The love of stone is often unrequited.

An intimacy of long unfolding fails to be apprehended, and the story concludes in familiar solitudes, human exceptionalism and lithic indifference. Withdrawal and remoteness are inevitable themes within any romance of stone, since rock outlasts that which it draws close, that which draws it close, that to which it is strangely bound. Humans respire, reproduce, invent, desire and dream. The lithic inhabits the secret interiors of the earth. What could be more cloistered? Inorganic, nothing like the familiar animals we conditionally welcome into community, an everyday material that surfaces blunt rebuke to assimilation, stone remains aloof. Yet a mutuality is always possible, some narrative of companionship and concurrency. This essay maps geophilia, a pull, a movement, and a conjoint creativity that breaches ontological distance. Even if born of a general principle of matter, geophilia’s mobility and clasp possess their own rocky effects, in the quadruple sense “effects” carries of aftermath, agency, production, and belongings. An elemental geophilia surely exists outside human experience. Yet to us nonlithics, its force will be most evident in the relations that enmesh us over long scales of time and in the “storied matter” these confederations of the human and inhuman divulge.[1]

Monstrous child of the meeting of incompatible scales, queer progeny of impossible taxonomic breach, geophilia is the lithic in the creaturely and the lively in the stone. Humans walk upright over earth because the mineral long ago infiltrated animal life to become a partner in mobility. Vertebral bone is the architect of motion, the stone around which the flesh arranges itself to slither, run, swim and fly. Had the organic not craved durable calcium as shield and conveyor, numerous types of sedimentary rock would never have arrived. A common mode of petrogenesis (creation of stone) unfolds when tiny ocean dwellers settle in their mortuary billions to the subsea muck. Limestone is a thick cemetery of mineral that had become animal now become rock again. Propelled by slow tectonic force upward into cliff and
mountainside, limestone might be quarried to build a radiant carapace under which humans pray, govern and make purchases. The whorls and coils of unfamiliar sea life such stone divulges have fascinated humans since at least Neolithic times. We create art with stone because we recognize the art that stone discloses: fossils, a museum of strata, lustrous veins and faceted radiance. We think and reckon with stone, primordial invitation to extended cognition (calculus is the Latin word for small stone, an essential component of an abacus). With its keen heft we compose and kill. From rock we construct graves, memorials, and dwelling places to endure long after we become earth again. In its aeonic endurance we discern something ardently desired, something ours only through alliance. Stone is devoid of neither life nor love, even if it questions what we mean when we use those terms to enclose a small world.

Expansive, dilatory, recursive, semicyclical from a long perspective, full of residuum, temporal intimacies, intermixed strata, geophilia entwines the modern and the ancient, the contemporary and the medieval, the primordial with expansive futurity. Its pull and grip can render Noah’s Flood difficult to tell from the Permian Extinction. Even if one event is apportioned from eternity and the other from infinity, one from theology and biblical narrative, the other from geology and astrophysics, both are modes of conceptualizing deep time that stress the demarcative power of catastrophe, lithic impress, a fossil record of monstrousness, the thriving of life in cataclysm’s wake, the burgeoning of story, a dense and propulsive archive. Classical and medieval writers might not have conceptualized the formation of stone in our geophysical terms, but their ecomaterial envisioning’s proceeded in modes just as vivid and capacious, through narratives stressing ecological entanglement as well as powerful solitudes. Premodern lapidary science hypothesized that every stone combines in variable proportions two restless elements, earth and water. Some rocks might contain ethereal emanations (vapors, lightning bolts). Others, like the red gem known as carbuncle, hold fire. Many originate in the bodies of animals, productions that conjoin the petric and carnal. Although rock might arise from seeming stasis, as in the Roman naturalist Pliny’s description of crystal petrifying over long years from mountain ice, a stone always conveys the astral, material, and ecological influences particular to its point of origin, an inbuilt vibrancy and enduring environmental imprint. The smallest pebble is upon deeper contemplation a durable link to a dynamic cosmos. Active matter, stone contains energy and radiates agency. Although sometimes withdrawn from the world’s lively spaces, the lithic is most often glimpsed in boisterous landscapes. Full of relation, teeming with narrative, stone is seldom inert.

