95 Ma: First vertebrates and animals
542 Ma: Cambrian
540 Ma: Two Earths
251 Ma: Paleozoic
65 Ma: Mesozoic
3.8 G: Cambrian
4 Ga: Paleozoic
3 Ga: Mesozoic
2.5 Ga: Cenozoic
2 Ga: Permian
1 Ga: Carboniferous
4.6 Ga: Hadean
3.5 Ga: Archean
ca. 4000 Ma: end of the Late Heavy Bombardment; first life
ca. 3500 Ma: Photosynthesis starts
humans
mammals
and plants
Bio

Daniel J. Glendening is an artist, writer and occasional curator based in Portland, OR. He received his MFA in Visual Studies from Pacific Northwest College of Art in 2011, and his BA in Art Studio and English from UC Davis in 2005. His work has been exhibited nationally, including exhibitions in Portland, San Francisco, Oakland, New York, Philadelphia, Chicago, and elsewhere, and he has been an artist in residence at Caldera and The Wassaic Project. He collects books and mystical shit. More of his work can be viewed at danieljglendening.com.

Artist’s Statement

*An Attempted Partial Taxonomy of Rocks* is a project conceived and produced specifically for *Panhandler*, with special thanks to The Wassaic Project. The work is composed of photographs and found images related to geology, geography, and related concerns, combined with text exploring the relationships between geological scales of time, abstraction, geometry, and myth. The project is also related to states of altered consciousness, power-structures/hierarchies, poetry, death, and sex. The Earth is moving beneath our feet, and all we want to do is dance.
An Attempted Partial Taxonomy of Rocks, as Situated Between Portland, Oregon, and Wassaic, New York, as well as Elsewheres, being Compiled and Annotated by Daniel James Glendening in the Year Two Thousand Eleven.
A rock, or a stone, is very very old. The oldest terrestrial rock is in Canada, in the Acasta Gneiss in the Canadian Shield in the Northwest Territories. It’s about 4.031 billion years old. The Earth itself is thought to have formed about 4.57 billion years ago. This fact is sourced on Wikipedia, so it’s veracity is subject to change or revision at anytime.

A rock falls into one of three categories, or it falls a little more completely into one of three categories, these categories being: Igneous, Sedimentary, and Metamorphic.

Igneous rock is formed when molten magma cools. There are two sub categories, plutonic, aka intrusive, which is formed when magma cools and crystallizes slowly within the crust of the earth, for example, granite. Volcanic/extrusive rocks are formed when magma cools rapidly on the surface of the earth, either as lava or “fragmental ejecta.” This includes rocks such as pumice, basalt, obsidian, and many, many others.¹
Igneous rocks also include andesite, anorthosite, aplite, adakite, hawaiite, basanite, boninite, carbonatite (including enderbite), dacite, diabase/dolerite, diorite, dunite, essesite, foidolite, gabbro, granodiorite, granophyre, harzburgite, hornblende, iceandite, ignimbrite, ijolite, kimberlite, komatiite, lamproite, lamprophyre, latite, lherzolite, monzogranite, monzonite, nepheline syenite, nephelinite, norite, pegmatite, peridotite, phonolite, picrite, porphyry, pyroxenite, quartz diorite, quartz monzonite, rhyodacite, rhyolite (including comendite and pantellerite), scoria, sovite, syenite, tachylyte, tephrite, tonalite, trachyandesite (including benmoreite and the basaltic trachyandesites, mugearite and shoshonite), trachyte, troctolite, trondhjemite, tuff, websterite, and wehrlite.

Sedimentary rocks are formed by the slow compression of sediment and organic matter, rocks like sandstone, or limestone. Metamorphic rock is formed when any rock is exposed to a different temperature set and compression set than its formation environment, changing its crystalline structure.

The oldest rock formation on earth is sometimes held in contention, but it is either a portion of the Isua Greenstone Belt, in Greenland, or the Acasta Gneiss, a rock outcrop in the Slave Craton in Canada.
Sedimentary rocks also include argillite, arkose, banded iron formation aka taconite, breccia, cataclasite (formed by faulting), chalk, chert, claystone, coal, conglomerate (including diamicrite, a poorly sorted conglomerate), coquina, diatomite, dolomite/dolostone, evaporite, flint, greywacke, gritstone, itacolumite, jaspilite, laterite, lignite, marl, mudstone, oil shale, oolite, shale, siltstone, travertine, turbinate, and wackestone.

