gould). Public domain, modified by the author.

Locks of Synthetic Fibre

1912. Vinyl chloride (VCM) is a chemical intermediate: a colorless gas in liquid form susceptible to flash evaporation and a carcinogenic with mildly sweet odor. Polymerized VCM yields polyvinyl chloride fibers (PVC)—a composite storing negative electricity when rubbed

and enabling undergarments said to relieve rheumatism. PVC resists chemical residue and water absorption, providing both thermal and electrical insulation.

1935. Nylon is a thermoplastic with compact modularity robust to melting. Synthesized with petrochemicals, nylon became the preferable base for women's stockings and during WWII replaced Japanese silk in manufacturing parachutes. It is considered ideal as substrate for printing U.S. currency.

1953. DuPont Corp's Textile Engineering Lab uses condensation polymerization to spin a burn resistant synthetic with aromatic base structure, annealed to bond a crystalline, 'honeycomb' skein, and commercialized through amide solvents.

Convolve/Divine

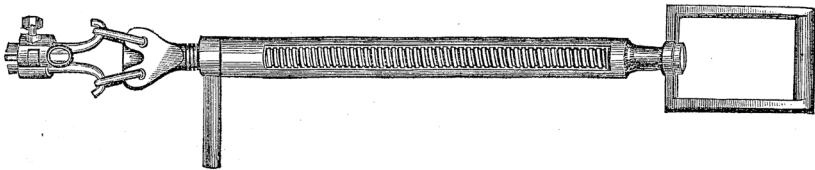


Fig. 3: 'Temper Screw', adapted by author from Gesner (*A Treatise*, 30).

1921, University of Freiburg. Hilde Proescholdt is unable to repeat Tremley's inside-out Hydra. Proescholdt's advisor, and eminent experimental biologist, Hans Spemann challenges her to reveal the handedness of an 'organizing centre' via heteroplastic manipulation. Proescholdt concatenated five acts to carry the matter in. Her induced morphologies and exquisite hand drawn histological sections would tunnel into the postscript of her advisor's Nobel-earning 1921 paper demonstrating the inductive power of an organizing center.

Mineral Manipulation

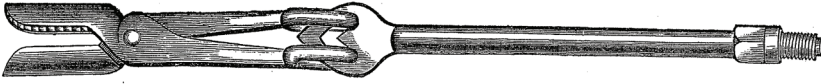


Fig. 4: 'Lazy Tongs', adapted by author from Gesner (*A Treatise*, 30).

1824, Nova Scotia. After two shipwrecks between his birthplace and the West Indies and in debt from a failed horse-trading venture, Abraham Gesner concedes to his father-in-law's directive to become a surgeon. Returning home as country doctor, Gesner feeds a habit with saddlebags full of crystallised rock, publishing a first monograph, *Remarks on the Geology and Mineralogy of Nova Scotia*, and is named Provincial Geologist of New Brunswick with funds flowing from a burgeoning extraction industry. 1843 marks Abraham's return to Nova Scotia where he sets to work on the manufacture of an artificial lamp oil.

Matter Out of Place

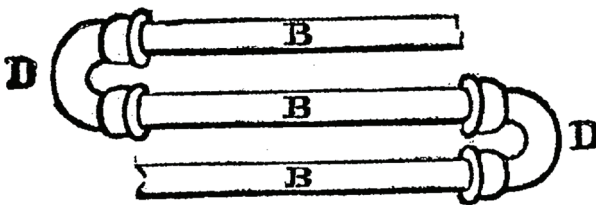


Fig. 5: 'Superheated Steam Apparatus', adapted from Gesner (*A Treatise*, 86).

Sir Frazer makes the following remarks concerning Contagious Magic: 'is a material medium of some sort which, like the ether of modern physics, is assumed to unite distant objects and to convey impressions from one to the other' (43). The spell of contagion assumes doublings of person and severed limb, as well as twinning of newborn with navel-string and placenta, the two continuing to influence the one as a distant unity. Frazer is unequivocal: 'magic is a spurious system of natural law, as well as a fallacious guide of contact' (13), presupposing material affect 'through a space which appears to be empty' (14).

The migrating tissue seduces the passive, indifferent materiality of a host to become fate, an affective double to its potential effect, to yield worked matter. Spemann conjectures his student to have revealed one of multiple centers—each signaling an interstitial fate through catalyzing centers and diffusing margins, like witchery, operating rules of contagion and antithetical action at a distance.

Extract, Crack, Sieve

1818, West Indies. Gesner collects a sample of bitumen from Trinidad's 'Pitch Lake', and cooks the first batch of a novel illuminating oil. It is impractical to come by, and emits an offensive odor when burned.

1852, Albert County, New Brunswick. Gesner visits a vertically injected vein along the Petitcodiac drawing an unidentified bituminous mineral environed by 'rock neither roof, floor, under clay, nor stratum of *stigmata*' distinguishing coal. Dubbed 'Albert coal', this vein of asphaltum would elude Abraham as the sole provenance of the Crown.