That which is set in stone does not necessarily sit still. The lithic is likely to rebuke the arrogance of expecting the nonhuman to be like us and for us, but imagining the world to be as cold as stone, to be wholly detached from human life, can also accomplish important cultural work, urging a turn to God and the afterlife, or buttressing the anxious autonomy so essential to consumerist capitalism. The indifference of the earth to its dwellers paradoxically reinforces human exceptionalism, so that the material world comes to exist for our instruction and use. Yet stone refuses to remain fully set apart, to respect taxonomic distinctiveness. Because of its habit of undermining human singularity, of revealing common materiality as well as recurring affinity, to convey within its materiality the thickness of time, stone triggers the vertigo of inhuman scale, the discomfort of unfamiliar intimacy, and the unnatural desires that keep intermixing the discrete. Queerly productive, rock does not offer the easy fecundity of soil, Gaia as mother. Projectile and stumbling block, stone challenges as much as fosters. Life in the lithosphere is complicated, so that minerals flourish in ways that seem creaturely and the environment is prolific in more than biota.

A deep past intimate to thinking the future’s advent, a perspectivism that at once speeds and slows time, geophilia names a reciprocal and intimate bond, signaling attractions, affiliations, and movements toward connection often recognized retroactively, a proliferation of relation most evident over long distance. Lithic intimacy runs slow and deep. Classical and medieval poets discerned in the transition to agricultural modes of civilization and the transformation of gems and metals into coin and marketable goods the advent of modernity. They were just as ambivalent about this transition to commodity capitalism as recent economic materialists have been, and likewise believed that an embrace of wealth and the transformation of materials into a flow of goods alienated humans from nature. Geoffrey Chaucer
imagines in his poem “The Former Age” that the first humans lived on berries and nuts. In this
legend of the Golden Age they dwell happily in
caves, their closeness to the earth emphasizing
environmental harmony. They wound the earth
through plowing, however, and engender war
through mining. Having initiated mercantilism
through the exchange power of coins and jewels,
stone becomes a resource. Seeking gems in rivers
activates “coveytyse” (greed) and brings the first
“sorwe” (sorrow).[2] The naturalist Pliny provides a
Roman version, describing how crystal forms when
snow compacts in Alpine crevices. Miners
suspended on precarious ropes gather these
stones from their lonesome homes, and Romans
expend fortunes to attain them. This “crazy
addiction” to crystal’s radiant sheen spurs the
gem’s transformation into objects like goblets and
display, unworked, as a coveted form of natural
art.[3] Crystal, Pliny implies, is best left to its
mountain solitude rather than allowed to activate
human desires so intensely that the wealthy
bankrupt themselves in its pursuit.

Contemporary anthropologists describe the various
segments of the Stone Age (from Paleolithic to
Neolithic) as a time of special intimacy to that
matter. Attentive readers of Genesis, medieval
writers believed the first stone architectures were
biblical cities like Enoch, founded by exiled Cain
and named for his son. Such primordial habitations
were visible as ruins during pilgrimage to the Holy
Land. Modern science extends our stony fellowship
back farther in time, to hominids constructing from
gathered stones windbreaks for fire, domesticating
both the element and themselves in stone’s good
company. These collections of sheltering matter
eventually become the hearth, the center of human
dwelling. Cresting a ridge and coming upon a
rectangle of stone where a medieval home once
stood, I learned while hiking in Iceland how
forcefully the hearth endures.[4] Long after a house
has vanished its form remains, lasting archeological
signal of the refuge found there, lingering
declaration of community as a space that coalesces
around warmth, shared story, and sheltering stone.
The fourteenth-century travel narrative published
under the name of John Mandeville invokes this
geoophilia of origins and primal dwelling in an
account of a cave not far from Hebron. Here we are
told that just after their banishment from Eden,
Adam and Eve “dwellid in a rooch” (lived within a
rock).[5] In this cavern, likely from its very substance,
God formed Adam before being “translated” to
Eden. Exiled quickly from paradise, Adam and Eve
begot their children in this home of living rock, so
that the lithic becomes the space for the first
human acts of procreation. A garden lost before
nightfall, Eden is a brief stop in a human life
fashioned from and spent within stone’s embrace.

The Greek philosopher Empedocles articulated an
enduringly influential theory of the elements in
which earth, air, fire, and water are drawn and held
byphilia (love) but cajoled into perpetual
movement by a companion force
ofneikos (strife).[6] Elemental philia is material
magnetism and cosmic glue. Not an allegory for
human feeling (though human affect may manifest
this environmental energy), love pulls, gathers, and
bonds, working constantly against strife’s entropy.
Material existence is an act of perpetual assertion,
generative (new relations are always coming into
being) and generous (these relations cross
categories and intermix the disjunct). Attachment
and attraction inhabit all things as the principle of
their formation, as that which enables endurance,
inclining matter toward expansive connection.
Sometimes these relations enable new flourishings.
Sometimes they are perilous. Empedocles ended
his life by leaping into the molten rock of Etna, an
embrace of stone that incinerated him. To take his
theory of elemental restlessness seriously is to
apprehend that the world is not centered on the
human—not indifferent, not misanthropic, but
disanthropocentric, making stories centered upon
the human wobble, their trajectories veer.

