

Tentacular Thinking: Anthropocene, Capitalocene, Chthulucene

We are all lichens.

—Scott Gilbert, “We Are All Lichens Now”¹

Think we must. We must think.

—Stengers and Despret, *Women Who Make a Fuss*²

What happens when human exceptionalism and bounded individualism, those old saws of Western philosophy and political economics, become unthinkable in the best sciences, whether natural or social? Seriously unthinkable: not available to think with. Biological sciences have been especially potent in fermenting notions about all the mortal inhabitants of the Earth since the imperializing eighteenth century. *Homo sapiens*—the Human as species, the Anthropos as the human species, Modern Man—was a chief product of these knowledge practices. What happens when the best biologies of the twenty-first century cannot do their job with bounded individuals plus contexts, when organisms plus environments, or genes plus whatever they need, no longer sustain the overflowing richness of biological knowledges, if they ever did? What happens when organisms plus environments can hardly be remembered for the same reasons that even Western-indebted people can no longer figure themselves as individuals and societies of individuals in human-only histories? Surely such a transformative time on Earth must not be named the Anthropocene!

With all the unfaithful offspring of the sky gods, with my littermates who find a rich wallow in multispecies muddles, I want to make a critical and joyful fuss about these matters. I want to stay with the trouble, and the only way I know to do that is in generative joy, terror, and collective thinking.

My first demon familiar in this task will be a spider, *Pimosa cthulhu*, who lives

under stumps in the redwood forests of Sonoma and Mendocino Counties, near where I live in North Central California.³ Nobody lives everywhere; everybody lives somewhere. Nothing is connected to everything; everything is connected to something.⁴ This spider is in place, has a place, and yet is named for intriguing travels elsewhere. This spider will help me with returns, and with roots and routes.⁵ The eight-legged tentacular arachnid that I appeal to gets her generic name from the language of the Goshute people of Utah and her specific name from denizens of the depths, from the abyssal and elemental entities, called chthonic.⁶ The chthonic powers of Terra infuse its tissues everywhere, despite the civilizing efforts of the agents of sky gods to astralize them and set up chief Singletons and their tame committees of multiples or subgods, the One and the Many. Making a small change in the biologist's taxonomic spelling, from cthulhu to chthulu, with renamed *Pimoa chthulu* I propose a name for an elsewhere and elsewhen that was, still is, and might yet be: the Chthulucene. I remember that *tentacle* comes from the Latin *tentaculum*, meaning "feeler," and *tentare*, meaning "to feel" and "to try"; and I know that my leggy spider has many-armed allies. Myriad tentacles will be needed to tell the story of the Chthulucene.⁷

The tentacular are not disembodied figures; they are cnidarians, spiders, fingery beings like humans and raccoons, squid, jellyfish, neural extravaganzas, fibrous entities, flagellated beings, myofibril braids, matted and felted microbial and fungal tangles, probing creepers, swelling roots, reaching and climbing tendrilled ones. The tentacular are also nets and networks, it critters, in and out of clouds. Tentacularity is about life lived along lines—and such a wealth of lines—not at points, not in spheres. "The inhabitants of the world, creatures of all kinds, human and non-human, are wayfarers"; generations are like "a series of interlaced trails."⁸

All the tentacular stringy ones have made me unhappy with posthumanism, even as I am nourished by much generative work done under that sign. My partner Rusten Hogness suggested compost instead of posthuman(ism), as well as humusities instead of humanities, and I jumped into that wormy pile.⁹

Human as humus has potential, if we could chop and shred human as Homo, the detumescing project of a self-making and planet-destroying CEO. Imagine a conference not on the Future of the Humanities in the Capitalist Restructuring University, but instead on the Power of the Humusities for a Habitable Multispecies Muddle! Ecosexual artists Beth Stephens and Annie Sprinkle made a bumper sticker for me, for us, for SF: "Composting is so hot!"