1854, New York, NY. Eagle Hazard, a shipping corporation established by operating a line for cotton trade between New York and Mobile, Alabama, issues a circular announcing a patent for a new material dubbed 'Asphalte Rock', an 'entirely new article of commerce ... found in Inexhaustible quantities in the Province of New Brunswick', having conchoidal fracture, leaving fingers unsoiled and void those properties known to constitute coal. The document alludes to

a 'peculiar' method for extracting fluids from a 'full and constant supply of the Rock', and 'requiring few hands and no complex machinery'. The patent's balance was given to careful description of a distilling and treating processes. The fluid is first induced through dry distillation, and always in a closed retort. It is then further cut with sulfuric acid to sieve undesirable content, and again purified now with freshly calcified lime for absorbing residual water and neutralizing its acid. Depending on method of distillation, Abraham's rock will educe a solvent for India rubber, petroleum substrate for transportation, engine grease, and above all, an illuminating oil that is both smokeless and odorless and enables an incandescence of unmatched hue.

1857, Trinidad. The Earl of Dundonald secures rights for Pitch Lake's entire surround and draws a line in 'Trinidad Oil' linking Nova Scotia to Boston, with a distillate known as kerosene and extending that line to England.

Copy/Substance/Contagion

'I, Abraham Gesner [...] have invented and discovered a new and useful manufacture of composition of matter, being a new liquid hydrocarbon, which I denominate Kerosene.' ('Improvements in Kerosene Burning Fluids')

'I transplanted a young optic vesicle beneath some belly ectoderm.' (Richard M. Eakin performing Hans Spemann in *Great Scientists Speak Again*, 1975)

'It is not the wax that I am scorching [but] the liver, heart, and spleen of So-and-so that I scorch.' (Taussig 253).

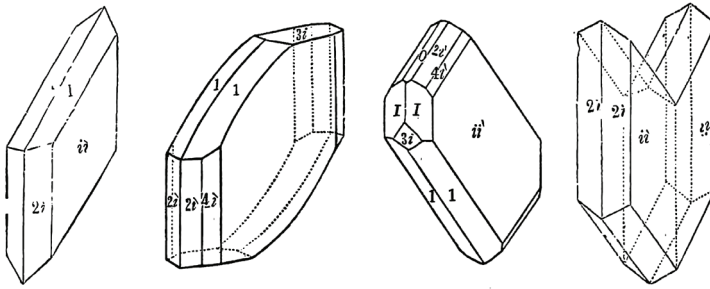


Fig. 6: Cleavage and twinning in common gypsum. Adapted by author from Dana (370).

In magical *res*, an act in absence, sympathetic to historicity, as well as, to hysteresis—an intermediate between affective and causal law. Little is known about Proescholdt’s life outside the laboratory. She married the most senior student in Spemann’s lab, a suspected Nazi and only recognized co-author on Spemann’s published 1921 study. Proescholdt, now Mangold, bore a child with the former. She read Rilke, attended Husserl’s lectures, and decorated her flat with Expressionist prints.

Marcel Mauss and Henri Hubert tell us that ‘[i]t is the image of the thing to be displaced that runs along the sympathetic chain’. Hilde ignites a chain of synthetic history and natural magic by displacing matter betwixt unformed newts. The *now* migrated organizer enacts the host as substance and yield a double void/mass. Spemann the *bricoleur* conduces theoretical induction to matter, and is awarded the Nobel Prize in 1934. Gesner the *alchemist* urges matter and reads flame, cooking substance *anew*, yielding a novel *naphtha* that migrates into the ‘Petromax’.

Frazer summoned Hegel to unravel ‘tangled skein’ of thing and idea. The philosopher’s task is to dispel theoretical magic as spurious

science and ‘bastard art’, and become mind reader, thereon upon resistant things, even if from a distance of *theory as ether*. False magic doesn’t necessarily make for bad theory: diffusing abstract principle in worked matter sometimes yields *theory magic*.

Sartre exposes as much in a-certain kind of *Existential Magic* where the to and fro of raw matter and worked matter transplants interiority into exteriority. Materiality ‘is indissolubly linked to the meanings engraved in it by praxis’ (180). Matter is, therefore, always *synthetic*. But we need neutralize Sartre’s words elsewhere in a retort when after drawing a negative horizon, ‘If he (man) could encounter pure matter in experience, he would have to be either a god or a stone’, he detracts a sentence earlier, ‘Man lives in a universe where the future is a thing, where the idea is an object and where the violence of matter is the midwife of History’ (181–182). For the incantation to ‘produce the effect’ (*theory magic*), one need only cut Sartre (one meter) short, cutting the matter down. One need not be a stone to experience twice-worked matter as pure matter. Our encounter with Hilde *illates* this. Lest we forget the cut we began, besides the natural doubling of first and second mouths (with Deuteronomy the fifth mouth of the Law) is the portmanteau, *a mouth for eating and speaking*—an ingress inducing a closed circle into an open torus.

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