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QUAE NATURA CADUCA EST:
CICERO AND LUCRETIVS ON ECOLOGICAL CHANGE

As a metaphor for development in and among species, imagery of descent long predates Darwin¹. In the Latin ecological imagination, one iteration of this metaphor comes from a simple observation about the reproductive cycle of many, especially fruit- or nut-bearing plants: their seeds seem, spontaneously, to fall.

This observation, as an entry in the Justinian Digest suggests, is the origin of the word, *caducus*, a richly polysemic adjective derived from *cadere*, “to fall”. In legal contexts, this word refers to property that has been left escheatable either because it was not included explicitly in a will or because its owner died without a lawful heir². Roman agricultural writing demonstrates further this word’s conceptual binding of biological propagation with socio-economic determinations of inheritance or ownership: Cato repeatedly advocates for stronger regulations controlling the collection and sale of windfall fruits, especially olives (*olea caduca*, *agr.* 64). Varro recommends that farmers graze their sheep in wheat fields just after harvest, so they eat up any “fallen heads” (*caduca spica*, *rust.* 2, 2, 12) and, at the same time, manure for the next planting season. And Columella, similarly, encourages even wealthy suburban farmers to feed their young pigs with the «castoff fruits of legumes» (*leguminum caducis fructibus*, 7, 9, 4) to increase their stock value. In each of these practically minded accounts, the spontaneous tendency of fruits to fall

¹ On Darwin’s choice of title, see his correspondence with Alfred Russel Wallace, discussed by Schwartz 1984. I am interested in defamiliarizing this metaphor, but there is, of course, an overwhelming amount of work in a variety of disciplines on biological and social genealogy on the one hand, and the application of fallenness to sin and the human condition, esp. in the Judeo-Christian tradition, on the other. See, e.g., for a recent debate on inheritance in American studies, Morgan 2021 with Laqueur 2023; and, e.g., for interest in the spiritual resonance of Marxian alienation, see Chakrabarti et al. 2020.

² *Dig.* 50, 16, 30, “*Glans caduca*” est, *quae ex arbore cecidit*. This definition comes from the list of legal terms in the final book of the digest, quoted from the 2nd century jurist Gaius and is preceded immediately by terminology relating to inheritance and property rights. For the legal application see *dig.* 5, 3, 20 and *Ulp. reg.* 17 with, e.g., *Cic. Phil.* 10, 11.



presents itself as a problem of surplus in relation to agricultural labor and human ownership of nature. By recapturing this surplus through multi-use practices and contract law, these writers seek to contain the reproductive potential of plants within the farmer's framework of capital and profit. They aim to convert what is escheatable in nature into a transferable investment for the *dominus villae*.

This aim may be unsurprising given the audience for and function of Roman agricultural writing³. But, as I examine in this article, a practical, profit-oriented engagement with vegetal descent by no means exhausts its significance for Roman thought. In Lucretius and Cicero's philosophical writing about nature, in fact, this system of recapture is undone. Instead, these authors apply the same metaphoric network to a broader ecology of change through which they explore possibilities of survival, extension, and transformation beyond oneself and one's own properties⁴.

In the first section below, I begin from the descent that Cicero and Lucretius associate with the development of life over time. I term this an "ecological change" because these Roman thinkers demonstrate a deep inter-relationship between humans as agents who shape the natural world especially through agriculture and the more-than-human forces that limit and transform these actions in turn⁵. Beyond this broad commonality, however, significant differences arise, particularly around ideas about fertility and the future. As I examine in the second section, throughout Lucretius' *De rerum natura*⁶, the fallenness of agriculture correlates with the biological necessity of sexual reproduction and a tendency toward patrilineal inheritance. Such constraints limit the kinds of change that can occur and lead, over time, to a decline in intraspecies fertility, with no chance for hybridization or even non-antagonistic relationships between species. In the third section, I turn to Cicero's writing about agriculture both in *De senectute* and *De finibus*. The speakers in these texts, by contrast to *De rerum natura*, conceive of fallenness as a condition that is shared between both plant and farmer, which can be

³ See, e.g., Reay 2005 for audience and Jakab 2015 or Brown 2019 for function.

⁴ As I am particularly interested in reading these texts as examples of Roman thought, I engage only minimally with Greek predecessors on the topic, although this would also prove fruitful.

⁵ Cf. Hughes 1975 for ecology in Greek thought and, more generally, e.g., Morton 2012; Haraway 2015.

⁶ Text of *De rerum natura* cited throughout is Rouse and Smith 1992 except where specified; *De senectute* is Powell 1988; and *De finibus* is Madvig 1877.

traversed through their independent co-agency and a form of interspecies fertility that, drawing on my previous work on these texts, I call “feralization”⁷. These contrasting positions not only describe how the horizons of ecological possibility appeared to these two ancient thinkers, they also may inform a view into a world beyond our own depleted ecosystems and endangered fertilities. Consequently, in a short coda, I propose a relationship between the depictions of ecological change within Lucretius and Cicero’s texts and the future horizon of the texts themselves.

1. *The Descent of Man and/as Fruit*

For Lucretius, then, the observation of spontaneously falling seeds in vegetal reproduction is tied closely to the origins of agriculture and helps to explain the current state of ecological development across species. Where he differs from Cato, Varro, and Columella is that his text does not (primarily) seek profit from this status quo, but rather treats it as visible evidence of a history of change in the relationship between the human and the more-than-human.

The narrative structure of the “anthropogony” in book five of *De rerum natura* is distilled from a timescale of hundreds of generations⁸. When the earth itself was young, the human species made its livelihood «by wandering in the manner of wild beasts» (932, *volgivago* [...] *more ferarum*). The «strong master of the curved plow» (*robustus* [...] *curvi moderator aratri*) did not yet have the knowledge of iron (*ferrum*) with which «to dig down and bury young shoots in the earth» (933-934, *nova defodere in terram virgulta*). Instead, early humans were satisfied with «whatever the earth provided of its own accord» (*sponte sua*), which means that «in general they sustained their bodies amidst the acorn-bearing oaks» (*glandiferas inter quercus*)⁹. Far from a Hesiodic golden age of plenty, Lucretius’ primordial larder is hard tack gathered from a hard world fit only for the hard bodies of the *primum genus*¹⁰.

⁷ See Matlock 2024.

⁸ This nomenclature for the central narrative of *De rerum natura* 5 comes from Holmes 2014. Others, like Farrell 1994, prefer “anthropology”. For an introduction to this passage in light of the Epicurean tradition on the origin of species, see Campbell 2003, 1-18.

⁹ Lucr. 5, 937-940, *quod terra crearat / sponte sua, satis id placabat pectora donum. / glandiferas inter curabant corpora quercus / plerumque*.

¹⁰ Cf. Hes. *erg.* 109-126, where the earth is already “grain-giving”, but without the labor of agriculture. Closer to Lucretius’ milieu, Cicero’s *Aratea* likely treated this theme,

After the discovery first of fire and then of iron, however, the human manner of living starts to conform with what might be expected from a Greco-Roman perspective¹¹. Economic exchange with precious metals develops, as do the traditions of warfare, architecture and crafts, and, finally, animal husbandry and agriculture itself. In keeping with the dynamics of Lucretius' accretive narrative, the practices of agriculture are not an imposition, wholly devised by human ingenuity. Rather, they are conceived as an imitation and extension from within of the spontaneous processes that the primordial species had participated in during their wandering days (Lucr. 5, 1361-1369):

at specimen sationis et insitionis origo
 ipsa fuit rerum primum natura creatrix,
 arboribus quoniam bacae glandesque caducae
 tempestiva dabant pullorum examina supter;
 unde etiam libitumst stirpis committere ramis 1365
 et nova defodere in terram virgulta per agros.
 inde aliam atque aliam culturam dulcis agelli
 temptabant, fructusque feros mansuescere terram¹²
 cernebant indulgendo blandeque colendo.

Nature herself provided the model for planting and the source of engrafting, since the berries and acorns fallen from the trees would, in time, send up swarms of seedlings. From this same source came that desire to entrust grafts to branches and to bury young slips into the earth throughout the fields. And, from that time on, they would try one new form of cultivation after another on their pleasing little plots, observing how the earth would temper wild fruits by their attention and soothing care¹³.

although it is difficult to say with what valence; see Landolfi 1990. On this piece of Ciceronian juvenilia as a source for Lucretius generally, see, with Leonard-Smith 1942, *ad loc.*, e.g., Lucr. 1, 984; 4, 138; and 4, 171. For the hardness shared between early humans and their food, see esp. 944, *pabula dura tulit, miseris mortalibus ampla*, with Holmes 2014, 147-150.