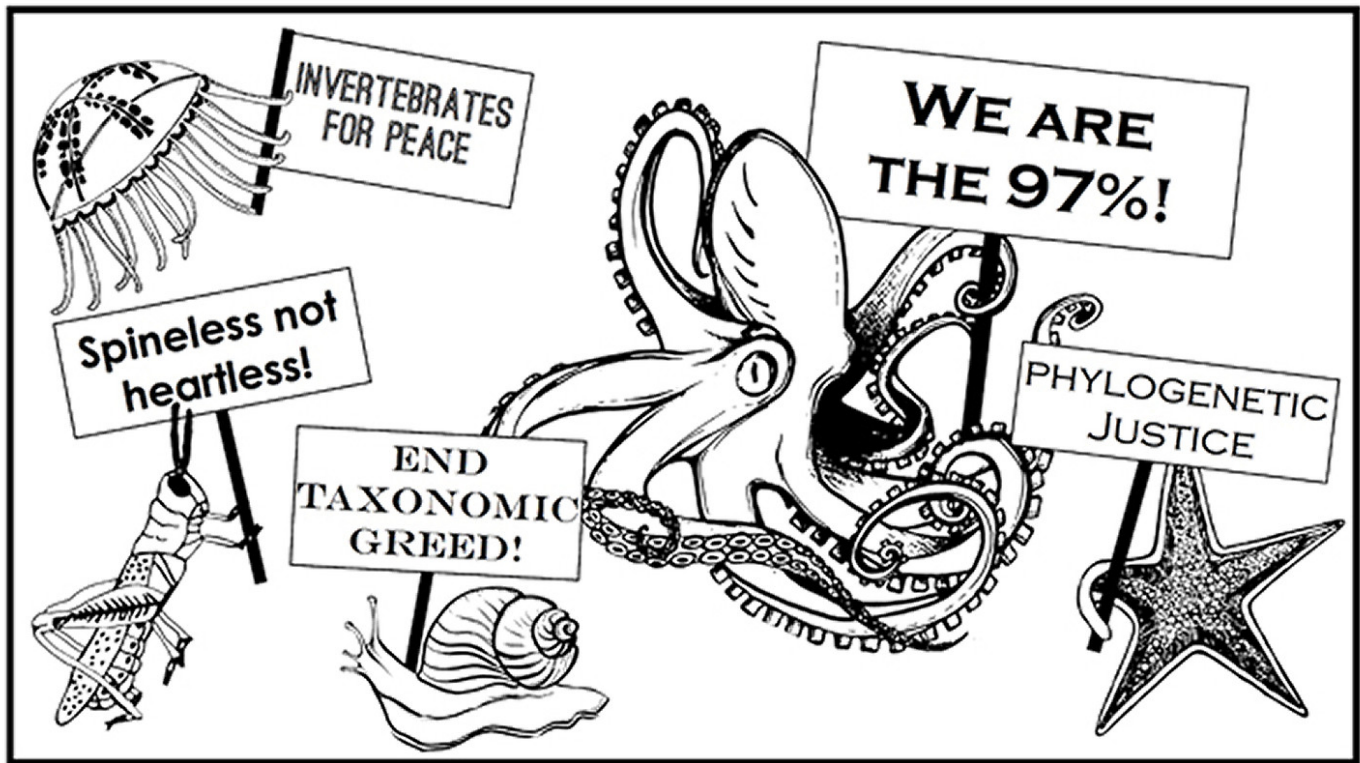
A pro-composting bumper sticker designed by Annie Sprinkle and Beth Stevens with Kern Toy Design.

Shaping her thinking about the times called Anthropocene and "multi-faced Gaia" (Stengers's term) in companionable friction with Latour, Isabelle Stengers does not ask that we recompose ourselves to become able, perhaps, to "face Gaia." But like Latour and even more like Le Guin, one of her most generative SF writers, Stengers is adamant about changing the story. Focusing on intrusion rather than composition, Stengers calls Gaia a fearful and devastating power that intrudes on our categories of thought, that intrudes on thinking itself.¹⁰ Earth/Gaia is maker and destroyer, not resource to be

exploited or ward to be protected or nursing mother promising nourishment. Gaia is not a person but complex systemic phenomena that compose a living planet. Gaia's intrusion into our affairs is a radically materialist event that collects up multitudes. This intrusion threatens not life on Earth itself—microbes will adapt, to put it mildly—but threatens the livability of Earth for vast kinds, species, assemblages, and individuals in an "event" already under way called the Sixth Great Extinction.¹¹

Stengers, like Bruno Latour, evokes the name of Gaia in the way James Lovelock and Lynn Margulis did, to name complex nonlinear couplings between processes that compose and sustain entwined but nonadditive subsystems as a partially cohering systemic whole.¹² In this hypothesis, Gaia is autopoietic—self-forming, boundary maintaining, contingent, dynamic, and stable under some conditions but not others. Gaia is not reducible to the sum of its parts, but achieves finite systemic coherence in the face of perturbations within parameters that are themselves responsive to dynamic systemic processes. Gaia does not and could not care about human or other biological beings' intentions or desires or needs, but Gaia puts into question our very existence, we who have provoked its brutal mutation that threatens both human and nonhuman livable presents and futures. Gaia is not about a list of questions waiting for rational policies;¹³ Gaia is an intrusive event that undoes thinking as usual. "She is what specifically questions the tales and refrains of modern history. There is only one real mystery at stake, here: it is the answer we, meaning those who belong to this history, may be able to create as we face the consequences of what we have provoked."¹⁴

OCTOPI WALL STREET



Invertebrates are 97% of animal diversity!