Geophilia is an ecological allure in the sense
developed by Empedocles two and a half millennia
ago, a propulsive and conjoining force that draws
earth and water into a union generative of stone,
which draws stone and other worldly things
together to create, compose, produce. Those three
verbs are to be understood intransitively,
proceeding without necessary object.[7] Some
common things generated through human-lithic
emmeshment are text, science, place, art, matter,
collectivity, architecture and inhabitance. Writing in
the early sixth century, the Roman philosopher
Boethius framed Empedoclean love as a universal
principle of boundary and containment. Attempting
to express classical elemental theory within a frame
supportive of Christian doctrine, he envisioned a
cosmic chain of amor with origin in the eternal.
Even when love’s bonds dissolve, the war-like
disharmony that results makes sense within a larger pattern of divinely ordered change. As a famous medieval translator of Boethius knew well, such bonds are seldom secure, their failings profoundly troubling. Geoffrey Chaucer rendered Boethius’s Consolation of Philosophy into Middle English, the Boece. The influence this translation project exerted upon his future work is extensive. In The Knight’s Tale Chaucer places a Boethian meditation on the cosmic order maintained by love into the mouth of Theseus, the imperious ruler of Athens. The narrative world of The Knight’s Tale is limned by catastrophes: gods whose petty squabbles stir earthly tumult; cities smashed to the ground and battles that leave piles of corpses; astral forces that trigger floods, bloodshed, devastating loss. Assuaging the grief of his subjects at the sudden death of a friend, Theseus speaks of the “faire cheyne of love” (“fair chain of love”) that binds “the fyr, the eyr, the water, and the lond” (“the fire, the air, the water and the earth”) so that they do not escape “certeyn boundes” (1.2991–93). When the links joining the elements break, as in time they must, the divine “ordinaunce” (1.3012) that alloteth certain duration to all things is revealed, universal order behind seeming disarray. The ephemerality of the physical, Theseus insists, must turn our thoughts to celestial stabilities. Everything comes to its appointed terminus. Within its own duration, even hard stone is worn to dust by the tread of feet. Theseus’s recounting of a majestic cosmic harmony, as evident in the flourishing of an oak as in the glimpse he offers of erosion, reassures that the world is a closed system. A First Mover resides at its timeless exterior as guarantor of meaning. Yet the heartening moral of Theseus’s speech is undermined by the jarring emplacement of Boethius’s philosophy within a narrative fractured by mixed tone and a discomforting perspectivism, within a story that spectacularly fails to reassure that a meticulously hierarchical cosmos brings consolation, a tale obsessed with disaster’s lethal irruption. Boethian certainty in an underlying orderliness is challenged by “cruel goddes” who in the form of astrological influences preside over a world where the cries of women in childbirth are unanswered (1.2085), the goddess of Love becomes cruel and whimsical Fortuna (1.1950), babies are devoured in their cradles by wandering pigs (1.2019), the sea drowns the innocent (1.2456), and stone cities are reduced to rubble. Strife: all things break apart and move. The devastations of the Permian yield to the explosions of the Cambrian, the scouring of the Flood to the proliferations of the cleansed world, catastrophe to fertile wake. The elemental work of love begins again. And again.

The biologist E. O. Wilson posits an inherent bond among creatures, an “urge to affiliate with other forms of life [that] is to some degree innate, hence deserves to be called biophilia.” The term etymologically denotes the natural love of life for life. Geophilia goes farther and recognizes matter’s promiscuous desire to affiliate with other forms of matter, regardless of organic composition or resemblance to human vitality. Geo derives from the Greek word for earth but is here employed as in geology, a science of vast durations, slow movement, and inhuman scale. Through its confounding admixture of rapport, shared story, rebuffing density, and alien scale, stone offers a perpetual invitation to think time and agency outside small category, to cease to force the world into diminished frames. Within an amulet, medicinal draught, or vitamin stone radiates curative powers into bodies; as a petrification of astral force it may when carried in a pocket settle a roiled landscape or reveal in a laboratory the shifting of the earth’s magnetic poles; as a surface on which to inscribe sigils or phrases, it offers an invitation to a geographesis in which human hand and lithic potency compose a petric duet. In the Middle Ages, a frequent form of such collaboration produced inscribed jewels. Into stones and their settings were incised names, words of power, or syllables of obscure meaning. Attached to a ring or held in a palm for contemplation by the sea, a stone radiates a magic that renders the everyday strange. Science refracted through stone becomes art. Nature refracted through stone no longer seems so natural.