Metamorphic rock includes anthracite, amphibolite, blueschist, eclogite, gneiss, gossan, granulite, greenstone, hornfels, marble, migmatite, mylonite, pelite, phyllite, psammite, pseudotachylite, quartzite, schist, serpentinite, skarn, slate, suevite, and talc carbonate.
Rocks have a long and tortuous life cycle, as do us all. They are born out of the molten core of the Earth, as magma seeps out of the hot temperatures of the Earth’s center and crystallizes. This process of crystallization results in the formation of igneous rocks. These igneous rocks may then, through a process of erosion by atmospheric elements, be broken down into particulate matter, forming sediment, and, through compression and an extensive period of time, form sedimentary stones. Through tectonic movement, those sedimentary
stones, and the igneous rocks as well, may be again subducted under a competing plate, heating up and forming metamorphic rock, which may then once again become exposed to the elements and form sedimentary particulate matter, or may be more fully subducted, pulled deep into the earth's core and melted, returning it to a magma state. Liquid stone.

Some of the elements we find on earth were and can only be naturally formed in the extreme forces of an exploding star. Gold is not formed on earth, but in such an explosion.
We can detect with sensitive radio telescopes the residual radiowaves left over from the big bang. These radiowaves generate a sequence of tones that when compressed produce a binary translation of pi. The sequence restarts in a regular rhythm, overlapping with the preceding iteration.

The rock is a measure of time. The time of a rock passes slowly, it is ever growing, changing, expressing new and ever more complicated morphologies. It breathes slowly, perspires slowly, and makes love slowly. I swam yesterday in a rock quarry in upstate New York. The quarriers dug deep enough that they broke through to the water table, flooding the rock pit with fresh water, forming a large and sprawling pool impossibly deep and impossibly clear, populated by deep water catfish and translucent crayfish. Geese flew overhead, and deep red-orange “No Trespassing” signs peppered the road in. No, we’re not supposed to be here, but the sun is out for one last day and it’s late in the afternoon and humid. Tomorrow will be too late.
We build castles out of stone. We say that stones weep. We say you can't squeeze water out of a stone. We say that so-and-so has a heart of stone. We say stone free and everybody must get stoned. We rock hard. I have a stone shaped like a heart. I have polished stones that are pink and clear. We skip stones on the river and search the beach for opals and cut open thunder eggs to hatch whatever is inside. Houses are sometimes made of stone, and walls in the forest or along the highway outside of Sonoma. Towers are made of stone, and monuments.

Mountains are made of stone because it lasts a very long time.
This is a rock I found last Saturday, while Emily and I were walking on beach on the southwestern edge of Herron Island. The beach was all rocks, many sizes and shapes, some coated with colonies of barnacles and small black snails.
This rock is black, or blackish. A sort of blackish shade of deep deep green, but so deep a shade that it appears to be black unless one really looks. A green like, maybe, a spruce bough at night when there is no moon and the cloud cover is blacking out the stars. It has one plane larger than the others, with an edge roughly an inch in length. We’ll call that edge A. We’ll say, for descriptive purposes, that edge A runs along the X axis, from (0,0) to (0,1”). What we’ll call edge B is approximately 1.25” in length, also beginning at the origin (0,0). Edge B and edge A form an angle of approximately 80 degrees, such that the end point of edge B that is not the origin has a value that is composed of a positive X and positive Y coordinate.

Edge B also bows slightly, a slight swelling as the line nears its end coordinate, a swelling away from edge A.

Edge C, beginning from the end coordinate of edge B, is approximately 5/8” in length, in a direction that would form a 30 degree angle with a line parallel to the X axis. Edge D is approximately 1” in length, beginning at the endpoint of edge C, and at an angle such that the edge slopes toward the X axis, forming a -57 degree angle with a line drawn parallel to the X axis and passing through the intersection of edge C and edge D. Edge D curves
in a steady manner, bowing towards the Y axis, forming a concave edge. This bowing is slight, such that if a straight line is drawn between the beginning and end point of edge D, edge D will, at its mid-point and the deepest point of the curve, be approximately 1/16” away from the straight line. Edge E is approximately .75” in length, connecting the free end points of edge D and edge A, forming a closed polygonal shape (although slightly un-polygonal due to the slight curvature of two of the sides).
Edge A, B, C, D and E create face 1. We can imagine face 1, for the purposes of demonstration, as the top.