Brought to you by Oregon Institute of Marine Biology, University of Oregon

Humans are the entitled minority in the face of the sixth great extinction. Copyright: Oregon Institute of Marine Biology, University of Oregon

Anthropocene

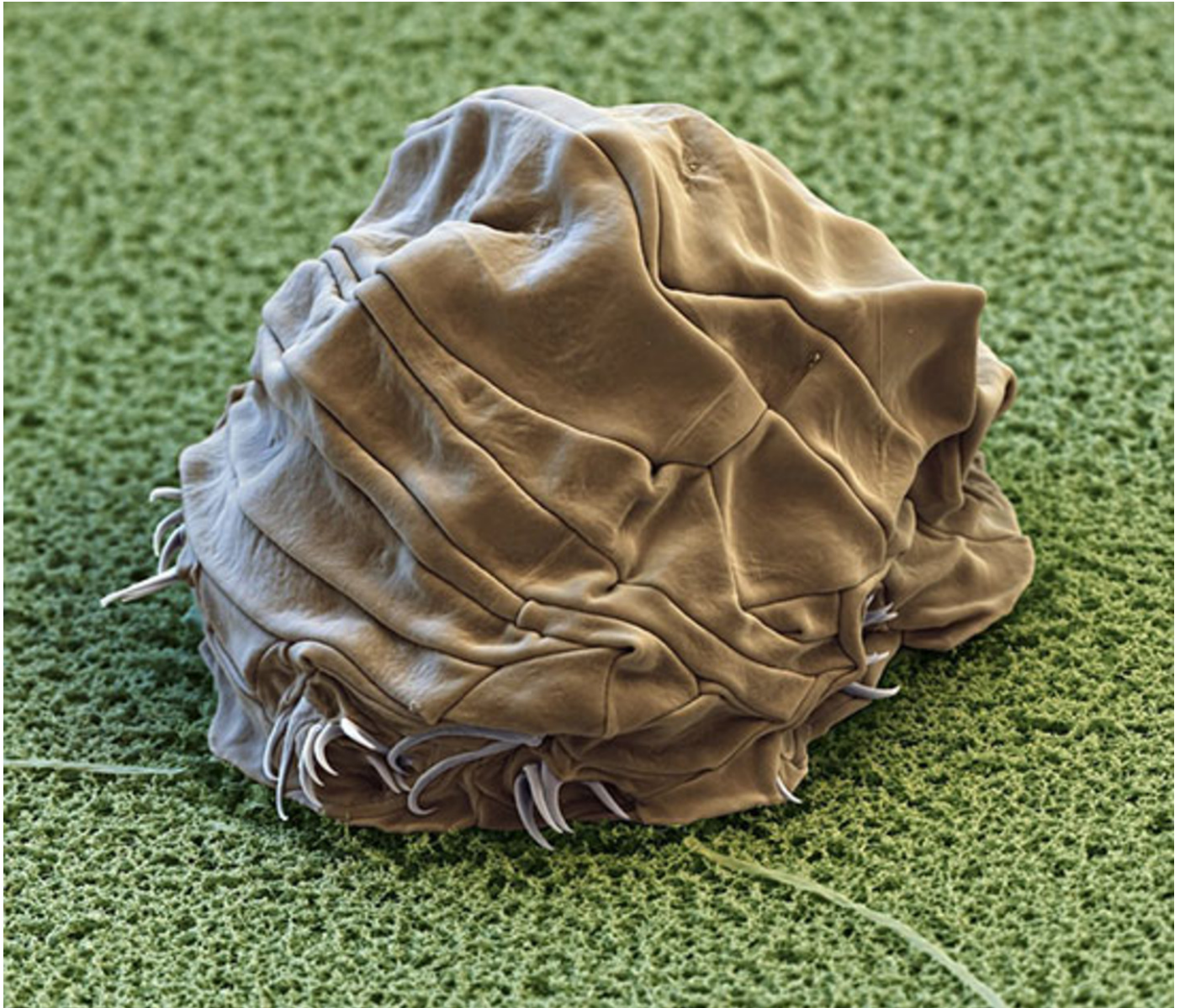
So, what have we provoked? Writing in the midst of California's historic multiyear drought and the explosive fire season of 2015, I need the photograph of a fire set deliberately in June 2009 by Sustainable Resource Alberta near the Saskatchewan River Crossing on the Icefields Parkway in order to stem the spread of mountain pine beetles, to create a fire barrier to future fires, and to enhance biodiversity. The hope is that this fire acts as an ally for resurgence. The devastating spread of the pine beetle across the North American West is a major chapter of climate change in the Anthropocene. So too are the predicted megadroughts and the extreme and extended fire seasons. Fire in the North American West has a complicated multispecies

history; fire is an essential element for ongoing, as well as an agent of double death, the killing of ongoingness. The material semiotics of fire in our times are at stake.

