"Swarm Life" and the Biology of *War and Peace*

Thomas Newlin

"Have been looking through my papers," Lev Tolstoi noted in his diary on 23 February 1863, "—a swarm of thoughts and a return, or an attempt at a return, to lyricism."[1] For Tolstoi, 1863 would be a quietly momentous year, at times blissfully lyrical, at other times excruciatingly prosaic. It was a year marked, moreover, by a particularly charged kind of artistic and biological gestation, labor, and birth—and by the incessant swarming not only of thoughts but also, not coincidentally, of actual bees.

Exactly five months earlier, on 23 September 1862, Tolstoi had gotten married, and his eighteen-year-old wife Sonia (Sofia Andreevna Tolstaia, née Behrs) was already more than four months pregnant at the time of the diary entry. The couple had been ensconced since early February at Iasnaia Poliana, Tolstoy's ancestral home; both were, in a sense, with child. "Lyova has started writing a novel," Sonia wrote to her sister just two days after his "swarm of thoughts" comment.[2] A fortnight later Tolstoi echoed her in a letter to his own sister: "Happy man that I am, I live, I listen to the kicking of the child in Sonia's womb, I'm writing a novel and some stories and getting ready to build a distillery."[3] The novel that was just beginning to kick away in Tolstoi's imagination would eventually become *War and Peace*. A mere embryo at this point, it would require much longer than nine months to come to term and would turn out not to be a novel at all, but something odd and distinctly sui generis—"what the author wanted to and was able to express," as he would cantankerously put it later on, "in the form in which it is expressed."[4]

In seeming to conflate Sonia's condition (with child) with his own (with novel), Tolstoi not only suggests a certain shared creative and biological imperative, but also provides an intimation of the ultimate shape

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1. Lev Tolstoi, *Polnoe sobranie sochinenii,* 90 vols. (Moscow, 1928–1958; hereafter *PSS*). Translation (slightly amended) from R. F. Christian, ed. and trans., *Tolstoy's Diaries* (New York, 1985), 1:176. References to *War and Peace* will be by book, part, and chapter. In quoting from *War and Peace,* I use the translation by Richard Pevear and Larissa Volokhonsky (New York, 2007), precisely because it is the most literal; at times, however, I have made slight emendations.

2. N. N. Gusev, *Lev Nikolaevich Tolstoi: Materialy k biografii s 1855 po 1869 god* (Moscow, 1957), 597.

3. Tolstoi, *PSS,* 61:7.

4. Ibid., 16:7.

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and feel of his work in progress. Like Henry James, who famously and squeamishly referred to *War and Peace* as "a large, loose, baggy monster," most readers sense the peculiar, pregnant aliveness of the work: in its outsized vitality it strikes us as an attempt at a round, three-dimensional embodiment of life in all its fullness rather than a flat reflection of it.[5] That said, it is hard to put one's finger on what makes the work feel so alive, so organic and organismic. It seems to me that it is time to push beyond these intuitive responses and take a closer look at the nature and origins of what Donna Orwin has suggestively referred to as the "biological thinking underlying *War and Peace.*"[6]

I believe that Tolstoi's "biological thinking," as well as what we might call, more loosely, the overall biological *quality* of *War and Peace,* had its genesis right at home, in the "swarm life" of Iasnaia Poliana. Scholars frequently invoke Tolstoi's concept of "swarm life" (*roevaia zhizn'*) but seldom probe its meaning or origins very deeply. Orwin equates it squarely with the political, as opposed to private, realm: "We are not ultimately responsible for what happens in the 'swarm,' or political, life of mankind, although we must participate in it; but we are responsible for our private lives, which Tolstoy took some trouble to separate from 'swarm' life."[7] While her interpretation would seem to hew closely to what Tolstoi himself says in *War and Peace,* it stabilizes and boxes in a suggestively volatile metaphor.[8] I would venture a more fluid and capacious understanding on Tolstoi's part of "swarm life," one that specifically includes private life and is closely connected with the "general" "zoological laws" that men and women, according to Tolstoi, unconsciously fulfill in "pursuing their own personal goals," and whereby "families fulfill their appointed end [*naznachenie*]: the continuation of the human species."[9] In 1863 in particular, and then throughout the 1860s, when he was first married and was writing *War and Peace,* Tolstoi found himself suddenly "subjected," per-