The medieval symbolic registers of stone still linger: “in conventional comparisons, as a type or an emblem of hardness, immobility, silence, lifelessness, insensibility, etc; also, as a type or an emblem of stability, steadfastness, etc.” Rock imbues terra with its firmness, mundane reality with comforting solidity. At those rare times when stone slides, shakes, or melts, what surprises us most is that something so dense can for a moment become kinetic. This motion is always brief, always the forgettable exception. Houses rise swiftly after the earthquake’s leveling; grass and trees effloresce
when lava expands the contours of an island; landslides bury troves that bulldozers or metal detectorists one day retrieve. Stone’s movements are its aberrations. Stone seems an uncomplicated material, instantly knowable, compliant conveyor of factuality. Philosophy’s favorite object, stone is firm support for ponderous thinking. Thales of Miletus, hailed by Aristotle as the first philosopher, turned to lodestone and amber to explain how matter acts. Faith in stone’s epistemological solidity is easy to understand, given its ubiquity, heft, impenetrability, and immensity. Samuel Johnson famously rebuked George Berkeley’s assertion that all matter is “merely ideal” by forcefully kicking a stone that was not to be moved, declaring, “I refute it thus.” The intransigent rock of the real disproves through its serene factuality the vagabond fogs of the imagination. Stone’s reassuring fixity is Johnson’s uncontemplated foundation for self-evident truth. Despite the strength with which he kicks, despite how much Berkeley might desire a world more fluid, the stone does not yield, demarcating the limit beyond which human fancies may not pass, a hard answer from the intractable real. Though flowing sea, restless air, and consuming fire are just as natural, just as truth-filled, stone becomes a stand-in for nature itself, and nature thereby becomes immobile, unchanging and indifferent. Despite the fact that, as Vilém Flusser observes, “every object is stubborn in its own particular way,” stone metonymically stands for the obduracy of all matter. Jane Bennett gets at this logic of stony substructuralism well when she writes, “as noun or adjective material denotes some stable or rock-bottom reality, something adamantine.” The function of the lithic in philosophical discourse is therefore to embody the fixed, the given, the resolutely factual. Stone is the world in its givenness.

We notice only rock that inhibits progress, gets in the way, becomes a stumbling block for the blind. We journey while these impedimenta remain stubbornly emplaced, and collision with lithic immobility hurts, physically and epistemologically. Isidore of Seville derived the Latin word for stone, lapis, from its ability to injure (laedere) the foot (pes). A scruple (“something that troubles the mind”), he continued, derives from scrupus, “a small sharp stone that causes injury and troubles the mind if it should fall into one’s shoe” (16.3.5). Since words are things for Isidore, the lithic comes into apprehension through, with, and as sharp sensation. Its prick is cerebral and physical. Rocks are a keen and affective provocation to thought as well as airy ideation’s antidote. Epistemology is a knowing and feeling; stone is fact-laden and emotion-triggering. Despite its promise of unmediated truth, stone does not offer easy or secure knowledge and exceeds any attempt to still it into familiarity. Rock marks the point at which understanding fails. To run up against a stone wall is to encounter the lithic propensity to induce foundering, to provoke loss of certainty. Stone is not an obstacle to be overcome, but a thing that makes demands, scripts stories, and does not fully yield to human enframing. Thus the poet Richard Wilbur writes, “Kick at the rock, Sam Johnson, break your bones: / But cloudy, cloudy is the stuff of stones.” Thales of Miletus, first Greek philosopher, was drawn to stone’s activity, not its inertness, and found in its ability to hold electric charge and draw substances toward itself evidence of a soul. Stone holds a dense agency.