Thus it is past time to turn directly to the time-space-global thing called Anthropocene.¹⁵ The term seems to have been coined in the early 1980s by University of Michigan ecologist Eugene Stoermer (d. 2012), an expert in freshwater diatoms. He introduced the term to refer to growing evidence for the transformative effects of human activities on the Earth. The name Anthropocene made a dramatic star appearance in globalizing discourses in 2000 when the Dutch Nobel Prize–winning atmospheric chemist Paul Crutzen joined Stoermer to propose that human activities had been of such a kind and magnitude as to merit the use of a new geological term for a new epoch, superseding the Holocene, which dated from the end of the last ice age, or the end of the Pleistocene, about twelve thousand years ago. Anthropogenic changes signaled by the mid-eighteenth-century steam engine and the planet-changing exploding use of coal were evident in the airs, waters, and rocks.¹⁶ Evidence was mounting that the acidification and warming of the oceans are rapidly decomposing coral reef ecosystems, resulting in huge ghostly white skeletons of bleached and dead or dying coral. That a symbiotic system—coral, with its watery world-making associations of cnidarians and zooanthellae with many other critters too—indicated such a global transformation will come back into our story.

But for now, notice that the Anthropocene obtained purchase in popular and scientific discourse in the context of ubiquitous urgent efforts to find ways of talking about, theorizing, modeling, and managing a Big Thing called Globalization. Climate-change modeling is a powerful positive feedback loop provoking change-of-state in systems of political and ecological discourses.¹⁷ That Paul Crutzen was both a Nobel laureate and an atmospheric chemist mattered. By 2008, many scientists around the world had adopted the not-yet-official but increasingly indispensable term;¹⁸ and myriad research projects, performances, installations, and conferences in the arts, social

sciences, and humanities found the term mandatory in their naming and thinking, not least for facing both accelerating extinctions across all biological taxa and also multispecies, including human, immiseration across the expanse of Terra. Fossil-burning human beings seem intent on making as many new fossils as possible as fast as possible. They will be read in the strata of the rocks on the land and under the waters by the geologists of the very near future, if not already. Perhaps, instead of the fiery forest, the icon for the Anthropocene should be Burning Man!¹⁹



A tardigrade can withstand up to five years dehydrated making it one of the most resilient critters presently known.

The scale of burning ambitions of fossil-making man—of this Anthropos

whose hot projects for accelerating extinctions merits a name for a geological epoch—is hard to comprehend. Leaving aside all the other accelerating extractions of minerals, plant and animal flesh, human homelands, and so on, surely, we want to say, the pace of development of renewable energy technologies and of political and technical carbon pollution-abatement measures, in the face of palpable and costly ecosystem collapses and spreading political disorders, will mitigate, if not eliminate, the burden of planet-warming excess carbon from burning still more fossil fuels. Or, maybe the financial troubles of the global coal and oil industries by 2015 would stop the madness. Not so. Even casual acquaintance with the daily news erodes such hopes, but the trouble is worse than what even a close reader of IPCC documents and the press will find. In “The Third Carbon Age,” Michael Klare, a professor of Peace and World Security Studies at Hampshire College, lays out strong evidence against the idea that the old age of coal, replaced by the recent age of oil, will be replaced by the age of renewables.²⁰ He details the large and growing global national and corporate investments in renewables; clearly, there are big profit and power advantages to be had in this sector. And at the same time, every imaginable, and many unimaginable, technologies and strategic measures are being pursued by all the big global players to extract every last calorie of fossil carbon, at whatever depth and in whatever formations of sand, mud, or rock, and with whatever horrors of travel to distribution and use points, to burn before someone else gets at that calorie and burns it first in the great prick story of the first and the last beautiful words and weapons.²¹ In what he calls the Age of Unconventional Oil and Gas, hydrofracking is the tip of the (melting) iceberg. Melting of the polar seas, terrible for polar bears and for coastal peoples, is very good for big competitive military, exploration, drilling, and tanker shipping across the northern passages. Who needs an ice-breaker when you can count on melting ice?²²

A complex systems engineer named Brad Werner addressed a session at the meetings of the American Geophysical Union in San Francisco in 2012. His point was quite simple: scientifically speaking, global capitalism “has made the depletion of resources so rapid, convenient and barrier-free that ‘earth-

human systems' are becoming dangerously unstable in response." Therefore, he argued, the only scientific thing to do is revolt! Movements, not just individuals, are critical. What is required is action and thinking that do not fit within the dominant capitalist culture; and, said Werner, this is a matter not of opinion, but of geophysical dynamics. The reporter who covered this session summed up Werner's address: "He is saying that his research shows that our entire economic paradigm is a threat to ecological stability."²³ Werner is not the first or the last researcher and maker of matters of concern to argue this point, but his clarity at a scientific meeting is bracing. Revolt! Think we must; we must think. Actually think, not like Eichmann the Thoughtless. Of course, the devil is in the details—how to revolt? How to matter and not just want to matter?