5. Henry James, preface (1908) to *The Tragic Muse* (New York, 1908), 1:x. Rimvydas Silbajoris has suggested that "we . . . can see the novel growing and rising in our mind's eye like some giant organism that was born, so to speak, in the grass, down among the simplest family events where all things must start" and that "the novel can be regarded as an organism that has embedded in each of its detailed substructures the whole DNA code, as if it were a body cell." Rimvydas Silbajoris, War and Peace: *Tolstoy's Mirror of the World* (New York, 1995), 36, 37. Caryl Emerson has likewise noted that in Tolstoi's novels "Nature and natural processes of maturation play a prominent role; the novels spread out in a biologically rooted way." Emerson, "*Anna Karenina* in the Literary Traditions of Russia and the West: Tolstoy versus Dostoevsky and Bakhtin's Ethics of the Classroom," in Liza Knapp and Amy Mandelker, eds., *Approaches to Teaching Tolstoy's* Anna Karenina (New York, 2003), 105.

6. Donna Tussing Orwin, *Tolstoy's Art and Thought, 1847–1880* (Princeton, 1993), 103.

7. Ibid., 104. My own interpretation is closer to that of Gary Saul Morson, who equates "swarm life" with the "countless, small daily actions, hidden in plain view" that according to Tolstoi "make history." See Morson, *Hidden in Plain View: Narrative and Creative Potentials in* War and Peace (Stanford, 1987), 126–27.

8. Tolstoi writes: "There are two sides to each man's life: his personal life, which is the more free the more abstract his interests, and his elemental swarm life, where man inevitably fulfills the laws prescribed for him." *War and Peace,* 3:1:1.

9. Notebook No. 3, 25 October 1868, *PSS,* 48:107–8. I discuss this notebook entry in greater detail later on.

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force, to these "zoological laws" and came face to face in a startling and discomfiting way with the biological reality of his own swarm life—that is, with marriage, with "lawful" sex (to paraphrase Aleksandr Pushkin), and then, in due order, with pregnancies, births and miscarriages, babies, breast-feeding, diapers, and childhood illnesses and deaths.[10] Tolstoi seems to have dealt with the shock of this biologically driven "swarm life" in part by co-opting it, brilliantly and opportunistically, for his own artistic purposes—that is, by exploring it, depicting it, and, despite bouts of acute ambivalence, celebrating it in *War and Peace,* which Olga Matich has described as "the nineteenth century's unsurpassed monument to procreation and nature's vital force."[11]

He also dealt with his own swarm life by turning his attention to the swarm life of bees. Somewhat surprisingly, literary scholars, evidently more comfortable with the rarefied realm of texts and ideas than the grubby details of Tolstoi's agricultural pursuits, have had virtually nothing to say about the fact that Tolstoi took up beekeeping, with a vengeance, in the spring of 1863—that is, at precisely the same time *War and Peace* began taking shape in his imagination. While his "bee passion" (*pchelinaia okhota*) was in practical terms relatively short-lived (he more or less abandoned it after two years), it was by all accounts an exceptionally intense engagement with a miniaturized and uniquely observable biological and social universe.[12] This article will explore how Tolstoi's dual enmeshment in "swarm life"—his simultaneous initiation into the biologically fraught realms of marriage and beekeeping—might have influenced both the unconventional form of *War and Peace* and its equally unconventional ideas.

In writing his non-novel, Tolstoi, like Charles Darwin a few years earlier in his seminal *On the Origin of Species* (1859), was striving to give shape to a radically new type of natural history, one in which, as Gary Saul Morson puts it, "loose governing principles operate in the background and contingent events in the foreground."[13] In searching for a more natural,

10. Tolstoi's sex life up until his marriage had been with prostitutes, demimonde *grizetki,* and various gypsy, Cossack, and peasant women; this history is recorded, elliptically, in his early diaries. See V. A. Zhdanov, *Liubov' v zhizni L'va Tolstogo* (1928; reprint, Moscow, 1993), 12–38; Hugh McLean, "'Buried as a Writer and as a Man': The Puzzle of Family Happiness," *In Quest of Tolstoy* (Boston, 2008), esp. 15–20.