¹¹ It is notably difficult to place the present in Lucretius' poem; see Volk 2010 and, cf. on the question of the text's political (un)situatedness, Fowler 1989 and McConnell 2012, or on the issue of Lucretius' anachronistic relationship to his philosophical idol, e.g., Sedley 1998, 62-93.

¹² This is Lachmann's suggestion for the "awkward and otiose" manuscript reading, *terra*, which is printed by Rouse and Smith 1992; see Bailey 1966 *ad loc.* To me, taking *terram* as the subject of *mansuescere* makes better sense of the complex agency that the passage describes; see Leonard-Smith 1942, *ad loc.* and below.

¹³ Translations from Latin into English throughout are my own.

Natura, by showing the spontaneous falling of the berries and acorns (*bacae glandesque caducae*), serves as the model (*specimen*) and source (*origo*) for the practices of human agriculture. Yet, even in this mode of imitation, the development fundamentally alters the relationship between earth and human species. Before, the primordial species lived according to an aleatoric dependency on «whatever the earth provided of its own accord» (*sponte sua*)¹⁴ in the cycles of yearly seasonality or regional conditions. But now, agricultural man's sense of time is tied to the «timely maturation» (*tempeſtiva*) of its crop of seedlings. With this shift in sequence or rhythm, the nature of the dependency between humans and plants also changes: the future of the human *genus* comes to be tied to the «swarms of saplings» (*pullorum examina*) that promise, in turn, another fruitful harvest.

Corresponding to this shift in temporality comes a spatial transformation. In their wandering or rolling (*volgivago*) across the pre-agricultural terrain, early humans looked for sustenance «in between» or «amidst the acorn-bearing oaks» (*glandiferas inter quercus*). As humans begin to observe the acorns' descent, however, this horizontal *interposition* gives way to a vertical relation «to the base of» or «below» (*supter*) the trees where the next crop of seedlings take root. The downward orientation of humanity's post-agricultural attention is pervasive: it is also from the falling motion of the acorns and berries that the desire to graft arises (*unde [...] libitumst*); and, while pre-agricultural humans did not know how to bury slips or «dig down into the earth» (*defodere in terram*, cf. 934 and 1366), the farmers extend their new knowledge of the vertical axis into the subterranean, sowing young, or strange and unknown (*nova*) crops beneath the topsoil¹⁵. As each cycle repeats, and the dependency of *genus humanum* and *terra* deepens, slowly the young slips become something else – something never seen before and forged directly by the shifting relations that created them.

These structural, behavioral shifts participate in an irreversible change in the mutual development of plant- and human-life. Previously, the hardness of the food available to humans was reflected in their own hardness. No longer living «in the manner of the wild beasts» (*more fe-*

¹⁴ On this Lucretian tag in its application to the spontaneity of vegetal nature, see Johnson 2013.

¹⁵ On the slippage in meaning of the adjective, *nova*, cf. the repeated phrase *novitas mundi*, e.g., 5, 780; 818; 943.

rarum), however, agricultural humans have discovered through experimentation that they can alter, bit by bit, the nature of wildness itself, «observing how the earth would temper wild fruits (*fructus feros*) by their attention and soothing care». Through the practices of cultivation, humans not only leave behind their beastly hardness, but they cause the earth to generate for herself fruits that are always a little less harsh, a little less wild.

I will return to this idea of beastliness or wildness (*ferarum, feros*), but it is important to emphasize now before turning to Cicero the doubling of agency in this final line: the wildness of fruits becomes tempered (*mansuescere*) not only through the actions of human farmers (*indulgento blandeque colendo*), but also through the processes of the earth herself (*terram*). The fallenness ascribed to agriculture by Lucretius is a change that is truly, systemically ecological. It is not an *unnatural* perversion attributable exclusively to human agency. Rather it is a thoroughly *natural* (*i.e.*, constitutive) extension of pre-existing relationships among species and, specifically, an imitation that synchronizes and spatially deepens the dependency of both plants and humans on the reproductive model of falling seeds. Yet there is nothing more essential or definitive in this new relationship than there was in the old. Instead, the changes reveal their own mutual contingency and liability to fall.

Where Lucretius treats the metaphor of descent as part of a developmental narrative spanning generations, Cicero focuses in on “the fall” as an analogous moment in the life of any individual plant or human. This use is introduced at the very beginning of Cato’s speech in *De senectute*, where he urges his younger interlocutors, Scipio and Laelius, not to be too amazed by the wisdom they think he shows in bearing his old age¹⁶. He instructs them instead to think about life as a pre-determined sequence, which must always, by definition and in experience, come to an end. If he shows wisdom in anything, he claims, it is this:

Quod naturam, optimam ducem, tamquam deum sequimur eique paremus. a qua non veri simile est, cum ceterae partes aetatis bene descriptae sint, extremum actum tamquam ab inerti poeta esse neglectum; sed tamen

¹⁶ One of the perennial questions about this dialogue is the relationship between its characterization of Cato and the historical Cato; see, *e.g.*, Rawson 1972; Craig 1986; van der Blom 2010; Bishop 2019, 264-267. While this point lies outside the purview of this article, I see my analysis contributing to an appreciation of the great liberties that Cicero takes in characterization and even the stark differences that separate these textual figures.

necesse fuit esse aliquid extremum, et tamquam in arborum bacis terraeque fructibus, maturitate tempestiva quasi vietum et caducum; quod ferundum est molliter sapienti (Cic. *Cato* 5).

I follow nature as the best leader and obey her as if she were a god. And is it likely, since the other parts of life have been well written by her, that the final act would have been forgotten as if by a lazy poet? Even still, there had to be something final and, just like among the fruits of the trees and the crops of the earth, in the fullness of time, something, as it were, shrivelled and prone to fall, which a wise man must bear gently.

The association of human old age with the overripening of a fruit is prefigured by a more familiar image that compares the stages of life to the acts of a play, which nature has written well (*descriptae bene*) – she is not, Cato judges, a lazy poet (*inerti poeta*)¹⁷. This overdetermination brings out a primary application for the metaphor that differs from Lucretius’ use: whereas, for Lucretius, the *baecae glandesque caducae* form only part of a necessarily intergenerational process of development, for Cicero, the moment of descent is suspended in time – life’s final curtain is just beginning to fall – and any promised new beginning has not yet been realized. This more final sense of descent is reinforced in Cicero’s frequent use of *caducus* in other, non-agricultural contexts, where he applies it either in its technical, legal sense or, more often by extension, to describe objects or ideas that are precariously fragile and perishable¹⁸. In Cicero’s dominant interpretation of the metaphor, therefore, *caducus* describes a moment in time that *cannot* be “passed on”, an experience of finality that must, by definition, come to its own end and possesses no future in its own right.

Yet this experience of finality may yet prove to be only a starting point. The «timely maturation» (*tempestiva*) that, for Lucretius, defines agricultural man’s temporal dependence on the new growth of vegetal life is present in the “ripening” that Cato’s fruit and old man pass through together (*maturitate tempestiva*). Furthermore, if the depictions

¹⁷ For the theatrical metaphor, see Kokolakis 1960. Cato returns to the theme with an anecdote about Sophocles at *Cato* 22 and elsewhere, e.g., 48 and 85. For the heavy reliance on metaphor in *De senectute*, see Sjöblad 2009.

¹⁸ Cicero often collocates this adjective with, e.g., *mobilis* (*dom.* 146; *Phil.* 4, 13), *incertus* or *fragilis* (*Phil.* 4, 13; *leg.* 1, 24; *fin.* 2, 86; *Lael.* 102), and, esp., *mortalis* (*orat.* 101; *rep.* 6, 17; *leg.* 1, 61; *Tusc.* 1, 62; *nat. deor.* 1, 98). The word also contrasts ideas or things that are permanent or lasting, viz. *virtus* or *quod est divinum, aeternum*, etc. (*dom.* 146; *Lael.* 20; *fam.* 10, 12).

of *natura* in Lucretius' Epicurean poem and Cato's Peripatetic- and Stoic-influenced speech differ in other ways, broadly speaking, she is frequently personified and always given priority as a guide (*dux*) or model (*specimen*)¹⁹. In particular, Cato describes being wise (*sapiens*) as an ability both to follow nature and to apply a placid or gentle (*molliter*) touch when confronting the difficulties of old age. From the perspective of the Lucretian narrative, therefore, Cato's understanding of wisdom is itself agricultural, descending through the softening (*mansuescere*) of the primordial species by means of the observation and imitation of nature. In Cato's more synchronic view, the human and vegetal already exist in the same condition – on the same “stage” – of mutual development of which Lucretius depicts the origins. It is not that the old man, like Lucretius' *genus agrorum*, starts to imitate the fruits by growing older. Rather, because the processes of fruit ripening and human aging are *a posteriori* analogous, he becomes old in the same manner as he observes the falling of the *bacae*. The descent of man in Lucretius' poem takes place alongside and in conjunction with the descent of vegetal life; for Cicero's Cato, man himself descends *because* he is like «the fruits of the trees and the crops of the earth».