Capitalocene

But at least one thing is crystal clear. No matter how much he might be caught in the generic masculine universal and how much he only looks up, the Anthropos did not do this fracking thing and he should not name this double-death-loving epoch. The Anthropos is not Burning Man after all. But because the word is already well entrenched and seems less controversial to many important players compared to the Capitalocene, I know that we will continue to need the term "Anthropocene." I will use it too, sparingly; what and whom the Anthropocene collects in its refurbished netbag might prove potent for living in the ruins and even for modest terran recuperation.

Still, if we could only have one word for these SF times, surely it must be the Capitalocene.²⁴

Species Man did not shape the conditions for the Third Carbon Age or the Nuclear Age. The story of Species Man as the agent of the Anthropocene is an almost laughable rerun of the great phallic humanizing and modernizing Adventure, where man, made in the image of a vanished god, takes on superpowers in his secular-sacred ascent, only to end in tragic detumescence, once again. Autopoietic, self-making man came down once again, this time in tragic system failure, turning biodiverse ecosystems into flipped-out deserts of slimy mats and stinging jellyfish. Neither did technological determinism produce the Third Carbon Age. Coal and the steam engine did not determine the story, and besides the dates are all wrong, not because one has to go back to the last ice age, but because one has to at least include the great market and commodity reworldings of the long sixteenth and seventeenth centuries of the current era, even if we think (wrongly) that we can remain Euro-centered in thinking about "globalizing" transformations shaping the Capitalocene.²⁵ One must surely tell of the networks of sugar, precious metals, plantations, indigenous genocides, and slavery, with their labor innovations and relocations

and recompositions of critters and things sweeping up both human and nonhuman workers of all kinds. The infectious industrial revolution of England mattered hugely, but it is only one player in planet-transforming, historically situated, new-enough, worlding relations. The relocation of peoples, plants, and animals; the leveling of vast forests; and the violent mining of metals preceded the steam engine; but that is not a warrant for wringing one's hands about the perfidy of the Anthropos, or of Species Man, or of Man the Hunter.

The systemic stories of the linked metabolisms, articulations, or coproductions (pick your metaphor) of economies and ecologies, of histories and human and nonhuman critters, must be relentlessly opportunistic and contingent. They must also be relentlessly relational, sympoietic, and consequential.²⁶ They are terran, not cosmic or blissed or cursed into outer space. The Capitalocene is terran; it does not have to be the last biodiverse geological epoch that includes our species too. There are so many good stories yet to tell, so many netbags yet to string, and not just by human beings.

As a provocation, let me summarize my objections to the Anthropocene as a tool, story, or epoch to think with:

(1) The myth system associated with the Anthropos is a setup, and the stories end badly. More to the point, they end in double death; they are not about ongoingness. It is hard to tell a good story with such a bad actor. Bad actors need a story, but not the whole story.

(2) Species Man does not make history.

(3) Man plus Tool does not make history. That is the story of History human exceptionalists tell.

(4) That History must give way to geostories, to Gaia stories, to symchthonic stories; terrans do webbed, braided, and tentacular living and dying in sympoietic multispecies string figures; they do not do History.

(5) The human social apparatus of the Anthropocene tends to be top-heavy and bureaucracy prone. Revolt needs other forms of action and other stories for solace, inspiration, and effectiveness.

(6) Despite its reliance on agile computer modeling and autopoietic systems theories, the Anthropocene relies too much on what should be an “unthinkable” theory of relations, namely the old one of bounded utilitarian individualism—preexisting units in competition relations that take up all the air in the atmosphere (except, apparently, carbon dioxide).

(7) The sciences of the Anthropocene are too much contained within restrictive systems theories and within evolutionary theories called the Modern Synthesis, which for all their extraordinary importance have proven unable to think well about sympoiesis, symbiosis, symbiogenesis, development, webbed ecologies, and microbes. That’s a lot of trouble for adequate evolutionary theory.

(8) Anthropocene is a term most easily meaningful and usable by intellectuals in wealthy classes and regions; it is not an idiomatic term for climate, weather, land, care of country, or much else in great swathes of the world, especially but not only among indigenous peoples.