Drawn like many thinkers to the facticity of stone, Ian Hacking examines the “construction” of dolomite, a rock that consistently challenges those who seek to map its origin—possibly because nanobacteria, organisms too small to be observed, are behind its formation. Hacking writes against a social or linguistic determinism that sees the world as infinitely pliable, the product of human relations, especially language. He details a long process in which errors about the stone accumulate and are shed: dolomite’s supposed calcium is revealed to be magnesium; the fact that dolomite ceased to be created as the primal earth aged gives way to realization that it is still coming into being, but in places hostile to contemporary life. Certain data about the material cling and are retained. Yet an aura of uncertainty consistently surrounds a substance that should be rock solid. What best serves elusive dolomite is, according to Hacking, an “ecumenical descriptive epistemology with hardly any normative implications,” a multifaceted and flexible approach that traces the alliances and networks enabling facts to emerge and endure. This process-oriented perspective stresses limited contingency. We know dolomite in part because we have asked very particular questions of it, mainly centered upon its petrochemical uses. Had we asked other initial queries, we would think of the rock rather differently, and might not have wondered if it could be the product of
nanobacteria and a key to understanding the origins of earthly life. Hacking stresses the dependence of knowledge upon its value-laden sorting into taxonomic systems. It matters to us that the rock is a magnesium carbonate rather than a calcium carbonate, for example, because we desire to extract oil from its depths. From a strictly geological point of view, though, a sediment is a sediment, and there is no good reason to separate your limestone from your dolomite. The history of the substance has as much to do with giving up on certain facts as it does accruing stable knowledge. Even now we don’t know exactly how the rock came to be and cannot say whether science has stabilized dolomite or if dolomite lends a certain stability to a science intent on its explication. A stone so durable and ancient that much of Stonehenge is fashioned from its blunt mass, dolomite is a reality, a brusque truth. It is also a story of nature on the move.

Rock figures the real, and figuring is an active process. Despite Samuel Johnson’s kick that failed to dislodge its unyielding target, rock can be a plastic material, an amenable substance for sculpture, adornment, and edifice-making. Time- and context-bound meshworks of alliance uniting human and nonhuman agents make lithic pliancy and resistance visible. A diamond becomes a precious gem because its rarity, lucidity, and density can sustain strong confederation with human and inhuman forces, tools, economic and aesthetic systems—coalitions friable stones cannot support. Narrative has power over human reality: it can mediate. But that compositional power is contingent rather than absolute, deriving in part from the thing described. Language is inhuman, exerting its own resistance, slide, and material force. Words stammer, sentences unwind, sense-making fails. Although we can find stone that will float like a ship (as the medieval travel writer John Mandeville notes of volcanic pumice), we do not fabricate sailing vessels out of boulders because something in rock resists naval transformation. Stone can be constructed. In the form of concrete, it can take almost any shape an architect desires, for a while, and geophilia inheres in that fashioning. But stone does not offer a blank slate for human stories.

Stone is a catalyst for relation, a generative substantiality through which story tenaciously emerges. This elemental agency is likely shared with all materiality, but its plots, structures, tempo, and denouements are its own. To stone belongs sweeping romances of scale, time, memorialization, creation, cataclysm, a relentless tectonicity (from tekton, a carpenter or builder). Stone speaks differently from its sibling elements of air, water, and lightning-swift fire. Its injunction is always to step out of the breathless rapidity of anthropocentric frames and touch a world possessed of long futurity and deep past, a spatial expanse that stretches from the subterranean to the cosmic verge. Stone’s stories foreground the inhuman in its danger, dispassion, and forcefulness, but they offer as well strange amity, queer fellowship, precarious but enduring cohabitation.

Most ecological analyses are “green,” taking their structural metaphors from the imagined fecundity of plants and conducted within a comfortably human cadence. Stressing balance and sustainability, such studies encounter with difficulty the slow immensity of the geologic. Ecotheory is becoming more prismatic, discovering possibility in challenging, nonverdant hues. Rejecting dreams of green pastoralism and fantasies of sustainability, Steve Mentz articulates an oceanic blue humanities and a “swimmer poetics” that can better encounter “our storm-filled world.” Yet stone is fluid when viewed within its proper duration. Medieval writers understood the process of erosion and captured petrogenesis in the same liquid terms we employ. When the geologist Jan Zalasiewicz describes continental drift he deploys marine language:

The continents do not have to plough through the oceanic floor. Rather they are carried atop the continually moving lithosphere. They forever drift, like so many gigantic stony Flying Dutchmen, as the ocean basins slowly, inexorably open and close. The “continually moving lithosphere” is a sea of stone, the continents its mysterious ships (“so many gigantic stony Flying Dutchmen,” vessels of perpetual voyage, doomed never to reach port). The lithic is oceanic; stone is slow water. Mountains surge and fall, their epochal undulations no less animated than the swell and crash of seas, but impossible for us to view without the aid of narrative and art. Yet volcanoes spurt molten rock that flies, flows, hardens within a human timescale. Ash and lithic powder tumble air and earth in dry liquidity. Though we cannot swim in molten stone—or do so only to face instant immolation,
like Empedocles at Etna—we are saturated in the lithic. A petric poetics would capture this elemental and disanthropocentric restiveness, this negation of the immobility to which stone is too often consigned, this erratic choreography of entwinement, extension beyond apprehensibility, stinging unconcern, stone love, lethal and companionate embrace. Geophilia’s stories unwind with neither climax nor haste, at a spatial and temporal scale that can leave us beside ourselves.

Scientists have christened earth’s primordial era the Hadean, as if this span were something known from our mythology, a prelude and underworld. But the epoch possessed no human content, nothing but fiery gases and congealing rocks and the bare beginnings of single-celled organisms. Remote in time and of vast duration (almost a billion years), the Hadean renders human history brief to imperceptibility. Unlike recent, fleeting, and change-loving animals, stone persists. Though it might offer evidence of vanished life through the ammonite shells and dinosaur bones it entombs, stone seems to us a material well suited for memorials and grave markers. It erodes into clay and sand, rises from the sea or vanishes in subduction, but its decomposition and constant metamorphoses are, within our native temporality, so unhurried that rock is our shorthand for temporal density and strange intrusion. Our documentary bias is for worlds conveyed through words. Yet the earth possesses numerous recording devices, repositories for nonlinguistic inscription, an indigenous but hard lithic poetics. Although tree rings and ice cores yield tales of ancient pollen, glaciation, and aerial chemistry, stone’s archival force endures far longer. Carbon dating and magnetic readings reveal the passing of epochs. A museum of oddities and a relentless clock inhere in strata, dense layers in which the Anthropocene (the era during which human presence is readable through carbon embedded within the geological record) is a sliver. From a longer point of view we are living during a vaster period, the Lithocene.

The Great Oxygenation Event that triggered the massive extinction of earth’s flourishing anaerobic life 2.4 billion years ago enabled an immense mineral thriving. Propelled by photosynthetic algae, the Oxygen Catastrophe (as it is also called) marked a massive release of the free element that spurred the generation and subsequent flourishing of 2,500 new mineral forms, all of which require O2 to burgeon. Most any pebble is replete with microfossils such as acritarchs, the cysts of ancient algae; many of our familiar rocks would not exist without the incorporation of organic material. As a recordation device, stone yields tales of life’s ubiquity. Stone forges relation, conjoining things in ways productive and perilous. Stories of stone therefore tend to be conjunctive and recursive. As enamored of polysyndeton as of litanies, catalogs, and ecstatic lists, lithic poetics love flowing strata, metamorphosis, slow forces of ignition, and inassimilable particles suspended within dynamic aggregates.

Any speaking of the nonhuman is a translation, and therefore error prone, filled with guesswork, and inclined toward fantasy. Story is a parasitical entity that in its familiar forms clearly depends on humans, but story is also itself a living thing and does not necessarily depend upon language to be conveyed. Like the DNA coding of genes, narrative is full of futurity, a mysterious and not wholly predetermined site for the emergence of vitalities: a connection-making and a worlding. Narrative can give a voice to objects, elements and forces. Humans themselves emerge through “material agencies” that leave their traces in lives as well as stories, so that narratives are always animated by multifarious vectors and heterogeneous possibilities not reducible to mere anthropomorphism. Narrative is not inevitably solipsistic. It enables the envisioning of a world indifferent to us, a world that excludes us, and a world that impinges with discomforting intimacy. An ethical machine, story intensifies relation, even with the nonhuman, and therefore offers the best hope we have for moving in whatever tentative way we can beyond anthropocentrism. Stone erodes our long habit of regarding the world as a place fashioned for our habitation, of thinking humans an apex or culmination.