11. Olga Matich, *Erotic Utopia: The Decadent Imagination in Russia's Fin de Siècle* (Madison, 2005), 29.

12. *Pchelinaia okhota* is the term that Tolstoi uses for Levin's newfound fascination with bees at the end of *Anna Karenina;* the scenes dealing with bees are clearly autobiographical.

13. Gary Saul Morson, "Contingency and Freedom, Prosaics and Process," *New Literary History* 29, no. 4 (Autumn 1998): 676; and Morson, "Narrativeness," *New Literary History* 34, no. 1 (Winter 2003): 65–67. As far as I know, Morson is the first scholar to note the striking affinities between Darwin and Tolstoi (who would later vigorously distance himself from the English scientist). The history of Tolstoi's testy and often ill-informed views on Darwin has until recently received scant attention. Hugh McLean's bracing and wide-ranging "Claws on the Behind: Tolstoy and Darwin," *In Quest of Tolstoy,* 159–80, goes a long way toward rectifying this neglect and trenchantly summarizes the more direct ways that Darwin's ideas filtered into Russia and the Russian consciousness after 1859. McLean focuses most of his attention, legitimately enough, on the period from the 1870s on, when

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supple, and adequately capacious form for this new kind of history writing, Tolstoi found a potently suggestive live model close at hand: his teeming hives of bees. If Darwin closes *Origin of Species* with what is arguably the central metaphor of the book—the "entangled bank" that embodies in microcosm the vast "web of complex relations" and the ongoing war ("struggle") and overarching peace inherent in nature, Tolstoi offers up an equally suggestive metaphor toward the end of his own extended exercise in "natural" history writing: that throbbing globe—an infinite universe of moving droplets that expand, shrink, merge, divide, disappear—that Pierre beholds in his third and final dream.[14] This globe is a microcosmic image not only of life ("'This is life,' said the old teacher") but also of the analogous ways that the human mind and history (both human and nonhuman) work. No less important, it is a striking figuration of *War and Peace* itself, of its strange, pulsating shape and logic as a work of art. While abstracted in its final form, the globe image had concrete origins, I would argue, in the beehives Tolstoi began tending in 1863.

Yet even as *War and Peace* gestures toward a more natural, "hive" form, it necessarily remains, like all history writing, an act of artifice: it can simulate life but not replicate it. I will speculate here on the ways that modern or so-called rational beekeeping, which was coming of age in Russia as Tolstoi was writing *War and Peace,* might have helped him negotiate the tension between his desire for more natural, organic forms of expression and an ongoing need for frames or "artifices" that would allow him, artistically, to contain, order, and make sense of life. Tolstoi's dalliance with beekeeping, I maintain, helped him to imagine and give shape to a work that achieves a unique formal balance between expansion and containment, expression and compression, indivisibility and divisibility, "roundness" (one of the central motifs of the work) and "squareness."

The hive or swarm form (*roevaia forma*) of *War and Peace* is linked to—and commensurate with—the book's radical reconceptualization of history and consciousness. If "thoughts" (*mysli*) "swarm," as Tolstoi suggests several times in his diaries from this period, so too do the events, large and small, that make up history, its myriad "infinitesimals." Yet if Tolstoi's "contemplation of bees, ants, and herds helped him to frame his own philosophical discourse about freedom and necessity," as Robin

Tolstoi began making frequent and unambiguously hostile pronouncements about Darwin. The impact (direct or indirect) that Darwin's ideas might have had on Tolstoi as he wrote *War and Peace* in the 1860s still awaits further investigation.

