

INTRODUCTION

CONCEPTS

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Creatures conjure worlds, whole logics around them. Take, for instance, John Yianni's award-winning tabletop game *Hive*, which Gen42 Games launched in 2001 to much acclaim.¹ Described as an abstract strategy game, *Hive* requires two players to face off with a series of hexagonal tiles, each with a different insect blazoned on it: beetle, soldier ant, spider, grasshopper, and queen bee. Each player places a tile next to another and tries to encircle the opponent's queen bee. The process of playing requires the creation of a hive-like architecture made of opposing pieces. But each tile implies a different strategy. The queen bee moves slowly, one space at a time, as the beetle does, but the latter possesses a special capacity to climb vertically on top of an adjacent tile, thus adding a new dimension of travel and immobilizing an opponent's tile. Spiders can move three spaces around the circumference of the hive layout, as do the soldier ants, though their movement is unlimited. Not surprisingly, the grasshopper can leap over pieces but only in a straight line. Just as each of these strategic creatures in *Hive* implies a different strategy, vector, and style of movement, so too does each concept invoked here offer a singular view of the architecture of the living. It also speaks to a larger world of lesser living creatures, not isolated in their individual species worlds but complexly interacting—even if improbably—under the parameters of a tabletop strategy game.

Locomotion, particularly of insects, is just one of many vectors of experience that might encourage us to reconsider our interpretive practices precisely because it redirects our attention from the totality of a creature to other considerations, like habit or morphology. And, indeed, a common taxonomy for early modern creatures combined both habitat and locomotion in considering whether creatures tended to crawl or creep on or in the earth, to fly in the air, or to swim through water. This very way of indexing insects animates Samuel Purchas's 1657 *A Theatre of Politicall Flying-Insects*, the exquisite title of which sends a series of conceptual signals. Like Thomas Moffett's *Theater of Insects*, Purchas's text used the common master metaphor of the theater to invoke breadth of worldly scope (as in "this wide and universal theater") and seriousness of scientific importance (as in the theaters of anatomy and war increasingly referenced in the period). These creatures offer insights into group psychology—they are political creatures whose social grouping yields useful insights into both insects and humans—as debated in a lineage dating back at least to Aristotle. They are creatures of the air—flying insects—as opposed to insects that crawl or burrow and perhaps more like other creatures of the air, like birds. Purchas does not encompass, then, the encyclopedic array of Moffett, but he does address a lesser multitude of creatures, including several varieties of bees, along with wasps, hornets, and grasshoppers.

If *A Theatre of Politicall Flying-Insects* was typical in its invocation of categories and capacities that cut across life-forms, it quickly falls prey to the specific gravity of the creature. It will be no surprise that a singular creature rises up: the charismatic bee. Indeed, the very title of the work describes the book as one "where in especially the Nature, the Worth, the Work, the Wonder, and the manner of Right-ordering of the BEE is discovered and described" and with the word *BEE* appearing in the largest letters on the title page. Purchas promises further a mix of "discourses, historical, and observations physical," as well as "meditations, and observations *Theological* and *Moral*, in *Three Centuries* upon that Subject." All of these additions pertain solely to the bee, which occupies twenty-six of thirty-two chapters, with three of the remaining six chapters varying from *Apis mellifera* to address wild bees, humble-bees, and American bees. Purchas casts his net wide in the dedication to the book, identifying "creatures [as] the Book of Nature" and claiming "the world is Gods library," but the excellency of bees, which Purchas

considers “a little neglected creature,” grabs the lion’s share of the spotlight. Indeed, he identifies the bees as “so curious in Architecture, and in the fabrick of her hexangle Combs,” marveling that bees “should observe as just proportions as the best Geometrician.”² No effusions of wonder emerge for other feats of insect architecture and geometry, such as webs. Once he begins, Purchas has eyes only for bees, and the dedicatory poems confirm as much. One poem is titled “To the Author on his Physio-theological History of Bees,” and another is an “Elaborate Treatise of BEES.” These descriptive tags recur in the other poems, nearly all of which flag the bee, along with complimentary notice of the author’s industry in this “Bee-like laborious treatise.” Quite consistently, then, Purchas’s fascinating cross-categorical thinking (“physio-theological”) collides with the irresistible allure of singularity of creaturely reference. Even social insects can appear to offer the prospect of individuation or even personhood assimilable to the human. Insects can appear to be all too human, with the long-standing mimetic dynamic between human and bee resolving too easily in favor of anthropocentrism. Bees were, as indicated in volume 1, the most charismatic of insects, to be sure. But inclinations dating back far earlier than Purchas threaten to domesticate the strangeness of the insect world.