Even when inscribed with a known language or identifiable pictures, stone will arrive into the present as alien presence. Headstones or the ruins of houses quietly shelter, arches and cathedrals triumphantly announce stories of a past otherwise intangible, promises of a future beyond familiar reckoning. Stone is thick with sedimented time. Within both medieval and modern environmental imaginings, rocks and people inhabit temporalities and magnitudes profoundly different. Rocks arrive from alien worlds, rendering coinhabitance and the
bonds of geophilia difficult to discern—or, when realized, jarring. Human powers of destruction almost rival those of asteroids and supervolcanoes. Our affinity with stone is revealing its most lethal aspects. The Anthropocene designates the point in the eighteenth century when industrial deposits become readable in the geological record, but the term offers a problem even as it identifies one. Though immensely useful, the designation has the unintended effect of obliterating the billions of years that precede the embedding of the human in geology’s archive. When we decelerate, imagine a deeper past, get geologic, and then history becomes more eventful, richer, deeper in its strata. Modernity loses some of its luster, prehistory loses homogeneity, and the agency of the material world becomes easier to perceive alongside that of the human. In Australia stone requires a narrative that restores vitality to Gondwana, yet remains stubbornly rooted in the local: rock art, fire management, the offer of fertility or desert, an archive of aboriginal displacements and ecological crises. A gem in medieval Britain might disclose a romantic tale of travel from Persia as well as a more local vignette in which a mother clasps an amulet with the precious stone embedded at its center, hoping during a difficult childbirth that neither she nor her undelivered infant will perish. Stone is never a lone element but a partner with water, fire, air and organic life. In stone a sense of place joins a sense of planet, but even that scale is not enough. Stone emphasizes the cosmos in cosmopolitan, the universe of inhuman forces and materialities that stretches to the distant arms of the galaxy—or at least to what classical and medieval writers called the celestial spheres.

Stony reality is perspectival, a time- and context-bound meshwork that gathers lithic and nonlithic actors without harmonizing, without yielding the unity necessary for secure point of view. As stone is for us one of many objects (some well differentiated and highly esteemed, but most below notice) that constitute the realm of the nonhuman, humans are for stone one of many agents (some well differentiated and highly relatable, most below notice) in the nonlithic realm who are susceptible to being drawn into petric alliance. These relations become palpable once aeonic frames are adopted and the anthropocentric insistence that only human intentionality exists or counts is abandoned. Sometimes the movements toward connection and change that constitute desire are discernible only in traces sedimented over a very long history, one that undermines our foundational narratives of rupture, self-fashioning, and radical discontinuity. When along with viewing stone as nonhuman we attempt to look upon ourselves as nonlithics, the axis of the knowable world shifts.

Geophilia is geology without dispassion. It wanders a steep and rocky way: difficult, slow, full of slide and unexpected conveyance. When the geologist Jan Zalasiewicz writes that a “pebble holds strange worlds within it,” he is providing a contemporary version of the journeys into the fairy Otherworld familiar from medieval myth and romance. These crossings are likewise betrayed by the name of the “strange world” that Zalasiewicz’s pebble opens: the now-lost continent of Avalonia, “one on which—much later—King Arthur would reign, and Shakespeare would write sonnets, and a revolution that would spread factory chimneys and iron foundries across the world.” From Arthur to the Anthropocene, rock archives strange traces, records that we live between catastrophes: between the fire of Armageddon and the ice of some new glaciation, or maybe the flame of Global Warming and the chill of our indifference to the melting Arctic. We dwell between the gales and torrents of hurricanes that drown the poor while we look away, between the movements of the earth that topple our fragile structures, that remind us that continents are motion, that ground (literal and epistemological) is always shifting, that metaphors are concrete and concrete like all stone cracks, pulverizes, transmutes. Isidore of Seville, a seventh century encyclopedist who tried to imagine what the earth would look like if we could view its lands and waters from the heavens, spotted a fossilized sea shell on a mountain top and wrote that the earth’s rocky archive records its elemental upheavals. A glimpse of things to come. Catastrophe dogs us, pulls down everything we compose. The past, the present, the future: stories of wreckage, devastation, dilapidation.

Yet humans regard the world in frames too small. If stone teaches us anything it is that ruin is a beginning, a going from which something vital arrives. Dinosaurs abandoned the bulk of once vast bodies to soar clouds. Long ago they learned to produce song. Medieval legend tells us that gems continue to tumble from Eden’s waters, even if return to that garden is barred. Sometimes these
stones course cascading rivers to contemporary hands. “Standing on the frigid summit of Everest,” writes the geologist David R. Montgomery, “if you could pick up a piece of limestone and view it under a microscope you would find that the top of the world consists of fragmented trilobites and tiny fecal pellets that settled to a tropical seabed.” The sand that was a desert is a life-bearing cliff, the ocean’s edge a fertile field, which had been a mountain is now a glade of sea anemones. The ash from the volcano’s combustion is an archive. That calcium has become a snail’s shell become marble become … this very place where I write, or where you read these words, a ruin that once was stone and a ruin to come, the clasp of the fragile community we for a small space share.