14. Tolstoi, *War and Peace,* 4:3:15. See Charles Darwin, *On the Origin of Species* (London, 1859), chap. 3, "Struggle for Existence." See also his comments on the "inextricable web of affinities" in nature in chap. 13 ("Mutual Affinities of Organic Beings"). For a provocative discussion of the "tangled bank" metaphor and Darwin's notion of a "web of affinities," see Gillian Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth Century Fiction,* 2d ed. (Cambridge, Eng., 2000), 156–59, 19. Like Darwin, Tolstoi relied extensively on metaphor and analogy to create his own more "natural" (and inherently unstable) version of history; Beer's penetrating comments strike me as very relevant for understanding *War and Peace.* Beer, "Analogy, Metaphor and Narrative in *The Origin,*" *Darwin's Plots,* 73–96.

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Feuer Miller proposes in a recent essay, the implications of a "swarm" model of history ultimately proved problematic for him, and while for the most part he did not let these doubts play themselves out fully in *War and Peace,* his unease lurks beneath its surface.[15] As early as the 1860s this newly anointed family man was questioning the "zoological laws" that determined the life he was living and celebrating.

Husbandry

It is Sofia Andreevna who first mentions Tolstoi's bees: "We are turning into real landowners," she wrote to her sister on 13 February 1863, "we buy up cattle, poultry, pigs, calves. When you come I'll show you everything. We're buying bees from the Islen'evs. You eat the honey, I don't want it [*Medu—esh' ne khochu*]."[16] In her diary for 6 April she noted: "He has bought some bees, which pleases me very much; managing the estate is interesting, but hard work too."[17] The initial pleasure she felt about her husband's new hobby seems to have given way fairly quickly, however, to feelings of resentment and abandonment, as the short section titled "Bees" in her memoirs attests:

> That spring Lev Nikolaevich became passionately involved in bees. He bought several hives from my grandfather Islen'ev, read various books, made frame hives, and acted as though the apiary was the center of the universe for him, so consequently everyone should be interested exclusively in bees. I tried to fathom the full significance of bee life [*proniknut'sia vsei znachitel'nost'iu pchelinoi zhizni*], but found it difficult. . . . The bees took Lev Nikolaevich away from home and from me, and I was often sad and bored and even cried in my loneliness. I'd go to the apiary, sometimes I'd bring Lev Nikolaevich lunch myself, I'd sit there for a bit, sometimes a bee would sting me, and I'd head home alone.[18]

Her frustration was not merely retrospective: her diary entries in the spring of 1863 convey the same aggrieved sense of bewidowment in the face of Lev Nikolaevich's new pastime and his apparent indifference to her in her pregnant state: "I desperately want to go out and look at the bees and the apple trees and the work on the estate, I want to be active, but I am heavy and tired . . . It's infuriating . . . Lyova ignores me more and

15. Robin Feuer Miller, "Tolstoy's Peaceable Kingdom," in Donna Orwin, ed., *Anniversary Essays on Tolstoy* (Cambridge, Eng., 2010), 66.

16. "Tolstoi v pis'makh rodnykh i blizkikh," *Iasnopolianskii sbornik* (Tula, 1976), 158.

17. S. A. Tolstaia, *The Diaries of Sophia Tolstoy,* trans. Cathy Porter (New York, 1985), 16. Tolstoi himself first mention his bees in a letter to Afanasii Fet in the first week of May 1863: "I have bees, sheep, a new orchard, and a distillery. It's all going along well enough, though of course poorly compared with the ideal" (*PSS,* 61:17); translation (amended) from *Tolstoy's Letters,* vol. 1, *1828–1879,* ed. and trans. R. F. Christian (New York, 1978), 180.

18. S. A. Tolstaia, *Moia zhizn',* from excerpts published in *Novyi mir,* no. 8 (1978): 39; translation (substantially amended) from Sofia Andreevna Tolstaya, *My Life,* ed. Andrew Donskov, trans. John Woodsworth and Arkadii Klioutchanski (Ottawa, 2010), 91. A complete Russian edition of *Moia zhizn'* is forthcoming.