While the first volume of *Lesser Living Creatures of the Renaissance* seeks to conjure and capture the charisma of *creatures*, this one directs its attention to the *concepts* elicited by insect life. It does so at a moment, of course, of what we might call the maximum exposure of the keyword. In 1976, Raymond Williams articulated his task in the first edition of *Keywords* as producing “the record of an inquiry into a vocabulary: a shared body of words and meanings in our most general discussions, in English, of the practices and institutions which we group as *culture* and *society*.”

Keywords were, then, “significant binding words in certain activities and their interpretation” and “significant, indicative words in certain forms of thought” that ultimately offer “a way of recording, investigating and presenting problems of meaning in the area in which the meanings of *culture* and *society* have formed.”³ In a revised edition of *Keywords* published in 1983, Williams added more words to the mix, and did so more recently in a “new” edition in 2015. The intervening decades witnessed an explosion of keywords. Could Williams have predicted how dominant this interpretive strategy would become? In 2009,

New Keywords: A Revised Vocabulary of Culture and Society promised an updated, multiauthor strategy, as does the more recent *Keywords for Today: A 21st Century Vocabulary*. John Patrick Leahy's 2019 *Keywords: The New Language of Capitalism*, which directs its attention to terms of economic import, is one of many such keyword books calibrating itself to more specific vocabularies. New York University Press features a "Keywords" series, with volumes treating a range of subjects (e.g., *Keywords for African-American Studies*, *Keywords for Disability Studies*, *Keywords for Media Studies*). More particular instances from within early modern studies become visible of late as well. Roland Greene's *Five Words: Critical Semantics in the Age of Shakespeare and Cervantes* advocates for a "critical semantics" that obeys the dictum that "words precede everything" and attends to five particular "protagonist words, complex words, keywords, and, not least, everyday words" whose complex transformations between early modernity and the present offer insights into the transformation of worldviews.⁴

Certainly the logic of the keyword relies on, even as it differentiates itself from, earlier interpretive strategies in dictionaries and encyclopedias. Of course, the omnipresence of search strategies plays as potent a role in the dominance of keywords. Whether one traces a lineage to Williams or acquiesces to the latest trends in digital search technologies, it is hard not to feel keyworded to death. In one sense, then, *Lesser Living Creatures* joins an onslaught of new dictionaries, encyclopedias, and keyword-oriented publishing series across interest, discipline, and period. And yet the hope here is to find unexpected connections and revelatory moments in turning to conceptual nodes that might otherwise be obscured by creature logic. The word *insect* derives from the Latin *insectare*, which means "to cut into." These concepts represent not an anatomization of the insect but rather the exposure of modular qualities that stretch across insect species and even beyond the insect world, reminding us of Eric C. Brown's description of "segmentation" as "the most important identifying characteristic of the insect."⁵

Concepts enable, then, a kind of modular thinking, a thinking across categories that even the rich natural-historical materials of the era may at times prevent. The charisma of the creaturely form can easily draw us into predictable emotional patterns, which is no doubt why historians and theorists of nonhuman life seem to be so consistently attracted to either strange and terrifying creatures that provoke awe

(monsters or rare exotics) or the familiar and even domestic creatures that promise obedient intimacy (pets and livestock). Insects may provoke this familiar range of emotions—wonder and horror, fascination and disgust. And yet they participate in a kind of ordinary ubiquity that, no matter how wondrous or repellent insects may still prove to be, prevents them from serving as what we might call affective storehouses for humans to the same degree as other creatures. This tendency makes visible a series of other patterns, those not necessarily dictated by creature comforts, by which I mean the comfort of certain familiar feelings in response to the most charismatic of other-than-human creatures.

Indeed, the logic of the creature, which is not unlike the logic of objects or persons, conjures a kind of integrity: the singular insect compelling and on its own terms, however partial that singularity may be. But one of the guiding premises of *Lesser Living Creatures* is also that to consider creaturely life from the point of view of insects is not only to understand the strange proximities between divergent creatures (such as humans and flies) but also to understand insects as a spur to a conversation about the concepts and operations that govern forms of life. How do insects move, swarm, and infest? How do they fly, sting, and devour? How do they sing, glow, and work? How do they scale? And how do they grow both pestilence and politics around them?