If what binds together human and plant life is the very moment of finality, the question becomes, simply, where can we go from here? What, if anything, comes after the fall? Cato addresses this question in his discussion of farming as a source of pleasure (*voluptas*)²⁰. In Cato's argument, which considers and rejects several common «criticisms of old age» (*vituperationes senectutis*), this agricultural enjoyment is summoned as antidote or alternative to an elderly man's loss of sexual potency – a particular concern for the all-male participants of the dialogue²¹. Yet Cato also insists that what he, as an old man, enjoys are not simply the

¹⁹ On Lucretius' use of the Epicurean language of nature, see esp. Johnson 2013 and Taylor 2020, 15-42. Cicero's philosophical influences in *De senectute* are provocatively catholic, as they are for the passages from Piso's speech in *De finibus* 5 discussed below; for a general overview, see Striker 1995 and for *De senectute* specifically see Powell 1988, 12-16. For the figuration of *natura* in Hellenistic thought more generally, see, e.g., Schofield-Striker 1986; Inwood 2016.

²⁰ This central portion of the speech is problematic for those looking for continuity with the historical Cato. See, e.g., Powell 1988, *ad loc.*: «It was not unnatural to make Cato the Elder thus speak in praise of an occupation which he clearly held in high esteem [...] but the content and style is Cicero's own». On Cicero's discussion of *voluptas* more broadly, see esp. Lotito 1981.

²¹ Loss of bodily pleasure is the third and lengthiest *vituperatio senectutis* that Cato rejects, see *Cato* 7 and 39-50.

fructus – the harvests or rewards, in whose surplus value, as we saw, the historical Cato and other agriculture writers are most immediately invested²². Rather Cicero's Cato finds *voluptas* in witnessing and interacting with the «the power and nature of earth herself» (*etiam ipsius terrae vis ac natura delectat*, 51). To illustrate this turn of eroticized attention, Cato embarks on a sensuous description of growth from seed, which further emphasizes how agricultural activity sublimes human sexuality: the earth receives the scattered seed into its «womb» only after it has been «softened and conquered» (*gremio mollito ac subacto*) and, after seeding, the sprouting plant passes through phases that mirror humans' sexual maturation (*adulescit [...] quasi pubescens*)²³.

After this description of the reproductive cycle of grain, however, Cato turns to a different crop – the grapevine – to discuss the interaction between nature's power and the elderly man's failing energies²⁴. He describes lavishly the spacing and staking, grafting and splicing, tying off and pruning that viticulture requires, culminating in an image that entwines human and plant:

Vitis quidem quae natura caduca est, et nisi fula est fertur ad terram, eadem ut se erigat claviculis suis quasi manibus quidquid est nacta compectitur; quam serpentem multiplici lapsu et erratico, ferro amputans coercet ars agricolarum, ne silvescat sarmentis et in omnes partes nimia fundatur (Cic. *Cato* 52).

The vine, which by nature is prone to fall and, unless it is propped up, is carried to the earth, will raise itself by its hand-like tendrils and embrace whatever supports it has. And, as it is twining its way with its meandering and twisting course, the skill of the farmers, by trimming it with a knife, will check it so that its shoots do not run to wood, and it does not spread out all its parts too far.

²² Cicero's Cato introduces this discussion with another metaphorical overdetermination, comparing the earth to a banker «who never refuses an outlay, nor does she ever return a deposit without interest accrued, at a rate that is sometimes less, but usually more» (51, *quae numquam recusat impendium, nec umquam sine usura reddit quod accepit, sed alias minore, plerumque maiore cum fenore*). This comparison unsettles the historical Cato's moral hierarchy of money-making ventures, in which farming is opposed categorically to moneylending (*agr. 1, fenerari*).

²³ Cato's poetic analogies between plant and human reproduction are treated as a clinical reality in the Hippocratic *Peri physios paidiou*, esp. 22; cf. Powell 1988, *ad loc.*

²⁴ Discussion of viticulture runs *Cato* 52-53; cf. Cato, *agr.* 32-33 and 114-115.

Cato's vine exists "by nature" in the same unpassable condition as the elderly man who tends it (*vitis* [...] *natura caduca*). In this reiteration of the metaphor, *caducus* is applied not to the falling of the vine's fruits, but with even more immediacy to the physicality of the creepers themselves²⁵. As often in ancient discussions of agriculture, especially those of a post-Theophrastean sensibility, Cato conceives of human action as a corrective or supplement to an aspect of the plant's spontaneous behavior²⁶. The vine's tendency to "run to wood" and "spread out its parts too far" horizontally impedes its ability to extend itself upward, and so the vinedresser's actions are thought of as necessary to ensure its present health and future propagation, at least according to agriculture's vertical alignment. This paternalistic concern for vegetal life takes on a cast of disciplinary violence under the vinedresser's *ferrum*, the pruning knife made from iron – the human discovery of which immediately precedes the origin of agriculture in Lucretius' narrative.

At first glance, then, Cato seems to present this relationship between vine and its caretaker as a mutualism in which they can both overcome their shared condition of being "prone to fall". Indeed, in his poetic description, Cato transforms the elderly farmer's mundane practices of staking and pruning into an almost fantastical ability to harness the earth's *vis* as an extension of his own failing energies. By receiving the care of the farmer, the vine has also become the bearer of his attention, skill, and intent. Along this line, and in keeping with the sexual sublimation in Cato's speech, we can think about vinedresser and vine as surrogates for father and son. But, at this point, we should not let ourselves be carried away too far by Cato's paternal fantasy. Despite the vine's new orientation upward and toward the future, the dialogue's perspective remains rooted in the present of the *senex*. The vinedresser's actions may be aimed beyond himself, but the pleasure – Cato's ultimate purpose – and, particularly, his fetishization of agricultural activities is derived here and now by lingering in the fallenness of old age.

²⁵ The inspiration for this image may come from Cato's dry warning, «Let the vines be tied up well; throughout all the vine's branches take earnest care that they do not fall headlong and that you do not tie them too tight» (*agr.* 32, *vites bene nodentur; per omnes ramos diligenter caveto ne vitem praecipites et ne nimium praestringas*).

²⁶ On "plant punishment," see, e.g., Theoph. *hist. plant.* 2, 7, 6-7, with Michelini 1978.

2. *The Fertility of the Past in De rerum natura*

Both Lucretius and Cicero use an image of descent generally, and the adjective *caducus* specifically, to explore ecological change, particularly in the post-agricultural relationship between humans and plants. But we have also begun to note some differences in the way that these thinkers deploy the metaphor. For Lucretius, as fallenness occurs first in the vegetal world, then is replicated in the human, it serves as a driver of the diachronic trajectory from early forms of life to the present. Cicero's Cato, on the other hand, presents a synchronic view of the role that fallenness plays in individualized experience, thereby describing a condition of dependency that binds human and plant together in the final moments of life. In the following two sections, I pursue the implications of these differences into other areas of these authors' ecological thinking, especially about fertility and the future.

As I argue in this section, in *De rerum natura*, fallenness is a starting point from which to tell a global history of eco-fertility that contains its own internal limits. This history passes from the parthenogenesis of the early earth to the patrilineal reproduction of its recent past and, finally, to a sterility that awaits in the not-too-distant future. By contrast, moving in the next section back to Cicero's *De senectute* and a related passage from Piso's speech in *De finibus* 5, I contend that the shared fallenness of caretaker and vine holds the promise of future life that looks very different, and is unknowable fully from the present. By attributing agency to plants in shaping this future, Cicero's dialogues suggest a path for fertility through feralization that is impossible from Lucretius' perspective²⁷.

Lucretius introduces *prima facie* a decline in fertility in his depiction of Mother Earth. *De rerum natura*, as Georgia Nugent argues, pushes this ancient trope to fanciful extremes by describing cosmogony as the hypostasis of a woman's reproductive lifecycle: «Lucretius' [...] mother earth is so copiously fertile that her youth included episodes of spontaneous generation – beings simply sprang into existence from the fecundity of the earth [...]. This possibility, however, no longer obtains. Such unregulated fecundity [...] is now relegated to the past»²⁸. Passing from

²⁷ For recent interest in the relationship between Cicero's and Lucretius' lexica and theorization of *natura*, see, e.g., Auvray-Assayas 2003; Camardese 2010, esp. 70-74; and Taylor 2020, 100 *et passim*.