I am aligned with feminist environmentalist Eileen Crist when she writes against the managerial, technocratic, market-and-profit besotted, modernizing, and human-exceptionalist business-as-usual commitments of so much Anthropocene discourse. This discourse is not simply wrong-headed and wrong-hearted in itself; it also saps our capacity for imagining and caring for other worlds, both those that exist precariously now (including those called wilderness, for all the contaminated history of that term in racist settler colonialism) and those we need to bring into being in alliance with other critters, for still possible recuperating pasts, presents, and futures. “Scarcity’s deepening persistence, and the suffering it is auguring for all life, is an artifact of human exceptionalism at every level.” Instead, a humanity with more earthly integrity “invites the *priority* of our pulling back and scaling down, of

welcoming limitations of our numbers, economies, and habitats for the sake of a higher, more inclusive freedom and quality of life.”²⁷

If Humans live in History and the Earthbound take up their task within the Anthropocene, too many Posthumans (and posthumanists, another gathering altogether) seem to have emigrated to the Anthropocene for my taste. Perhaps my human and nonhuman people are the dreadful Chthonic ones who snake within the tissues of Terrapolis.

Note that insofar as the Capitalocene is told in the idiom of fundamentalist Marxism, with all its trappings of Modernity, Progress, and History, that term is subject to the same or fiercer criticisms. The stories of both the Anthropocene and the Capitalocene teeter constantly on the brink of becoming much Too Big. Marx did better than that, as did Darwin. We can inherit their bravery and capacity to tell big-enough stories without determinism, teleology, and plan.²⁸

Historically situated relational worldings make a mockery both of the binary division of nature and society and of our enslavement to Progress and its evil twin, Modernization. The Capitalocene was relationally made, and not by a secular godlike anthropos, a law of history, the machine itself, or a demon called Modernity. The Capitalocene must be relationally unmade in order to compose in material-semiotic SF patterns and stories something more livable, something Ursula K. Le Guin could be proud of. Shocked anew by our—billions of Earth habitants’, including your and my—ongoing daily assent in practice to this thing called capitalism, Philippe Pignarre and Isabelle Stengers note that denunciation has been singularly ineffective, or capitalism would have long ago vanished from the Earth. A dark bewitched commitment to the lure of Progress (and its polar opposite) lashes us to endless infernal alternatives, as if we had no other ways to reworld, reimagine, relive, and reconnect with each other, in multispecies well-being. This explication does not excuse us from doing many important things better; quite the opposite. Pignarre and Stengers affirm on-the-ground collectives capable of inventing new practices of imagination, resistance, revolt, repair, and mourning, and of

living and dying well. They remind us that the established disorder is not necessary; another world is not only urgently needed, it is possible, but not if we are ensorcelled in despair, cynicism, or optimism, and the belief/disbelief discourse of Progress.²⁹ Many Marxist critical and cultural theorists, at their best, would agree.³⁰ So would the tentacular ones.³¹



This squishy octopus-shaped machine is one example from the growing field of soft robotics. The Octobot described today is the first self-contained robot made exclusively of soft, flexible parts.

Chthulucene

Reaching back to generative complex systems approaches by Lovelock and Margulis, Gaia figures the Anthropocene for many contemporary Western thinkers. But an unfurling Gaia is better situated in the Chthulucene, an ongoing temporality that resists figuration and dating and demands myriad names. Arising from Chaos,³² Gaia was and is a powerful intrusive force, in no one's pocket, no one's hope for salvation, capable of provoking the late twentieth century's best autopoietic complex systems thinking that led to recognizing the devastation caused by anthropogenic processes of the last few centuries, a necessary counter to the Euclidean figures and stories of Man.³³ Brazilian anthropologists and philosophers Eduardo Viveiros de Castro and Déborah Danowski exorcise lingering notions that Gaia is confined to the ancient Greeks and subsequent Eurocultures in their refiguring the urgencies of our times in the post-Eurocentric conference "The Thousand Names of Gaia."³⁴ Names, not faces, not morphs of the same, something else, a thousand somethings else, still telling of linked ongoing generative and destructive worlding and reworlding in this age of the Earth. We need another figure, a thousand names of something else, to erupt out of the Anthropocene into another, big-enough story. Bitten in a California redwood forest by spidery *Pimosa chthulhu*, I want to propose snaky Medusa and the many unfinished worldings of her antecedents, affiliates, and descendants. Perhaps Medusa, the only mortal Gorgon, can bring us into the holobiomes of Terrapolis and heighten our chances for dashing the twenty-first-century ships of the Heroes on a living coral reef instead of allowing them to suck the last drop of fossil flesh out of dead rock.





Tunga, From the series *Vanguardia Viperina*, 1985. Black and white photograph.

The terra-cotta figure of Potnia Theron, the Mistress of the Animals, depicts a winged goddess wearing a split skirt and touching a bird with each hand.³⁵

She is a vivid reminder of the breadth, width, and temporal reach into pasts and futures of chthonic powers in Mediterranean and Near Eastern worlds and beyond.³⁶ Potnia Theron is rooted in Minoan and then Mycenaean cultures and infuses Greek stories of the Gorgons (especially the only mortal Gorgon, Medusa) and of Artemis. A kind of far-traveling Ur-Medusa, the Lady of the Beasts is a potent link between Crete and India. The winged figure is also called Potnia Melissa, Mistress of the Bees, draped with all their buzzing-stinging-honeyed gifts. Note the acoustic, tactile, and gustatory senses elicited by the Mistress and her sympoietic, more-than-human flesh. The snakes and bees are more like stinging tentacular feelers than like binocular eyes, although these critters see too, in compound-eyed insectile and many-armed optics.