Of the many qualities connecting across, like runners or tethers, the myriad forms of insect life, scale may be one of the most primary and primal. I explore the *lesser* of the lesser living creatures on offer in Moffett's *Theater of Insects* and more broadly represented by early modern insectophilia. It seems of late that scale becomes more important only across a wide range of disciplines and subjects. Given that scale is a core comparative and evaluative impulse that works through forms of speculative modeling, the reach of notions of scale should be no surprise. In "Lesser Living in the Renaissance," after surveying the various uses of scale, which most often refer to great sweeps of distance and time, I explore the importance of relative magnitude, from scales of measure that evoke the heft and importance of objects to broad shifts in size, from microscopic to macroscopic. In so doing, I consider the frequent articulation of a *diminutive sublime*, from Moffett to Robert Hooke, expressed in the celebration of the wonders of small things that serves to stabilize disorienting sweeps of scale that not only upend the

centrality of the human but also, more importantly, call into question the certainty of measure and consequently fuel a longing for ever more powerful and stabilizing technologies of measure and magnification.

Ever since Aristotle introduced the notion of the political animal, he left open the question of what creatures might qualify. And while “human” has always been the most common answer, several insect species have been claimants to the title. Andrew Fleck’s “‘Regardless of his gouvernance’: Exploring Human Sovereignty and Political Formation in Early Modern Insect Habitats” ties these ancient questions of creaturely polity and community to early modern reflections on habitat. “Peering into the dwellings of insects to find examples of the supposedly natural order of society,” he argues, “early modern thinkers imported their own prejudices into their artificial imaginings of these habitats, confirming their own sense of what makes it possible for individuals to live in harmonious, efficient community.” More particularly, Fleck considers “the early modern politicization of the spider web and the butterfly’s garden field” from John Heywood’s *Spider and the Flie* to Edmund Spenser’s *Muiopotmos*. And in this fascinating journey from web to garden, Fleck exposes forms of insect-inflected thought about liberty and jurisdiction.

To be “Consuming Insects” with Amy L. Tigner is to consider one of the more prominent, if less often discussed, aspects of natural history. Since the whole world of creation existed for the benefit of humankind, that benefit stretched from education to alimentation, explaining why so many natural history texts include the manifold medicinal uses of the bodies of animals and insects. For cultures unaccustomed to eating insects, it requires some reminding that “bees, flies, worms and beetles occur regularly as ingredients in household recipes.” This causes a radical reevaluation of what might otherwise be nuisance species, since “within the household kitchen these minute nonhumans were highly esteemed for their particular culinary, medicinal, and even aesthetic value.” Tigner’s study of early modern recipe books reveals what she calls “the pragmatic intimacy of consumption” whereby the utility of insects in early modern food and medicine implies a kind of mutual incorporation “between human body and insect body, manifesting as a kind of circular table—each acting in turn as eater and eaten.” And by highlighting the importance of the culinary theater to the theater of insects, Tigner also emphasizes the importance of women to how we

understand insect life, which was by no means merely the province of men of science.

If for Tigner the perhaps to some grotesque intimacy with insects reveals a culture of mutual benefit, Lucinda Cole's "Out of Africa: Locust Infestation, Universal History, and the Early Modern Theological Imaginary" builds powerfully on her award-winning monograph, *Imperfect Creatures: Vermin, Literature, and the Sciences of Life, 1550–1750*, to consider the terrifying and literally border-crossing nature of swarms. A series of insect events in the era "kept the problem of transnational infestation at the forefront of a wide range of discussions about the typological meanings of, and remedies for, swarming things that threatened the ecological and sociopolitical stability of the state." Cole reveals just how fascinating these terrifying events were inasmuch as they connected a range of early modern discourses, from ethnography to natural history. Moffett's *Theater of Insects* should be read not only in light of early modern scientific discourse but also in light of universal history and theodicy. As such, "infestation reappears as a form of personal and political infection, in contrast to Judeo-Christian agricultural practices that supposedly offer a real but always precarious protection." Consequently, attention to insect infestations, especially locusts, fueled burgeoning colonial impulses: "God instructs Christians to rid Africa and India of the insects that serve as both evidence of these regions' need for colonial intervention and signs of their sins in resisting a different and divinely sanctioned regime." The consequence of this stunning analysis is to widen the geography of an early modern theater of insects while understanding these lesser living creatures to be "deeply entangled in theologically inflected arguments about punishment and mercy, diet and disease, self and other."