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more. The physical side of love is very important for him. This is terrible, for me it's quite the opposite."[19]

The alternately recriminatory and self-flagellating diary entries of both partners during this period show that those first months of "swarm life" at Iasnaia Poliana were brimming with tensions. Sonia was all of eighteen, a city girl who had never lived away from home and suddenly found herself ensconced in a primitively appointed house, far out in the countryside, with a brilliant, moody, and strong-willed man whom she barely knew. She was soon pregnant to boot, and had to put up with daily reminders of her husband's past passions: Tolstoi's erstwhile peasant mistress lived at Iasnaia Poliana and was nursing Tolstoi's bastard son when Sonia arrived there in the fall of 1862. Tolstoi, at thirty-four, was both much more worldly and much more set in his ways, and had never lived at close quarters in a sustained emotional and physical partnership with another human being. Marriage was doubtless a shock for them both. Each of them suffered from bouts of acute existential claustrophobia, and he struggled to adjust to the sudden intrusion of what he called "Capuan" values and material comforts (bed linens, pillows, rugs, and so on) into his rough-hewn male world.[20] He was also beginning to work out his highly idiosyncratic views regarding sex and pregnancy—views that would resurface in more dogmatic form later in his life. As Sonia would soon find out, Tolstoi already had set ideas about breast-feeding, but it is less clear whether he had decided at this point that "non-abstinence during pregnancy and nursing" was harmful and unnatural, as he would claim decades later in his "Postlude" to *The Kreutzer Sonata* (1889). Sonia's complaint that he ignored her but that "the physical side of love" was "very important to him" hints at the confused nature of his emotions that winter and spring: he already suffered from an acute sense of ambivalence, both visceral and ideological, about sex in general and sex during pregnancy in particular, but was at the same time bedeviled by desire.

The famous "china doll" letter that he wrote that spring, describing a supposed dream he had in which Sonia shrinks into a porcelain statuette that he then tucks away in a felt-lined box, reflects his intense procreative and creative anxieties during this period. The letter is not so much

19. Tolstaia, *Diaries of Sophia Tolstoy,* 18 (19 April 1863). See also 8 May: "It's a cruel truth that a wife only discovers whether her husband really loves her or not when she is pregnant. He has gone to the beehives and I would give anything to go too but I will not, because I have been having bad palpitations and it is difficult to sit down there, and there will be a thunderstorm any moment, and my head aches and I feel bored, and I do not want him to see me in this tedious and unpleasant state, especially as he is ill too" (18). Sonia's younger sister Tania, who spent much of that first spring with the newlyweds, provides corroborating evidence of the obsessive nature of Tolstoi's "bee passion," recounting that he "devoted a great deal of time to the apiary" and would "put on a net over his head and spend hours on end studying the life of bees." Pavel Ivanovich Biriukov, *L. N Tolstoi: Biografiia* (Moscow, 1908), 2:14. See also Tolstaya, *My Life,* 100, for another vivid passage detailing his intense involvement with bees.

20. The term *Capuan* was Tolstoi's own neologism and could be roughly translated as "sybaritic." Levin uses the term in *Anna Karenina* (pt. 5, chap. 15); see the commentary on the word in L. N. Tolstoi, *Sobranie sochinenii v 22 tomakh* (Moscow, 1982), 9:451–52.

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a "peace offering," as Boris Eikhenbaum has suggested, as it is a kind of perverse wishful thinking on Tolstoi's part: it reads as an elaborate male fiction of female purity and untouchability, a preemptive attempt, cloaked in jocularity, to arrest biology and to objectify, contain, diminutivize, and desexualize his all too flesh-and-blood young wife, who was of course growing larger, not smaller, by the day.[21] It is also, perhaps, a subconscious expression of Tolstoi's artistic panic in the face of the immense but murky task that he was setting himself: to express and compress life itself, infinitely expansive, round, swarming—to hive it, as it were—between the box-like covers of a single book.