²⁸ Nugent 1994, 183-184.

the impossible fertility of premenarcheal *terra* to her postmenopausal sterility thus follows a linear trajectory which, as Diskin Clay pointedly notes, «even as it is introduced [...] reduce[s Mother Earth] to matter»²⁹. What holds in between these extremes is a need for earth's creatures to reproduce for themselves. Yet, as Lucretius frequently reminds us, every act of procreation is also, in an absolute sense, «in vain» (*nequiquam*)³⁰. As a foregone conclusion of earth's gynomorphism, the future fertility for any terrestrial species is by no means guaranteed and, in fact, will be subject to mounting environmental pressures as the earth herself becomes sterile.

Terrestrial fertility declines, therefore, not only in the earth's stages of maturation but also through the adaptive means by which individual creatures secure the intergenerational survival of their own kind. In the parthenogenic phase of earthly life, there is little to no distinction between the various «mortal generations» (5, 791, *mortalia saecla*). Even if some live in the air or water, all grow from «wombs adjoined to the roots of the earth» (808, *uteri terram radicibus apti*) and are sustained equally by a milk-like substance that the earth emits from breast-like apertures (811, *foramina*)³¹. The only necessity of life that Lucretius envisions at this earliest phase is a vivacity that matches the copious fecundity of the young earth: all alike go «frolicking» here and there over majestic mountains (824, *in magnis bacchatur montibus passim*).

Yet the very exuberance of this earliest fertility also forms its own limit. Amidst plentifully shared resources, the earth begins to produce and sustain an overwhelming diversity of forms of life. These include not only creatures that will become recognizable as birds and beasts, but also many that Lucretius calls «wonders» (837, *portenta*) or «freaks» (845, *monstra*), such as the *androgynae* (839), or beings without feet, hands, mouths or faces – some even without articulation in their limbs who possess neither movement nor defense (840-844)³². As this variety

²⁹ Clay 1983, 229; Nugent 1994, 183.

³⁰ See 5, 846; for the turn of phrase *nequiquam quoniam*, a poetic tic in books 4 and especially 5, cf. 2, 1148; 4, 464, 1110, 1133, 1188; 5, 388, 1123, 1231, 1271, 1313, 1332.

³¹ A Catonian word, see *agr.* 19.

³² For previous philosophical discussions of such *monstra*, see esp. Empedocles, fr. DK 57-61 and Plato, *Smp.* 189d-e. I take Lucretius' centering of cisgender, ableist reproduction not as a value claim but as a description of process. By labeling intersex and physio-divergent bodies, which existed in antiquity as they do today, as «freaks» and relegating them to die in a mythical past, Lucretius is not expressing a preference, but

of life multiplies, their shared reliance on the fertility of the earth loses its efficacy, and it soon becomes clear that the only forms of life who will continue to survive are those that can procreate sexually³³. As of this moment, the conditions of intergenerational survival narrow to require not only food and energy, but a specific physiology that allows for sexual propagation: «passages whereby the life-giving seed can flow through the limbs during arousal, in order that woman may be joined with man, and they may share together a mutual satisfaction»³⁴.

The necessity of sexual reproduction introduces speciation into Lucretian biology. In a long digression, Lucretius argues that although these now-dead *portenta* really had existed in the past, there are some creatures – especially the hybrid monsters of myth like centaurs, chimeras, or Scylla – that could *never* have existed³⁵. Prespeciated, earth-born creatures were able to take certain hybrid or “monstrous” forms because they did not, necessarily, pass through stages of development and never needed to reach sexual maturity. But the different timescales of maturation in horses and humans, or dogs and fish, or lions and goats make it impossible to breed them together³⁶. Once these species are differentiated by sexual reproduction, their hybridization becomes an absolute impossibility. Indeed, their mutual isolation comes to define a new «pact of Nature» (*foedus naturae*) in which «each proceeds in its own manner and all must preserve their own distinctions»³⁷.

As animals start to speciate through sexual reproduction, their survival strategies also diversify. The major division that Lucretius discusses throughout the poem separates those animals which he refers to as «wild beasts» (*ferae*) from those which live and reproduce under the care

rather emphasizing the homogenizing tendency of patrilineal reproduction. My thanks to Elijah Peacock for his raising of this question.

³³ Lucretius conceives of this as an extinction event: «Nature [...] did not allow [these *portenta*] to touch the flower of generation nor to find food nor to be joined in the work of Venus [...] and so it was necessary for many generations of living things to perish, nor did they have the power to create offspring by sexual propagation» (5, 846-857, *natura absterruit auctum, / nec potuere cupitum aetatis tangere florem / nec reperire cibum nec iungi per Veneris res [...] multaque tum interiisse animantum saecla necessest / nec potuisse propagando procudere prolem*).

³⁴ Lucr. 5, 851-854, *genitalia deinde per artus / semina qua possint membris manare remissis; / feminaque ut maribus coniungi possit, habere, / mutua qui mutent inter se gaudia uterque*.

³⁵ See fully 5, 878-924 with Holmes 2014, 146.

³⁶ See esp. 5, 916-919.

³⁷ Lucr. 5, 923-924, *sed res quaeque suo ritu procedit, et omnes / foedere naturae certo discrimina servat*. On this passage, see esp. Asmis 2008.

of humans³⁸. It is a particularly Lucretian irony that the earliest humans lived «in the manner of wild beasts» (*more ferarum*) – those animals that will continue to resist domestication.

This irony points to the anthropological consequences of the biological shift to sexual reproduction, which, as we have already seen, Lucretius organizes under the discovery of iron (*ferrum*). The passage from spontaneous generation to sexual reproduction corresponds with – but, again, like agriculture’s imitation of the *glandes caducae*, does not cause – a shift in the organization of human society from the dispersed and matriarchal to the aggregated and patriarchal. The key moment in this transition, as Brooke Holmes emphasizes, is when men start «to recognize their offspring as their own» (5, 1013, *prolemque ex se uidere creatam*) – that is, to conceive of generation itself as sexual, requiring the union of male with female³⁹.

It is true that Lucretius sometimes remarks on the mutuality of sexual reproduction, not only in the anthropology of book 5, but also in his ethical treatment of sex in book 4. There, particularly, he describes how the features of a child’s appearance can be inherited through matrilineas as well as patrilineas⁴⁰. Yet, as Nugent again contends, these are variations that prove a rule: throughout the poem, awareness of what geneticists call “segregation” in the inheritance of traits is inevitably recast as a transmission solely «from father to father» (4, 1222, *quae patribus patres tradunt a stirpe profecta*)⁴¹. What Nugent does not explore is the possibility that this narrowing of sexual reproduction into an ever more exclusively patrilinear model may be read as part of the same narrative of decline in fertility that brought about the first reproductive bottleneck.

If the earliest phase of terrestrial fertility contained an internal limit, then, by extension, the phase of sexual reproduction will come to its own end, causing also the collapse of agriculture and patriarchy – those concomitant ecological and social formations. Already in book 2, Lucretius introduces the specter of sterility as an ethical problem. It is a dire picture: «we wear out the cattle and the strength of farmers, and we

³⁸ For the division, see esp. 5, 860-870, cf. 5, 200-234 with Holmes 2014, 144-145.

³⁹ See Holmes 2014, 160 and *passim*.

⁴⁰ «Some become similar to their mother because of the influence of the maternal seed, just as some become like their father because of the paternal seed» (4, 1211-1212, *tum similes matrum materno semine fiunt, / ut patribus patrio*). On the doxography for Lucretius’ explanation of heredity, see Leonard-Smith 1942, *ad loc*.

⁴¹ See fully 4, 1218-1222 with Nugent 1994, 200.

consume iron (*ferrum*) on fields by which we are hardly fed, so stingy are they with their offspring (*parcunt fetus*) and so much more do they require labor»⁴². Amid these dismal conditions, the bitter farmer – one cannot help but think of the penny-pinching old Cato of *De agricultura* – moans that his ever more taxing exertions produce an increasingly barren harvest and «comparing the present with the past, he praises the fortunes of his forebears» (2, 1166-1167, *cum tempora temporibus praesentia confert / praeteritis, laudat fortunas saepe parentis*). Yet the farmer's bitterness is entirely misplaced, just like his labor. The Lucretian narrator interjects: what could human effort ever be worth in the «broken down age of a barren earth» (2, 1150, *fracta [...] aetas, effetaque tellus*)? The farmer's real mistake is not understanding, as a good Epicurean, that «everything wilts away bit by bit, depleted from the long expanse of life» (2, 1173-1174, *nec tenet omnia paulatim tabescere [...] spatio aetatis defessa vetusto*). The repetition of the root, *fēt-*, in the narrator's words for «offspring» and «exhaustion» forecasts clearly the shared trajectory of agricultural depletion (*parcunt fetus*) and the gynomorphic stages of earth's fertility (*effeta tellus, omnia defessa*).