Swarms terrified and destroyed, but could they also sing? Bees were not the only mellifluous insect, but the sound Derek Woods listens for in "Song of the Swarm" is "the relation between the concepts of swarming and communication—among humans, among bees and other social insects, and between humans and bees." The concept of the swarm, from early modern insect lore to contemporary computing technologies, considers "the paradox of swarming," which concerns a "distinction between control by a subject and order that emerges from interaction among simple elements." Moving deftly between "bee song in works of Renaissance natural history" and "Karl von Frisch's famous work . . . on

the bee dance language,” Woods finds the connection between seemingly disparate centuries in information theory. How, then, to reconcile the logic of sovereignty associated with hives and “decentered communication” typical of the swarm? Perhaps there is no such reconciliation. But rather than understanding the long transit of thinking about swarm from a sovereignty-inflected early modernity to a decentered postmodernity, Woods tracks a much more complicated dance. In so doing, he suggests the importance of the “life-form topos,” a way of recognizing how “life-forms come into being as material-semiotic entities that occupy a level of partial abstraction between concrete species and individual, on the one hand, and metaphysical distinctions such as human/animal, on the other.” These topoi, Woods argues, “are an expansive subject for those interested in studying the relatively deep historical timescales of literature and culture.”

If for Tigner the pestilence associated with insects belies their medicinal value in the home economics of early modernity, for Jennifer Munroe and Rebecca Laroche, the moniker *pest* assiduously denies what they call “our shared susceptibilities with creeping things and with each other.” In “Environmental Justice and the (Early Modern) Rhetoric of Pest Control,” Munroe and Laroche examine the gendered, militaristic language used to “keep” not only insects “at bay” but any sense of common vulnerability. In this chapter, as in several others in this volume, Munroe and Laroche move deftly between early modern and present-day concerns, showing how these long-standing languages of pest control precondition our own responses to insects and also in ways that “pertain to twenty-first-century environmental justice as well.” From this point of view, the most common early modern invaders relevant to this rubric were the omnipresent ants and lice, which align in battalions, seeking vulnerable homes, gardens, and bodies. Husbandry manuals and natural history texts alike would construe insects as brute assailants and gardens as tender victims. Insects were, by nature, resistant to borders, and as such it was that tendency toward “boundlessness” that provoked anxieties and enhanced “an imperative for protection.” Munroe and Laroche identify the insidious “mobility of such creatures and the ambiguous boundaries they traverse . . . their blurring of ‘here’ and ‘there.’” In the masculinist language of pest control, two contradictory impulses coexisted: the necessary intimacy with the insect world and the consequent (and unrealizable) desire to reject and exclude such intimacy.

As is the case for Woods, communication is at the heart of Lowell Duckert's searching "Tettix," an essay in its etymological sense, that seeks, in six sections corresponding to the six-legged cicada, to understand the root of communication that concerns what is held in common and therefore related to ideas of community. His approach is not to query the capacities of insects, comparing them to capacities purportedly only humans enjoy in a game of comparative valuation. Rather, Duckert's goal is to ask, "not *whether* insects *can* speak but *why* they have been prevented from doing so, and, more important, *what* they would say *when* asked the 'right' questions." In a wide-ranging journey from the "cicada mania" of twenty-first-century West Virginia back to Ben Jonson's dismissal of "screaming grasshoppers," Duckert asks whether insects have gotten lost in a pernicious signal-noise distinction as creatures presumed to produce noise only because "language, however conceived, detrimentally dominates our questions of communication; logos has been the loudest speech impediment historically." Unlike Jonson, Moffett found the grasshopper sweet, encouraging his reader to "hearken" unto the mellifluous creature. Grasshoppers are not the only such singers, as attested to by bees, hornets, and other lesser living creatures. This intense and open act of listening pays dividends. Moffett "has been permitted to speak—theatricalize, that is—by his insect subjects," thus demanding we pay "greater attention to the speech-enabling parasitism of lesser things in stature, [thus troubling] anthro- and logo-centric dictation." One might say that Duckert, along with a few other contributors to this volume, might well add "grasshopper" or "bee" to the voluminous list of contributors to Moffett's *Theater of Insects*, a text that has neither a single author nor a single species behind it.

The drone was the exception that proved the rule of the bee's legendary work ethic. Ants too soldiered, literally and figuratively, for the common benefit. But these were not the only industrious ones among the lesser living creatures, as Frances E. Dolan's "Worm Work" clarifies. Her chapter takes up the fascinating dialectic of the earthworm and the silkworm, "one maligned as a consumer and destroyer and the other idealized as a paragon of both industry and artistry." Both creatures offer a window into the agricultural ambitions of the era in "the revival of soil amendment and composting and the attempt to establish a silk industry in colonial Virginia." Despite great interest in these apparently opposed worms, from Gervase Markham to Samuel Hartlib, a set of misperceptions prevailed in both the failure to recognize

how beneficial earthworms are for soil and in the unrealizable fantasies about the lucrative productivity of silkworms. As Dolan puts it, “However invested in soil amendment early moderns were, their quest to improve their soils was hampered by what they not only did not yet know but by the ways that their cultural associations with the earthworm impeded their knowledge and their observation, making it impossible to imagine the lowly and dirty worm as a central agent in creating fertile soils.” Thus, although today’s readers of such husbandry and natural history manuals are left to marvel at how much early modern writers were able to figure out about lesser living creatures without the aid of more recent technologies, there were also notable and impactful errors.