The gestation of this book that spring was slow and frustrating. By June 1863 Tolstoi's thoughts were once again "swarming," but the work that would eventually become *War and Peace* had yet to take shape in any concrete way; in fact he had barely put pen to paper.[22] On 18 June, just ten days before Sonia gave birth to their first child, he let loose a veritable howl of pent-up exasperation in his diary: "I've squandered, in a binge of farming [*v zapoe khoziastva*], nine irretrievable months that could have been the best of my life, but that I made almost the worst . . . I'm sitting down to write again for the third time. It's awful, terrible and absurd to link one's happiness with material conditions—a wife, children, health, wealth."[23] The full passage, which makes two more references to "nine months," suggests even more strongly that Tolstoi was in a state of creative couvade and was jealous of his fecund wife: she was about to deliver, he was not. It is not clear whether he lumped beekeeping into this fruitless nine-month "farming binge," during which he had also dabbled, with mixed success, in growing apples, cabbage, coffee, chicory, and fir trees, distilling vodka, and breeding sheep and pigs.[24] That same year, Tolstoi's friend Afanasii Fet, the famously ecstatic bard of nightingales who moonlighted as a hard-headed farmer, had started writing a collection of prose essays subtitled "Lyrical Farming." The two swapped letters about literature and farm management, but Tolstoi, despite yearning for a "return to lyricism," seems to have discovered very little of it in pigs and cabbages. Nor did Fet's German efficiency rub off on him. "Lyova is murderous," Sonia reported in her diary in late July, just a few weeks after the birth of their son. "He cannot run the estate—I'm not cut out for it, he says. He is restless."[25] Husbandry, animal and otherwise, seemed to oppress and appall him, and by August (judging from his diary) the brutally prosaic reality of his new "swarm life" had hit him full force: "To give up everything—not the

21. Boris Eikhenbaum, *Tolstoi in the Sixties,* trans. Duffield White (Ann Arbor, 1982), 111. While I do not agree with him in all details, Eikhenbaum's reading of the letter is extremely perceptive. Tolstoi's letter (addressed to Tania Behrs, but meant for the whole Behrs family) is dated 23 March 1863. *PSS,* 61:10–13.

22. Diary entry, 2 June 1863, *PSS,* 48:54: "Chitaiu Gete, i roiatsia mysli." On Tolstoi's difficulties in starting *War and Peace,* see Kathryn B. Feuer, *Tolstoy and the Genesis of* War and Peace, ed. Robin Feuer Miller and Donna Tussing Orwin (Ithaca, 1996), 39.

23. Tolstoi, *PSS,* 48:54–55; *Diaries,* ed. and trans. Christian, 178.

24. T. A. Kuzminskaya, *Tolstoy as I Knew Him: My Life at Home and at Yasnaya Polyana* (New York, 1948), 178–81 (translation of *Moia zhizn' doma i v Iasnoi Poliane,* 1927).

25. Diary entry, 23 July 1863. Tolstaia, *Diaries of Sophia Tolstoy,* 22.

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dissipated bachelor life at Dusseau's and mistresses like other married men, but the poetry of love and ideas and work for the people—and to exchange it all for the poetry of the family hearth and egotism with regard to everything except one's own family; and then to get instead the petty cares of a wayside inn, baby powder and preserves and grouchiness and nothing to brighten up family life, no love, no quiet proud family happiness. Just outbursts of tenderness, kisses, etc.! I'm terribly depressed."[26] Tolstoi was discovering that marriage made it utterly impossible to keep his personal life "abstract" and thus "free." Hemmed in by sex, babies, and biology, he was now—like it or not—conjoined with that "elemental swarm life, where man inevitably fulfills the laws prescribed for him."[27]

The Bee Brotherhood

So Tolstoi's "bee passion" was an escape both into and from "swarm life." The apiary at Iasnaia Poliana was a world apart, both physically and psychologically; indeed in many ways it calls to mind a fairy-tale kingdom. Located a mile or so from the house, just beyond the small Voronka River, it was nestled among some apple trees at the edge of an old forest referred to as the *zaseka,* a remnant of the heavily wooded zone that in ancient times stretched through Kaluga and Tula provinces and served as a defensive barrier against the Tartars.[28] According to his sister-in-law, on spring evenings in 1863 and 1864 Tolstoi would head off almost every day to the zaseka near the apiary to indulge in another consuming passion or *okhota:* the twilight hunting of roding woodcocks.[29] Though Tania would sometimes accompany Tolstoi on these outings, and though Sonia would bring him lunch at the apiary (only to be driven off, if we take her at her word, by stinging bees and by Tolstoi's no less stinging indifference), the realm beyond the Voronka was by and large a distinctly masculine domain. Tolstoi did much of the work in the apiary himself, but had two helpers, both male. One was an old peasant who "lived on the premises" and "had a long grey mane and a long grey beard and looked exactly like a character in the opera." The other was a cheerful peasant lad named Nikolka, who met a tragic and vaguely poetic end some years later by falling out of an apple tree.[30] Although a nursery of sorts in its own right, the apiary was well removed from the distasteful world of "baby powder and preserves," and for Tolstoi seems to have been a cross between a classical *locus amoenus,* with distinct pastoral-philosophical undertones, and the more rough-edged