In this same ethical register, but as a counterpoint to the old farmer's mistaken response to earth's declining fertility, we might look to the advice that Lucretius offers to the “lover” in book 4. For the individual seeking Epicurean contentment in the face of the «madness and hardship» (4, 1069, *furor atque aerumna*) of sexual desire, the best solution is, simply, to get rid of it, especially «by strolling after some wandering Venus» (1071, *volgivaque vagus Venere*). This striking repetition draws in parallel the primordial human way of life «wandering in the manner of the beasts» (*volgivago [...] more ferarum*) with a fantasy of uncomplicated pleasure through contractual sex⁴³. Yet this association of free love for a price with archaic humanity's *mos ferarum* is offered rather more as a symptom to be enjoyed than as a solution for the softening of sexual potency. Life conducted by means of an aleatoric, promiscuous wandering (*volgivagus*) in the time before agriculture and patriarchy was enabled by the copious fertility of the earth herself. For latter-day creatures, Epicureans included, who must

⁴² Lucr. 2, 1161-1163, *conterimusque boves et viris agricolarum, / conficimus ferrum vix arvis suppeditati: / usque adeo parcunt fetus augentque laborem*.

⁴³ These are the only two places where this unusual composite adjective appears not only in *De rerum natura* but in all of ancient Latinity. For a Catonian source for Lucretius' advice if not his language, see Leonard-Smith 1942, *ad loc*.

reproduce sexually and sustain their own offspring with the offspring of plants, there can be no such promise from Mother.

The coming apart of patrilineal sexual reproduction and its ecological implications accelerates rapidly in the final books of *De rerum natura*. In a passage from the anthropology, which Richard Hutchins calls the “revolt of the animals”, humans attempt to extend to *ferae*, especially boars, elephants, and bulls, the practices of domestication with which they had successfully subdued the other type of non-human animals, such as horses or sheep⁴⁴. The consequences are hyperbolically disastrous. Using Deleuzian terminology, Hutchins describes this event as a moment of escape in which the “lines of flight” cut by the stampeding beasts relieve the pressure of the “molar line” of human accumulation. Yet the antagonism between *ferae* and humans remains irreconcilable, and so the scene also suggests, through a closing simile, that the ultimate collapse of this distinction is still to come: «at that time all the whole race of the various beasts was scattering, just as now often elephants scatter when they are badly wounded by the iron, and they deliver many beastly deeds to their own»⁴⁵. As it turns out, this revolt was not an isolated incident in the past, but still happens today, regularly, when those animals whose survival depends on independence from human interference are «wounded badly» (*male mactae*) by the iron (*ferro*). As a sign of hypertrophy, this phallic tool of both agriculture and patriarchy threatens to destroy, finally, the distinction between man and beast. The wounded elephants deliver «beastly deeds» (*fera facta*) to «their own» (*suis*) – an ambiguous phrase that encompasses both other *ferae* and their “side” in a battle between humans who have sought to bring them under control⁴⁶.

This threatened collapse of the sexual, patriarchal, agricultural regime of fertility is realized in the final passage of the poem: the plague of Athens. In this much-exercised section⁴⁷, Lucretius’ narrative portrays the conditions of a menopausal bottleneck, repeating the extinction event which marked the passage from parthenogenic to menarcheal stages of the earth’s development.

⁴⁴ See fully 5, 1308-1340 with Hutchins 2021.

⁴⁵ Lucr. 5, 1338-1340, *diffugiebat enim varium genus omne ferarum, / ut nunc saepe boves lucae ferro male mactae / diffugiunt, fera facta suis cum multa dedere*. Cf. Hutchins 2021, 153.

⁴⁶ For the slippage of reflexives in this passage, cf. 5, 1310; 1323; 1327-1328.

⁴⁷ See Müller 2007 and Fowler 2007 for the interpretative history.

While adhering closely to the Thucydidean model in other respects, Lucretius pointedly leaves out the wartime context, in which Spartan forces specifically targeted rural areas, and there is no mention of Pericles' fateful decision to move the farmers of Attica into the newly fortified city⁴⁸. This gap in the narrative frame, while easily supplied by intertextual readers, makes strange the intratextual reappearance of the «strong master of the curved plow» (6, 1253, *robustus [...] curvi moderator aratri*; cf. 5, 933) who succumbs to the disease even more virulently than all the rest. In gory detail – again, with no obvious internal explanation – Lucretius' plague targets the farmers who remained in the fields: «their bodies lay piled up deep inside their huts, succumbing to poverty and disease»⁴⁹. The disease itself «flowed in sorrow from the fields into the city», accompanying those farmers who came from far and wide «filling up every place and shelter» with their dead bodies⁵⁰. Lucretius' particular and unexplained focus on the disease's effects on farmers and the countryside portrays the disease as an agent of sterility, come to undo the ecological dependency brought into being by agriculture. Yet this blight is not only agricultural. It is also among these most afflicted farmers that Lucretius illustrates the generational breakdown wrought by the disease: «the lifeless corpses of parents you could see very often lying atop the lifeless corpses of their children or, again, the children would give up their life atop their mothers and fathers»⁵¹.

At the individual level, Lucretius too describes the disease as affecting fertility and destroying the principles of speciation which were created and required by sexual reproduction. The disease does not only afflict humans but disrupts the strategies of survival used by both *ferae* and domesticated animals. That «race of winged beasts» (1216, *alittum genus atque ferarum*), who survive by scavenging and foraging, tried to stay far away from the disease and its infected corpses. But, eventually, the «sad generations of beasts» (1220, *tristia saecla ferarum*) must die by means of a «neighboring death» (1218, *morte propinqua*). Even the «trusty dog»

⁴⁸ See Thuc. 2, 13-17 for Pericles' advice and the move into the city. Plague breaks out at Thuc. 2, 47.

⁴⁹ Lucr. 6, 1254-1255, *penitusque casa contrusa iacebant / corpora paupertate et morbo dedita morti*.

⁵⁰ Lucr. 6, 1259-1261, *nec minimam partem ex agris is maeror in urbem / confluit, languens quem contulit agricolarum / copia conveniens ex omni morbida parte. / omnia conplebant loca tectaque*.

⁵¹ Lucr. 6, 1256-1258, *exanimis pueris super exanimata parentum / corpora nonnumquam posses retroque videre / matribus et patribus natos super edere vitam*.

(1222, *fida canum vis*) lays down his life like all the rest, abandoned by his human masters in the street⁵². In the end, the antagonism that subtended the divisions between *ferae*, domesticated animals, and humans is overcome by kindred, mutual destruction.

Even among those individuals who survive the disease, its lingering effects create a new sterile breed of post-sexual *portenta* recalling, from the other side, the exuberant fertility of those *portenta* who could not survive the sexual bottleneck. As the disease passes through the body, it leaves some physically deformed, without the use of hands, feet, or eyes, and some mentally damaged, with no ability to remember who they are⁵³. For others, the disease descends into the «very lifegiving parts of the body» (1207, *in partis genitalis corporis ipsas*). Rather than dying, which the narrator suggests might be preferable, those thus affected «went on living after they had severed their virile member by means of the iron» (1209, *vivebant ferro privati parte virili*). This detail, again a deviation from Thucydides' account⁵⁴, turns the symbolic phallus of agriculture and patriarchy back on the male organ itself, completing a sterilization that has been accelerating through the very processes and dependencies of sexual reproduction. These mutilated survivors are harbingers of extinction, just as the proliferation of non-reproductive creatures signaled an end to the possibility of a pre-sexual fertility. In the twilight of this plague, however, there is no indication of a new form of fertility that might come next, only the agents of dissolution, the disease itself, returning life to atomic matter.

3. Cicero's Feral Future

Starting from the bleakness of Lucretius' account of fertility's terminal decline, Cicero's sublimation of sex in *De senectute* starts to look like something other than simple prudishness. Rather, Cato's relief at the abatement of bodily appetites in old age and his turn to agricultural pleasure reads as an attempt to define, however uncertainly, a way of relating to the future that escapes the dwindling potency of sexual reproduction – and Lucretius' ancient cry of *après moi, le déluge!*

⁵² See Lucr. 6, 1214-1224.

⁵³ See Lucr. 6, 1199-1213.