In the case of motion, or as Keith Botelho styles it in “Creeping and Crawling,” recent technologies, at least of the past few decades, turn to the movements of insects with fascination and with the hope of utility. What if our technologies might deploy insect mobility and morphology to human advantage? And yet in the age of Moffett, insectoid motions like creeping and crawling may have indicated a creature’s habitation as a denizen of the earth, but they also became the basis of a sense of human character anchored in creaturely choreography, which no doubt is why the likes of Marlowe, Shakespeare, and Donne anchored surreptitious, venomous, and other vile inclinations in patterns of movement that would at best indicate a descent from human up- and forthrightness. The norm for worms proves insidious in persons making earthly locomotion the inverse of a core principle of so much early modern entomology. The bee, which flits airborne from flower to flower gathering sweets and which mastered the architecture of rule in the infrastructure of the hive, served as a great mirror for human conduct. The creeping, crawling, slime-tracking creatures of the world offered primarily negative exempla, their utility residing not in technological but in moral realms. Not all insects creep or crawl; indeed, flight may represent a major and underexplored entomological division in early modernity. And yet those words bear a potent visceral trace of the insect world that so captivated Moffett, as if behind each is visible a track of slime or as if to invoke them is to burrow in the fecund earth.

Death may lack its sting in the wake of the beneficence of Christ, but insects did not. Julian Yates’s “Stinging like a Bee in Early Modern England” considers that iconic, if not universal, feature of insect

life. To be sure, not all insects possessed a sting, and indeed there was some debate about whether all bees, say, had a sting. But in Yates's chapter, a sting is not the differentiating feature of one species but a kind of nexus or an incitement to sting effects that draw a range of creatures and objects into odd alignments and assemblages. Thus, the real subject of the chapter is "how the action of a bee sting on human skin was understood in Tudor England." The fascinating story of that trace follows Thomas Penny and Moffett back to the early modern home of physicians and natural historians, Lime Street, "a node or hub that concentrated multiple orders of expertise, technical know-how, and forms of evidence, and which, accordingly, was able to produce significant orders of knowledge and expertise." Moffett and Penny's conjectures, their attempt to write the story of "sting," was in fact a way of being written as they tried to understand the implications of sting not just for animal anatomy but for political sovereignty. The series of interchanges enabled by the sting indicates that "the emerging discourses of sixteenth-century England as a field science that necessarily functions also as a conceptual trading zone between natural history and political economy."

Some insects burrow, some bite, some swoop, some sting. Sometimes they even glow. Even as natural history tried to decipher the book of nature, many of its passages would not yet be cracked. Reproduction, for instance, drove various authors to flights of imaginative speculation. As Jessica Lynn Wolfe indicates in her wide-ranging "Living Lamps," "bioluminescence was poorly understood during the Renaissance, but no less compelling for its mysteriousness." Certainly authorities of the era like Ulisse Aldrovandi, Robert Boyle, Robert Plot, and Thomas Bartholin attempted to delve into the mysteries of these living lamps, and as Wolfe also indicates, their interest "was almost certainly sparked by various reports of luminous insects in the new world." Whatever the source, the consequences of that fascination were myriad. For Thomas Browne, living lamps suggested something he called "vivency, the conditions and requisites for the maintenance of life." For Thomas Heyrick, it was the insect's "capacity to elucidate, in miniature form, the macrocosmic processes at work in the sky." And for the Royal Society? The secrets of oxygen itself.

To open the book of nature to the chapters on lesser living creatures is to consider the revelatory capacities of tiny lives flickering in and out

of perception, capturing our attention, and lighting the way to mysteries wondrous to behold.

Notes

1. Hive is available at <https://gen42.com/games/hive>.
2. Purchas, *Theatre of Politicall Flying-Insects*, sig. A3.
3. Williams, *Keywords*, xxvii.
4. Greene, *Five Words*, 1. For an extension of this method, see the special online colloquy “Critical Semantics.”
5. Brown, *Insect Poetics*, 29.

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