In many incarnations around the world, the winged bee goddesses are very old, and they are much needed now.³⁷ Potnia Theron/Melissa's snaky locks and Gorgon face tangle her with a diverse kinship of chthonic earthly forces that travel richly in space and time. The Greek word *Gorgon* translates as dreadful, but perhaps that is an astralized, patriarchal hearing of much more awful stories and enactments of generation, destruction, and tenacious, ongoing terran finitude. Potnia Theron/Melissa/Medusa give faciality a profound makeover, and that is a blow to modern humanist (including technohumanist) figurations of the forward-looking, sky-gazing Anthropos. Recall that the Greek *chthonios* means "of, in, or under the Earth and the seas"—a rich terran muddle for SF, science fact, science fiction, speculative feminism, and speculative fabulation. The chthonic ones are precisely not sky gods, not a foundation for the Olympiad, not friends to the Anthropocene or Capitalocene, and definitely not finished. The Earthbound can take heart—as well as action.

The Gorgons are powerful winged chthonic entities without a proper genealogy; their reach is lateral and tentacular; they have no settled lineage and no reliable kind (genre, gender), although they are figured and storied as female. In old versions, the Gorgons twine with the Erinyes (Furies), chthonic

underworld powers who avenge crimes against the natural order. In the winged domains, the bird-bodied Harpies carry out these vital functions.³⁸ Now, look again at the birds of Potnia Theron and ask what they do. Are the Harpies their cousins? Around 700 BCE Hesiod imagined the Gorgons as sea demons and gave them sea deities for parents. I read Hesiod's *Theogony* as laboring to stabilize a very bumptious queer family. The Gorgons erupt more than emerge; they are intrusive in a sense akin to what Stengers understands by Gaia.

The Gorgons turned men who looked into their living, venomous, snake-encrusted faces into stone. I wonder what might have happened if those men had known how to politely greet the dreadful chthonic ones. I wonder if such manners can still be learned, if there is time to learn now, or if the stratigraphy of the rocks will only register the ends and end of a stony Anthropos.³⁹

Because the deities of the Olympiad identified her as a particularly dangerous enemy to the sky gods' succession and authority, mortal Medusa is especially interesting for my efforts to propose the Chthulucene as one of the big-enough stories in the netbag for staying with the trouble of our ongoing epoch. I resignify and twist the stories, but no more than the Greeks themselves constantly did.⁴⁰ The hero Perseus was dispatched to kill Medusa; and with the help of Athena, head-born favorite daughter of Zeus, he cut off the Gorgon's head and gave it to his accomplice, this virgin goddess of wisdom and war. Putting Medusa's severed head face-forward on her shield, the Aegis, Athena, as usual, played traitor to the Earthbound; we expect no better from motherless mind children. But great good came of this murder-for-hire, for from Medusa's dead body came the winged horse Pegasus. Feminists have a special friendship with horses. Who says these stories do not still move us materially?⁴¹ And from the blood dripping from Medusa's severed head came the rocky corals of the western seas, remembered today in the taxonomic names of the Gorgonians, the coral-like sea fans and sea whips, composed in symbioses of tentacular animal cnidarians and photosynthetic algal-like beings called zooanthellae.⁴²

With the corals, we turn definitively away from heady facial representations, no matter how snaky. Even Potnia Theron, Potnia Melissa, and Medusa cannot alone spin out the needed tentacularities. In the tasks of thinking, figuring, and storytelling, the spider of my first pages, *Pimosa chthulhu*, allies with the decidedly nonvertebrate critters of the seas. Corals align with octopuses, squids, and cuttlefish. Octopuses are called spiders of the seas, not only for their tentacularity, but also for their predatory habits. The tentacular chthonic ones have to eat; they are at table, *cum panis*, companion species of terra. They are good figures for the luring, beckoning, gorgeous, finite, dangerous precarities of the Chthulucene. This Chthulucene is neither sacred nor secular; this earthly worlding is thoroughly terran, muddled, and mortal—and at stake now.