⁵⁴ Leonard-Smith 1942, *ad loc.*

Of all of Cicero's philosophical works, with the exception perhaps of *De officiis*, *De senectute* is particularly preoccupied with fathers and sons, both literal and surrogate⁵⁵. Toward the end of Cato's speech, indeed, he turns and directly exhorts the young Scipio to fulfill his duties as a son of famous male ancestors, exclaiming:

Nemo umquam mihi, Scipio, persuadebit aut patrem tuum Paulum, aut duos avos Paulum et Africanum, aut Africani patrem aut patruum, aut multos praestantes viros quos enumerare non est necesse, tanta esse conatos quae ad posteritatis memoriam pertinerent, nisi animo cernerent posteritatem ad se ipsos pertinere (Cic. *Cato* 82).

No one will ever convince me, Scipio, that your father Paulus, or your two grandfathers Paulus and Africanus, or the many other outstanding men, whom it is not necessary to enumerate, would have attempted so many things which would matter to the memory of posterity, unless they perceived in their mind that posterity would matter to them.

Calling on Scipio to consider both his biological and adoptive lineages, Cato summarizes the motivation of these and «the many other outstanding men» who have participated in the inheritance in which he now urges his young interlocutor to take part. These men, Cato cannot be dissuaded, acted with a certainty that doing «things that would matter to the memory of posterity» (*ad posteritatem memoriam pertinerent*) will ensure that this «posterity will matter to them» (*posteritatem ad ipsos pertinere*). The repeated verb *pertinere* appears also in Lucretius' famous formulation of the Epicurean symmetry argument, in which he argues that «death matters not a bit to us» (*nihil igitur mors est ad nos neque pertinent hilum*) because, just as before we were born, «nothing can happen to us then, when we will not be»⁵⁶. In this explicitly anti-Lucretian phrase, then, Cicero's Cato describes the ways that the future matters to these men, even when they are dead, through the memorialization of their descendants and they, in turn, will matter to the future

⁵⁵ Cato directly addresses his own recently deceased son at *Cato* 84, on which see Englert 2017, 60-61 for a reading that stresses biographical connections to the death of Tullia. *De officiis* is dedicated to Cicero's son, also named Marcus, and addressed to him when he is studying in Athens, just as Cicero did; see, e.g., *off.* 1, 1-7. On Roman paternity, see, for Cicero specifically, McConnell 2023 and, more generally, Habinek 2000 and Gunderson 2003.

⁵⁶ See *Lucr.* 3, 830-842 with, e.g., Warren 2001.

through their glorious actions and equally glorious progeny. This bi-directional relationship between the past and future is the promise held out by paternity to Rome's ever-tumultuous present⁵⁷.

Cato clearly sees value in the highly conventional Republican reliance on paternity, particularly as an allurements to the hesitant young Scipio. But, for himself, Cato keeps returning to a very different way of relating to the future that he finds exemplified by the elderly farmers of his rural district. Drawing a direct correspondence between the *modus vivendi* of the sage (*sapiens*) and the agriculturalist, Cato reserves his highest praise for those who have worked for an entire lifetime to fill their stores – both literal and figurative – with every possible sustenance of the mind and body⁵⁸. Yet, considering the unfailing dedication of these aged cultivators to their crops, he wonders,

quamquam in aliis minus hoc mirum est – nemo est enim tam senex qui se annum non putet posse vivere – sed idem in eis elaborant quae sciunt nihil ad se omnino pertinere:

«serit arbores quae alteri saeculo prosient»
ut ait Statius noster in *Synephebis* (Cic. *Cato* 24-25).

Although this is hardly surprising for those plantings [which they know will matter to them] – for no one is so old that he does not think he can live another year – still, they lavish the same care on those which they know will never matter directly to them at all:

«He plants trees to benefit another age»,
as our [Caecilius] Statius says in his Young Comrade.

Cato's attribution of this line to Caecilius Statius – a contemporary of Ennius, who figures prominently in the dialogue⁵⁹ – belies the idea's common currency; similar expressions are found throughout Latin and Greek literature as well as in Jewish and Arabic traditions and beyond⁶⁰.

⁵⁷ On the tumult of the present, see the Ciceronian narrator's opening address to Atticus: «I suspect that you are sometimes disturbed quite seriously by these same circumstances which are troubling me. A consolation for them is too immense a task and must be deferred until another time» (Cic. *Cato* 1, *et tamen te suspicor eisdem rebus quibus me ipsum interdum gravius commoveri, quarum consolatio et maior est et in aliud tempus differenda*).

⁵⁸ Cic. *Cato* 51, *venio nunc ad voluptates agricolarum [...] quae [...] mihi ad sapientis vitam proxime videntur accedere*; cf. 56.

⁵⁹ For Ennius, see *Cato* 10; 14; 16; 50; 73. This play by Caecilius Statius is also cited at *fin.* 1, 4 and *nat. deor.* 1, 13.

⁶⁰ See Powell 1988, *ad loc.* for parallels, e.g., a story from the *Midrash Rabbah* on Leviticus 25, 5 «in which Emperor Hadrian is surprised at a centenarian planting trees».

Yet the aphoristic feel of the line is, in turn, set off by its specific phrasing, which, again, varies Lucretian diction. Unlike Lucretius' *saecula*, which refer, invariably, to the closed biological lineages of «living» (*animantia*), «death-bound» (*mortalia*), or even «womanly» creatures (*muliebria*), this future, for which the farmer plant trees, is not embodied by *his* offspring or even the offspring of his race – it is, rather, an *alterum saeculum*: «the next age», a «neighboring era», «another's generation»⁶¹.

The farmer's relation to this *alterum saeculum* is again communicated by the verb *pertinere*: «they lavish the same care on those [plantings] which they know will never matter (*pertinere*) directly to them at all». Unlike Roman fathers and sons who seek to embody and be embodied by one another, the farmer views himself in a more oblique relation, as a «caretaker» or «worker» (*elaborant*) of the future. Despite its impersonality, however, this continuity between farmer and the future growth of his plants is not the complete dispossession of Lucretius' symmetry argument. Through a commitment to engaged indifference, the farmer becomes one force among many in shaping another's future.

In the place of the Roman elite's paternal self-reference – and the dogmatic certainty of Lucretius' return to matter – there is something fundamentally unknowable about the future for Cato's farmer. We cannot begin to describe the conditions of this *alterum saeculum* by tracing the relevance of the farmer alone, or even his actions *as* his actions. We need, instead, to look to the future of the plants themselves.

To pursue, in particular, the future of Cato's vine *quae natura caduca est*, I turn to a strikingly parallel image in Piso's speech from the last book of *De finibus*. As I have elsewhere discussed the relevant passage from *De finibus* (5, 39-40) at length and to similar purpose⁶², I quote the text in full and then summarize four points of interpretation only as necessary to facilitate my present reading of *De senectute* and the comparison with Lucretius:

Earum etiam rerum, quas terra gignit, educatio quaedam et perfectio est non dissimilis animantium; itaque et vivere vitem et mori dicimus, arboremque et novellam et vetulam et vigere et senescere; ex quo non est alienum, ut animantibus sic illis et apta quaedam ad naturam putare et aliena, earumque augendarum et alendarum quandam cultricem esse, quae sit scientia atque

⁶¹ Cf., e.g., Lucr. 1, 20; 2, 78 and 171-174; 4, 1223-1228; 5, 791.

⁶² Matlock 2024.

ars agricolarum, quae circumcidat, amputet, erigat, extollat, adminiculet, ut, quo natura ferat, eo possint ire; ut ipsae vites, si loqui possint, ita se tractandas tuendasque esse fateantur. Et nunc quidem, quod eam tuetur, ut de vite potissimum loquar, est id extrinsecus; in ipsa enim parum magna vis inest, ut quam optime se habere possit, si nulla cultura adhibeatur.

At vero si ad vitem sensus accesserit, ut appetitum quendam habeat et per se ipsa moveatur, quid facturam putas? An ea, quae per vinitorem antea consequebatur, per se ipsa curabit? Sed videsne accessuram ei curam, ut sensus quoque suos eorumque omnem appetitum, et si qua sint adiuncta ei membra, tueatur? Sic ad illa, quae semper habuit, iunget ea, quae postea accesserint, nec eundem finem habebit, quem cultor eius habebat, sed volet secundum eam naturam, quae postea ei adiuncta erit vivere (Cic. *fin.* 5, 39-40).