We can also then imagine the front as being composed of two faces, face 2 and face 3. Face 2 begins with edge A. Edge F connects to edge A at the origin (0,0) and is approximately .5” in length, terminating at a point just shy of -.5” on the Z axis, and -1/8” on the Y axis, with an X coordinate of 0. Edge G
connects the terminus of edge F to the intersection of edges A and E, thus generating the triangular face that is face 2. Edge H originates at the intersection of edges F and G, and is approximately 1” long. The terminus sits, relative to the origin point of edge H, approximately -.25” on the Z axis and .25” on the Y axis. Edge I, originating at the terminus of edge H, is approximately .5” long, at an angle of approximately 146 degrees relative to edge H on the Z axis with a Y coordinate of approximately 3/8.” Edge J connects the terminus of edge I to the intersection of edges G and A, delineating face 3.

The series of faces composing the right side of the rock consist of three triangular faces and one roughly rectangular polygon.

Face 4 takes as two of its sides edge J and edge E, and may be completed by an edge connecting the intersection of edges J and I to the intersection of edges E and D, forming edge K. Edge L is .5” in length, originating at the intersection of edges E and D, and running parallel to the Z axis in a negative direction. Edge M connects the point of intersection between edges J and I with the
terminus of edge L, forming face 5. Face 6 is delineated by edges M and I, and edge N, connecting the intersection of edges I and H to the intersection of edges M and L. A new edge, edge O, extends from the intersection of edges L and M 7/8" in a direction nearly perpendicular to the X axis, but at a more obtuse angle of 110 degrees, as measured from the positive X direction (edge O is, also, slightly concave, as is edge D, curving inward towards the core of the stone); edge O also angles slightly in the –Z direction at an angle of 20 degrees relative to the XY plane. Edge P terminates at the intersection of edges C and D, and the terminus of edge O, enclosing the four-sided polygonal face 7. Edge Q connects the intersection of edges H and N to the intersection of edges O and P, forming face 8 and completing the right side of the rock.
Face 9 is bound by edge C, edge P, edge R running 7/8" from the intersection of edges P and O in an X/Y direction parallel to edge C and angling in the positive Z direction eighteen degrees relative to the XY plane, and edge S, connecting the terminus of edge R to the intersection point of edges C and B.

Face 10 is bounded by edges B, S, and T, edge T being defined as the line between the intersection of edges R and S and the intersection of edges B and F. Face 11 is bounded by edges T, F and U, edge U being that edge which connects the intersection points of TS and FH.
Face 12, the bottom, is that face bounded by edges U, R, Q, and H.

This is a small rock I found on Saturday. It is almost black. Its surface is creased with seams running from one side to the other, and the top is clouded with the calcified footprints of five barnacles. These markings are white, and fitted closely together like cells in a leaf. Each has an empty center, where the black comes through, and there are lines radiating outward from this center like those ghost tracings one gets from a mushroom spore print.

Something once lived here, but not anymore.
When Grandmother's Grandfather was a very young man he climbed the mountain there, just on the horizon. He climbed for many nights, and watched the sun rise and set and rise and set and rise and set and leave its embers in the sky like burning flares. Eventually, he found himself at the top, staring out over the whole of the world like a god, or a salesman. He was looking for power, there among the snowdrifts and the granite boulders, round and wind-worn.

The flood is symbolic of isolation.

Before he had set out, he had sat at his cottage in the meadow, on the porch in the sun. He let the heat leech the salts from his skin. He carved out five wedges of elk horn, wearing through several knives, tossing them aside as they grew dull.

In his climb up the mountain, once he reached the treeline, where the ground was covered in snow that never melts and only the boulders live, he used those wedges of elk horn to carve out steps in the ice. As each wedge wore out, snapping brittle, he tossed it aside. By the time his winding stairway, cold and glittering in the sun with a sharp blue light,
reached the peak of the mountain, and he stood looking out like a god or a salesman over the valley, his last wedge of horn was dull and worn smooth. He tossed it down, and raised his arms skyward and screamed a red scream. The sun was at its zenith.

The porch is symbolic of a quiet paradise, a personal Eden, a bed.

The front door is locked and we never go inside. All we know is the porch and the porch is all we need.

At the peak of the mountain, in the ancient crater, was a small lake, a pool of mercury. Grandmother’s Grandfather stripped off his jeans and his flannel shirt, untied his long long hair and thrust himself down upon the snow. He took the snow in his mouth and cradled
it on his tongue, rolling it and savoring its sweetness, wrapping his body around the shifting writhing banks of snow. In one ecstatic motion he stood and plunged himself naked into the frigid waters of the lake, frantically, demoniacally masturbating until he erupted into the water, his semen hanging suspended there like a tiny, icy, galaxy.