Here. Now.

REFERENCES

[1] I am referencing here what Serenella Iovino and Serpil Oppermann describe as “matter’s ‘narrative’ power of creating configurations of meanings and substances, which enter with human lives into a field of co-emerging interactions” (“Material Ecocriticism: Materiality, Agency, and Models of Narrativity” Ecozon@ 3 [2012]: 75-91, at 79-80).


[3] Pliny, Natural History, 37.9–10. The early encyclopedist Isidore of Seville repeated this genesis for crystal in his Etymologies (16.13), bequeathing the story to the Middle Ages.

[4] Touring an archeological dig in Reykjavik brought other stories of stone’s endurance and domestic intimacy to light: the shells of the seafood eaten in an early settler’s home, a quern, and grooved stones used to weight a net cast for fishing.


[6] For a revelatory ecological rethinking of the classical theory of the elements, see David Macauley, Elemental Philosophy: Earth, Air, Fire, and Water as Environmental Ideas (Albany: State University of New York Press, 2010). Lowell Duckert and I have with our collaborators been similarly attempting the elaboration of what we call an elemental ecocriticism. See the special issue of the journal postmedieval on “Ecomaterialism” and the edited collection Elemental Ecocriticism (Minneapolis: University of Minnesota Press, 2015).

[7] Tim Ingold explores the intransitivity of production in Being Alive, asserting the “priority of ongoing process over final form” as central to life itself: “Producers, both human and non-human, do not so much transform the world, impressing their preconceived designs upon the material substrate of nature, as play their part from within in the world’s transformation of itself. Growing into the world, the world grows in them”: Being Alive: Essays on Movement, Knowledge and Description (London: Routledge, 2011) 6.


As Ian Hacking puts it in *The Social Construction of What?* (Cambridge: Harvard University Press, 1999), “when thinkers—from Dr. Johnson (against the immaterialist Bishop of Berkeley) to Steven Weinberg (against cultural relativists)—want to say something is real, they resort to rocks” (204).


I am thinking here of Julian Yates’s sophisticated exploration of the early modern priest hole as a mechanism that acts to obstruct inquiry and knowledge: *Error, Misuse, Failure: Object Lessons from the English Renaissance* (Minneapolis: University of Minnesota Press, 2003), 145–47.


For an eloquent meditation on Thales and stone’s activity, see Macauley, *Elemental Philosophy*, 51–58.

Hacking, *The Social Construction of What?*, 186–206. For a thoughtful exploration of social constructivism in its variations, see Barbara Herrnstein Smith, *Scandalous Knowledge: Science, Truth and the Human* (Durham: Duke University Press, 2005), 3–15. Smith observes that Hacking goes too far in asserting that a constructivist denies metaphysically that nature possesses a real and inherent structure. Instead, she observes, constructivists “decline to presume” that they know already how the world is ordered as they trace how a concept like nature comes into being, how it changes over time, and what work it accomplishes (6–7).


Stone’s “storied matter” is thick with surprising narratives, some vivid, lyrical, floridly manifest, others impossible to discern or translate. The lithic is an especially dense case of matter’s ability to create “configurations of meanings and substances, which enter with human lives into a field of co-emerging interactions.” Material ecocriticism names an alliance of critical practices that “take matter as a text, as a site of narrativity, a storied matter, a corporeal palimpsest in which stories are inscribed.” See Serenella Iovino and Serpil Oppermann. “Material Ecocriticism: Materiality, Agency, and Models of Narrativity,” 79–80.

My edited collection *Prismatic Ecologies: Ecotheory Beyond Green* (Minneapolis: University of Minnesota Press, 2013) argues for the introduction of unbalanced, nonanthropocentric hues (and perspectives) into ecocriticism.

See Mentz’s book *At the Bottom of Shakespeare’s Ocean* (London: Continuum, 2009), especially good at questioning the pastoralism and balance of green ecologies.


On the death of Empedocles, see the beautiful meditation by Michel Serres,*Biogea*, trans. Randolph Burks (Minneapolis: Univocal, 2012), 76–79.
“Material agencies” is a term I take from Stacy Alaimo’s Bodily Natures: Science, Environment, and the Material Self (Bloomington: Indiana University Press, 2010), where it designates “the often predictable and always interconnected actions” of environments, substances, and bodies in ways that “affect the emergence as well as the unraveling of the human” (3).