[Piso:] *There is a development toward perfection among the living things that the earth bears which is not unlike that of animals; and so, we can say that a vine lives and dies, or that a tree is young or old, thriving or expiring; consequently it is not contrary to think that for them as for animals certain things are suited to their nature and certain other things are contrary to their nature, and that for their growth and nurture they also possess a "foster mother", the science and art of the farmers, which trims and prunes, straightens, raises and props, and helps them go toward the goal where nature leads them – so much so that the vines themselves, if only they could speak, would confess that this is way they ought to be handled and watched over. In reality, of course, the power that watches over the vine, in this particular case, is something outside of it; for there is not enough force within the vine to enable it to attain its best form without the assistance of cultivation.*

But what if the vine achieves sensation, and thereby gains some degree of desire and power of movement, then what do you think it will do? Will it not provide for itself the care which it previously received from the vinedresser? But do you see how its self-care will extend also to protect its sense-faculties and all of their objects of desire, and any additional organs that may have accrued to it? And so, adding these recently appended properties to those which it always had, it will no longer possess the same end as the cultivator who tended it, but will desire to live in accordance with that nature which it has subsequently acquired.

First, on perfection. Piso's vine serves as focal point in a sweeping claim for natural teleology. Unlike Lucretius' equally encompassing Epicurean narrative, this largely Peripatetic argument envisions life tending

not toward dissolution but toward perfection⁶³. This theory governs equally the development of individuals and the relationship between different species. Piso's comparison of plant- and animal-life cycles, from youth to old age, thus offers a material and logical framework for Cato's more poetic comparisons in *De senectute*. As we have seen, the old man falls like the *caducae baccae* because they both exist already in a shared, post-agricultural condition of dependency. Indeed, in the conclusion of Piso's argument, these similarities are realized as the vine becomes not only "like" the human, but bodily, physically animalistic⁶⁴.

Second, on dissimilarity. Piso's argument, despite these strong claims for universal similarity and a natural tendency toward perfection, also accentuates marked differences in kind that separate plant- and animal-life. The most obvious places where this occurs are the several hypothetical statements that serve as lynchpins: «the vines themselves, *if only they could speak*»; «*But what if the vine achieves sensation [...] then what do you think it will do?*» By framing his argument as only a thought-experiment ("In reality", "of course"...), Piso can assert continuity between the capabilities and status of different species along the *scala naturae* while, at the same time, demonstrating that the basis for this continuity is not simple, but rather a more ambivalent relation. It is only ever «not contrary» (*non alienum*) to think that plants are only ever «not dissimilar» from animals (*non dissimilis*). While this ambivalence is certainly not as irreconcilable as the antagonism between humans, domesticated animals, and beasts in *De rerum natura*, nonetheless it preserves a gap between different species and their strategies of survival.

Third, on coercion. To bring perfection out of this ambivalence, Piso's argument makes use of the type of corrective discipline that we also saw exercised by Cato's pruning knife (*ferrum*). Partially, Piso's point here furthers his larger argument in *De finibus* 5 against the Stoics, that for any individual life to achieve perfection it must find and make use of acquired, non-innate techniques and tools. In the case of the vine, these external inputs come in the form of «a foster mother» (*cultrix*)⁶⁵. The unusual gendering of the figure is owed, grammatically, to the feminine ab-

⁶³ Source-critical approaches are found in Gill 2016 and Inwood 2016. For the conceptual relationship between this passage and Theophrastus, see Matlock 2024.

⁶⁴ Piso's argument continues to trace the vine's development through the forms of animal life until arriving, predictably, at the human; see Cic. *fin.* 5, 40-43.

⁶⁵ This is H. Rackham's (Loeb) translation; note that in the paragraph below, the figure is again masculine, *cultor*.

stract nouns that follow: the *scientia atque ars agricolarum*. Yet, coming from Lucretius' association of agriculture with patriarchy and Cato's search for a non-patrilinear futurity, Piso's choice draws something generatively fertile into the otherwise phallically coercive activities he describes as her purview. It is in the generative potential of such disciplinary actions that Cato's farmer looks to his vines, seeking to extend the plant's life beyond his own and, thus, closer to the goal of nature herself.

Fourth, and lastly, on feralization. Despite the neatness of this argument from the perspective of the farmer and his *ferrum*, the latent dissimilarity that separated plant- and human-life at their origin returns in Piso's claim: «adding these recently appended properties to those which it always had, it will no longer possess the same end as the cultivator who tended it, but will desire to live in accordance with that nature which it has subsequently acquired». As it turns out, the vine has ceased to be a vine, nor is it simply the product of human coercion, but rather takes on a newly hybridized form of life, shaped by its own sensation, desire, and movement through the world. By desiring «to live in accordance with the nature it has subsequently acquired», the vine has become something completely other than either its vegetal starting point or its human-imposed goal – it has, in short, gone feral⁶⁶.

The hybridity and future orientation of this feral vine serves as a counterpoint to the irreducible divergence that Lucretius sees between all species. Lucretius' *foedus naturae* maintains a rigorous prohibition on the reproduction of morphologically distinct species. Yet Piso's hybrid vine, which combines human ingenuity with its own, perhaps denigrated and overlooked, but constantly evolving mechanisms of survival, is a stark demonstration that not only is such generation possible, it is happening around us all the time. Furthermore, where Lucretius' *foedus* exists to hold at bay a fundamental inter-species antagonism – a destructive subcurrent that is always threatening to erupt, as it does in the revolt of the *ferae* – Piso's argument shows that the differences between strategies of survival can just as often result in cooperation and new forms of life. These may sometimes be strange or unpleasant, and often inconvenient for humans, but they are just as much an extension of natural processes as is humanity's own forms of ecological dependency.

⁶⁶ Cf. the definition of feralization from Tsing et al. 2020 «a situation in which an entity, nurtured and transformed by a human-made project, assumes a trajectory beyond human control». See further Halberstam 2020.

And this is not only true for plants under cultivation. Indeed, earlier in his speech, Piso establishes self-preservation as a necessary principle for any biological development: citing Pacuvius, he wonders that even «beasts (*ferae*) who lack forethought», when the fear of death rises inside them, «bristle with horror» (*horrescunt*). Because of this innate aversion to the «dissolution of one's nature» (*dissolutio naturae*), humans and *ferae* alike seek, we might say with Freud, to «die only after their own fashion»⁶⁷.

We can now return to Cato's vine in *De senectute* from this less paternal, more feral perspective. Cato's description stays with, as if in montage, the future growth of the plant. The vine's tendrils reach up «like hands» (*quasi manibus*) toward the vinedresser's props, merging the plant's survival with the human actions that project it upward physically and onward in time. Yet, alongside and almost in spite of this anthropomorphism, the vine also changes itself into other plant and animal forms of life, as it now «meanders» like a snake (*serpentem*) and now becomes «woody» like a thicket of trees (*silvescat*)⁶⁸. As much as the farmer's knife (*ferrum*) aims to contain them, these feral tendencies also constitute a necessary condition of its future growth. While Cato finds pleasure in imagining the vine's growth shaped by his attention and care, the vine may have other plans.

In fruitful juxtaposition with the paternal future that Cato extends to Scipio, the vine's feralization in *De senectute* and *De finibus* also takes a long view on ecological descent that contrasts strongly with Lucretius' perspective. For Lucretius, fallenness is evidence of a natural history that must always reproduce the dispersive motion of the atoms – a movement that, through turns and swerves, nonetheless tends always downwards⁶⁹. As part of this material irreducibility, humans are bound to experience their ecological relationships, at best, as a fleeting and contractual gratification, at worst as an all-encompassing antagonism headed for sterility and extinction. For Cicero's speakers, by contrast, there is accessible a form of eco-solidarity that, while acknowledging the legacy of human violence, also allows for post-human – or, better, trans-species

⁶⁷ See Cic. *fin.* 5, 31 with Freud 1961, 47.

⁶⁸ This unusual word appears only here and twice in Columella (4, 11, 2 and 5, 6, 23). It seems to translate the Theophrastean ὑλομανέω, «go wood-mad», on which see Michelini 1978, 38.

⁶⁹ See, canonically, Lucr. 2, 216-250. Lucretius' description of atomic motion remains contentious; see, e.g., O'Keefe 1996; Kramnick 2012; Debbar 2021.

– futures to grow out of and subsume human intent and action. While it may be tempting to reduce these alternatives to the familiar positions of pessimism and optimism in late Republican discourse, the ecological terms in which they are expressed invite us to continue to think about how they might translate to the fractured, exhausted *aetas* that we also inhabit.

4. Coda: Textual Fertility

Lastly, then, I suggest a correspondence between these Lucretian and Ciceronian models of ecological change and the ways in which their texts construct relationships with readers beyond their immediate historical context.