Mobile, many-armed predators, pulsating through and over the coral reefs, octopuses are called spiders of the sea. And so *Pimosa chthulhu* and *Octopus cyanea* meet in the webbed tales of the Chthulucene.⁴³

All of these stories are a lure to proposing the Chthulucene as a needed third story, a third netbag for collecting up what is crucial for ongoing, for staying with the trouble.⁴⁴ The chthonic ones are not confined to a vanished past. They are a buzzing, stinging, sucking swarm now, and human beings are not in a separate compost pile. We are humus, not Homo, not anthropos; we are compost, not posthuman. As a suffix, the word *kainos*, “-cene,” signals new, recently made, fresh epochs of the thick present. To renew the biodiverse powers of terra is the sympoietic work and play of the Chthulucene. Specifically, unlike either the Anthropocene or the Capitalocene, the Chthulucene is made up of ongoing multispecies stories and practices of becoming-with in times that remain at stake, in precarious times, in which the world is not finished and the sky has not fallen—yet. We are at stake to each other. Unlike the dominant dramas of Anthropocene and Capitalocene discourse, human beings are not the only important actors in the Chthulucene, with all other beings able simply to react. The order is reknitted: human beings are with and of the Earth, and the biotic and abiotic powers of this Earth are

the main story.

However, the doings of situated, actual human beings matter. It matters with which ways of living and dying we cast our lot rather than others. It matters not just to human beings, but also to those many critters across taxa which and whom we have subjected to exterminations, extinctions, genocides, and prospects of futurelessness. Like it or not, we are in the string figure game of caring for and with precarious worldings made terribly more precarious by fossil-burning man making new fossils as rapidly as possible in orgies of the Anthropocene and Capitalocene. Diverse human and nonhuman players are necessary in every fiber of the tissues of the urgently needed Chthulucene story. The chief actors are not restricted to the too-big players in the too-big stories of Capitalism and the Anthropos, both of which invite odd apocalyptic panics and even odder disengaged denunciations rather than attentive practices of thought, love, rage, and care.

Both the Anthropocene and the Capitalocene lend themselves too readily to cynicism, defeatism, and self-certain and self-fulfilling predictions, like the "game over, too late" discourse I hear all around me these days, in both expert and popular discourses, in which both technothocratic geoengineering fixes and wallowing in despair seem to coinfect any possible common imagination. Encountering the sheer not-us, more-than-human worlding of the coral reefs, with their requirements for ongoing living and dying of their myriad critters, is also to encounter the knowledge that at least 250 million human beings today depend directly on the ongoing integrity of these holobiomes for their own ongoing living and dying well. Diverse corals and diverse people and peoples are at stake to and with each other. Flourishing will be cultivated as a multispecies response-ability without the arrogance of the sky gods and their minions, or else biodiverse terra will flip out into something very slimy, like any overstressed complex adaptive system at the end of its abilities to absorb insult after insult.

Corals helped bring the Earthbound into consciousness of the Anthropocene

in the first place. From the start, uses of the term *Anthropocene* emphasized human-induced warming and acidification of the oceans from fossil-fuel-generated CO₂ emissions. Warming and acidification are known stressors that sicken and bleach coral reefs, killing the photosynthesizing zooanthellae and so ultimately their cnidarian symbionts and all of the other critters belonging to myriad taxa whose worlding depends on intact reef systems. Corals of the seas and lichens of the land also bring us into consciousness of the Capitalocene, in which deep-sea mining and drilling in oceans and fracking and pipeline construction across delicate lichen-covered northern landscapes are fundamental to accelerating nationalist, transnationalist, and corporate unworlding.

But coral and lichen symbionts also bring us richly into the storied tissues of the thickly present Chthulucene, where it remains possible—just barely—to play a much better SF game, in nonarrogant collaboration with all those in the muddle. We are all lichens; so we can be scraped off the rocks by the Furies, who still erupt to avenge crimes against the Earth. Alternatively, we can join in the metabolic transformations between and among rocks and critters for living and dying well. “‘Do you realize,’ the phytolinguist will say to the aesthetic critic, ‘that [once upon a time] they couldn’t even read Eggplant?’ And they will smile at our ignorance, as they pick up their rucksacks and hike on up to read the newly deciphered lyrics of the lichen on the north face of Pike’s Peak.’”⁴⁵ Attending to these ongoing matters returns me to the question that began this text. What happens when human exceptionalism and the utilitarian individualism of classical political economics become unthinkable in the best sciences across the disciplines and interdisciplines? Seriously unthinkable: not available to think with. Why is it that the epochal name of the Anthropos imposed itself at just the time when understandings and knowledge practices about and within symbiogenesis and sym-poietics are wildly and wonderfully available and generative in all the humusities, including noncolonizing arts, sciences, and politics? What if the doleful doings of the Anthropocene and the unworldings of the Capitalocene are the last gasps of the sky gods, not guarantors of the finished future, game over? It matters which thoughts think

thoughts.

We must think!

The unfinished Chthulucene must collect up the trash of the Anthropocene, the exterminism of the Capitalocene, and chipping and shredding and layering like a mad gardener, make a much hotter compost pile for still possible pasts, presents, and futures.

x

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