He whooped, and shook his hair. He swam about, and washed himself with the water and as he rose his hair grew longer still, spreading and branching out across the surface like a river delta.

An explosion is symbolic of creation. It will bloom into a beautiful orange and red rose and consume its surroundings like a hungry child, and then new growth will emerge from the pile of smoldering ashes and we will dance all around it and weep tears of pain and joy and we will
sweat from the sun and pain and we will, too, be like Jesus Christ our savior and lord of lords all happy and transcendent.

He stood draped in ice roses and lilies. Shining, studded with diamonds and jade.

Jesus Christ is symbolic of the son of God and is therefore symbolic of perfection. Oh the perfect man, you know you want to hit that shit.

The mountain spoke to him.
“You will grow to be an old old man. You will, in your final days, bloom with moss and lichen. It will sprout from your knees and elbows; after your hair has gone gray and fallen, moss will grow in its stead; moss will grow over your chin, you will carry a beard of moss, and lichen will spread between your thighs, and you will die a stony death.

“When you die, stony and moss covered, my head will burst, and pour forth into the valley with tears of grief.”

Cigarettes are symbols of time. They count down the minutes just like the hands of a clock or the branching of ones antlers or the steady growth of moss. Or the sprouting of feathers and our slow transformation from one shape to another.

John Henry is symbolic of man’s doomed struggle against machine. John Henry had heart, though. Pecos Bill is symbolic of man’s doomed struggle for love. Annie Oakley’s up there on the moon. Paul Bunyan is symbolic of the days when men were men and they all had a fucking blue ox at their side and didn’t need love. They found it out in the world, chopping down trees, deforesting whole hillside with one swipe, and all they needed was their best friend. An ox.
Grandmother's Grandfather began to weep, his head hung. He started down the mountain, his tears freezing fast to his cheeks.
The desert, also, is symbolic of purity. The desert is burned clean. The air is dry and clean and made of stone. You can feel yourself being sterilized under the desert sun. Everything is brownish red, even the cities. Everything is unified. Everything is clinging to existence by a thin fucking thread and one foul step can send it all spiraling down into the canyon, and that, my friend is purity.
He sat alone the rest of his life, on the porch of his cabin in the sun. He never stopped crying, the tears draining unendingly from his eyes nourished the slow growth of moss about his face, his sweat fed the lichen beginning to take root on his groin. His hair, his beard, his eyebrows all turned to long, flowing Spanish moss, and lichen crawled forth from between his thighs to sheath his body.

The cactus is symbolic of foresight.
He died there, and the mountain wept.

Don Quixote is symbolic of a man who sees things his own way. Who cares if it’s accurate or not, it’s true, and right, and just. Quixote personifies purity.

Everything symbolizes purity, except for the things that do not.

Mountains at one point lived and walked and talked and had little mountain daughters that they raised right and not to be promiscuous but presumably, as they had daughters and sons they also had sex and what a sight that must have been, two mountains grinding their stony genitals against each other and groaning huge mountain groans of pleasure.

Perhaps earthquakes are just that: tectonic plates rubbing their granite clits and cocks together beneath the blanket of the earth, as volcanoes burst forth, erupting in pleasure.

Bath water is not purity.

The Valley is not purity.

Coffins are purity, in a round about way. To be dead is a pure state of being.
The moon has vanished, and the sun is always hanging just under the horizon, leaking its blue light into the darkness of night. It is morning about to crack open upon the world like a dropped egg, and we will close our eyes and stop the movement of the clocks and stop the birds in the sky and stop this bead of sweat running like a tear down the side of your nose.

I have been waiting up here on top of the mountain. I have been waiting in your silence, living off of Don Quixote. I slice a page cleanly out from the binding, and eat it with a glass of water. You lay your prose down like that Irish stonemason lay his stones, up in the hills behind Killarney. With his thick white beard, he fit each angle into its fated mate, and they curled about each other in the sweetest embrace one could imagine between two stones. It was raining.

We will never, ever, see the sun rise.
A rock, or a stone, is very very old. The oldest rock is in Canada, in the Acasta Gneiss in the Canadian Shield in the Northwest Territories. It’s about 4.031 billion years old.

The Earth is thought to have formed about 4.57 billion years ago.