Ovid, writing only a generation later, already registers something of the irony that inheres in Lucretius' poem as a text that requires its own destruction. In his tongue-in-cheek ode to Envy (*Invidia*) that closes the first book of the *Amores*, he favorably compares the chance that his work will outlive him to a lineage of older authors. Yet, while his remarks on these other poets emphasize that they, like Ovid himself, wrote in order to achieve a literary fame that could survive their own deaths, the couplet on Lucretius, quoting directly from *De rerum natura*, is instead a caveat to the very idea of poetic immortality: «the songs of sublime Lucretius will perish at the time when that singular day delivers earth to destruction» (*am.* 1, 15, 23-24, *carmina sublimis tunc sunt peritura Lucreti, / exitio terras cum dabit una dies*; cf. *Lucr.* 5, 95). As a representative of future readers since antiquity, Ovid captures the collapsing horizon that the poem draws for its conditions of possibility. Central among these conditions is, emphatically, the ever-dwindling potency of the world to regenerate itself – along with those creatures who might know enough to read its words and hear its message. The well-known, but nonetheless profound story of *De rerum natura*'s harrowing physical survival through the textual bottlenecks of the middle ages and religious censorship is enough to give credence to Ovid's intuition⁷⁰.

It is certainly possible to read this descent within and of the text as part of its Epicurean and didactic mission – as a longer, more sustained

⁷⁰ See Greenblatt 2011 and Lezra-Blake 2016. For a recent resurgence in Lucretius as a thinker of apocalypse, see esp. Galzerano 2019 and Schiesaro 2020.

version of the test that Peta Fowler ascribes to the final plague passage itself. She argues that «there are certain arguments and conclusions at which pupils have to arrive by themselves. For them to be given the final and complete answer would be an abnegation of duty on the part of the teacher. Thus, the plague passage can be seen as a kind of test for the reader to see if she has absorbed the message of Epicureanism»⁷¹. In this case, we might view Lucretius' seeming pessimism about descent, both as an ecological principle and a condition of textual possibility, as a lesson we must learn in mortality: since death is an unavoidable process, we should regard it from the tranquility of Epicurean enlightenment. While this approach helps to explain the text's lack of internal closure, when viewed from the external perspective of the text's horizon of possibility, it feels more like a lamentably open question: is this a lesson that humans are or will ever be capable of learning? Does Lucretius' text really carry with it faith that someday, sometime, enough people will pass its test? Given common reactions to our own ongoing crisis of eco-fertility – ranging from angry denial to uninformed disinterest to hostile accelerationism⁷² – it seems, with all-too Lucretian pessimism that we cannot and will not. Furthermore, with the uncanny foresightedness that *De rerum natura* often seems to demonstrate, contemporary technoutopian “solutions” to this crisis envisioned, for instance, by Henry Greely's *The End of Sex and the Future of Human Reproduction*, seem destined to exacerbate, in ways analogous to the technologization of iron in the age of sexual reproduction, inherited social inequities and ecologically destructive tendencies in a post-sex age⁷³.

We have no evidence corresponding to Ovid's notice on Lucretius to give us a sense of how readers of *De senectute* in Cicero's near future might have reacted⁷⁴. Yet, fittingly, it may be by reaching back in time that we can sense how Cicero's text constructs its own futurity. Through explicit quotations and implied references to Plato and Xenophon⁷⁵, this dialogue asks to be read against a backdrop of Socratic imagery that configures writing as an act of sowing. Plato's use of this metaphor in the

⁷¹ Fowler 2007, 232.

⁷² See, e.g., Hatley 2012 and Rose 2012.

⁷³ On Greely 2016, see Meilaender 2019 and Witt 2023.

⁷⁴ On Cicero's reception in the early Empire generally, see Keeline 2018 for a rhetorical focus and Bishop 2019, esp. 267–298 for a discussion of the philosophy.

⁷⁵ See esp. the lengthy, unattributed quotation from *R.* 328d–330a at *Cato* 6–8 with Stull 2013; and *Xen. oec.* 4, 20–25 on the meeting of Cyrus and Lysander with *Cato* 59.

Phaedrus, for instance, draws attention to the temporal ambivalence of “planting” ideas in writing:

ὁ νοῦν ἔχων γεωργός, ὧν σπερμάτων κήδοιτο καὶ ἔγκαρπα βούλοιτο γενέσθαι, πότερα σπουδῆ ἢν θέρους εἰς Ἀδώνιδος κήπους ἄρων χαίροι [...] Τὸν δὲ δικαίων τε καὶ καλῶν καὶ ἀγαθῶν ἐπιστήμας ἔχοντα τοῦ γεωργοῦ φῶμεν ἦττον νοῦν ἔχειν εἰς τὰ ἑαυτοῦ σπέρματα; [...] Οὐκ ἄρα σπουδῆ αὐτὰ ἐν ὕδατι γράψει μέλανι σπείρων διὰ καλάμου μετὰ λόγων ἀδυνάτων μὲν αὐτοῖς λόγῳ βοηθεῖν, ἀδυνάτων δὲ ἰκανῶς τάληθῆ διδάξαι (Pl. *Phdr.* 276b–c).

[Socrates:] Would a farmer with intelligence who had seeds he cared about and wanted to produce a fruitful harvest, seriously sow them during the summer in some ornamental garden (lit. Garden of Adonis) [...]? Are we to say that the man who has knowledge of things just, beautiful and good has less intelligence than the farmer when it comes to his own seeds [...]? Then he won't be serious about writing them in ink, sowing them through his pen with words that are unable to defend themselves in argument and are unable to teach the truth sufficiently⁷⁶.

For Socrates, the difference between a serious farmer and an ornamental gardener is a question of timing: whereas the latter employs the shortened growing season associated with the festival of Adonis⁷⁷, the former ensures that his beloved seeds have time to produce a fruitful harvest. Socrates suggests further that the philosopher should emulate this farmer – not in his timing itself, but in the intelligence that he shows in selecting a timescale suited to his own endeavor. In terms of timing, the Socratic philosopher, *unlike* the farmer, should favor the immediate growth of the spoken word, which can be defended by the speaker and so «teach the truth sufficiently (ἰκανῶς)». With ample irony, Plato's Socrates rejects as serious philosophical practice the sowing of ideas “in ink” precisely because of their uncertain futurity and, often, untimely maturation.

⁷⁶ Translation adapted Emlyn-Jones and Preddy (Loeb).

⁷⁷ The function of the Gardens of Adonis is a topic of debate, but their ritual association with a famously short-lived mythical figure helps to clarify the temporal contrast in the passage; on the social and religious history, see Reitzammer 2016.

Cicero's dialogue also exemplifies this «virtue of temporal discernment»⁷⁸. But, by reconfiguring the underlying image less as a “sowing” of ideas and more as a “propping up”, *De senectute* relishes the future orientation of writing that Plato's Socrates rejects. Just as Cato's farmer acts not to achieve relevance to posterity, but to participate impersonally in change and difference, so the Ciceronian philosopher should write to enable the future to determine its own continuity with the past. In this light, we can read Cicero's eco-writing in relation to recent work on “degrowth” – an attempt to create a future of “communal luxury within ecological limits” and a proliferation of ideas and practices that free «the world's producers to choose from a richer and more diverse array of technologies and socio-ecological relations than capitalist industrialization can offer»⁷⁹. The key commonality between the horizon of Cicero's texts and this current interest in eco-socialism lies in ceding the fantasy of a singular, self-referential, and profit-driven descent and, instead, embracing the multiple, mutually independent paths to the future that are always available from within the shared fallenness of the human and the more-than-human. In the vines, then and now, we can see how Cicero's philosophical writing looks beyond his self and his time – not as a “sufficient” account of truth, but as the descendant of a fertile and unknowable future⁸⁰.

⁷⁸ This phrase derives from the work of the modern eco-philosopher, James Hatley; see Hatley 2012.

⁷⁹ On degrowth, see Hickel 2021; Schmelzer et al. 2022; Heron 2022.

⁸⁰ The ideas I present here began to take shape for a seminar at the 2021 American Comparative Literature Association annual conference entitled, *The Before and the After: Archê and Avenir in a Time of Crisis*, and the subsequent volume in which Matlock 2024 appears. They further developed through participation in SIAC's 2023 conference on *Cicero and the Environment* at the Università di Bologna. My thanks to the many thoughtful interlocutors at both of these events, and especially to the organizers, respectively, Mario Telò and Sean Gurd, and Tommaso Ricchieri and Adalberto Magnavacca. I also deeply appreciate the care and effort of Chiara Graf, Kate Meng Brassel, and *COL*'s anonymous readers in refining content and style. Any missteps that remain are entirely my own.

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