26. Tolstoi, *PSS,* 48:56; *Diaries,* ed. and trans. Christian, 179.

27. In the drafts to part 2 of the Epilogue of *War and Peace,* Tolstoi notes the lack of freedom of "a family man" relative to a bachelor. *PSS,* 15:249. For "swarm life," see Tolstoi, *War and Peace,* 3:1:1.

28. Nina Nikitina, *Iasnaia Poliana: Puteshestvie s L'vom Tolstym* (Tula, 2002), 97–99, 151–53.

29. Biriukov, *L. N. Tolstoi,* 14: "He was interested in two things at that time: hunting woodcock and the apiary."

30. Kuzminskaya, *Tolstoy as I Knew Him,* 178. On Nikolka, see Tolstaia, *Moia zhizn',* excerpts published in *Oktiabr',* no. 9 (1998): 148; Tolstaya, *My Life,* 117.

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"distant field" (*ot"ezzhe pole*) that was the preferred bachelor getaway of Russian hunters.[31] Tolstoi has left us little in the way of a direct record, beyond occasional diary jottings, of what exactly crossed his mind during the many hours he spent in the "distant field" of the apiary during the spring and summer of 1863 and 1864, but it is clear that it was a refuge and laboratory for him, a site of unfettered and solitary inner work. Here he could commune quite literally with nature, far from his needy wife (and all "outbursts of tenderness, kisses, etc."), and indulge, hermit-like and God-like, in the biological-philosophical musings over "swarm life" that shaped his embryonic novel.

Tolstoi's fascination with social insects was long-standing and had always had distinctly utopian undertones. To fathom "the full significance of bee life" for Tolstoi we need to go back to that semimythic moment in his childhood when his eldest brother, Nikolai, announced to the five-year-old Lyovochka and his two other brothers that he was in possession of "a secret whereby, when it was revealed, all people would be made happy, there would be neither sickness nor squabbling, people would never get angry at each other and everyone would love each other, everyone would become ant brothers." Nikolai furthermore confided to them, with conspiratorial panache, that this secret "was written on a green stick [*zelenaia palochka*], and this stick was buried along the road at the edge of the ravine in the old Zakaz." Inspired by Nikolai's cozy vision of universal harmony, the four of them would play at "ant brothers" by huddling together under chairs covered with blankets and simply sitting quietly, "squeezed up against one another," in the darkness. "I remember," Tolstoi remarks, "that I experienced a special feeling of love and tenderness, and I very much loved this game." He speculates that "ant brothers" (*muraveinye brat'ia*) was a corruption of "Moravian brethren" (*Moravskie brat'ia*), and that Nikolai, "with his lively imagination," had also deliberately tossed in an admixture of freemasonic mysticism in cooking up the concept.[32] Eikhenbaum has suggested that the term is perhaps also connected to the Murav'ev brothers, who were both active Freemasons and important members of the Decembrist circle.[33] In any case, it would seem that a

31. The concept of the "distant field" seems to have been a touchstone of Tolstoi's artistic imagination. The term served as the title of a novel that he toyed with both in 1857 and then again, very briefly, in 1865; this work had close thematic and philosophical ties, as Kathryn Feuer has noted, with *War and Peace.* Feuer suggests furthermore that the phrase *ot"ezzhe pole,* while "primarily a hunting term, meaning a site so far from home that one has to spend the night there," at the same time implied "a spiritual removal from worldly concerns" and links it to Tolstoi's treatment of the "participation-withdrawal opposition." Feuer, *Tolstoy and the Genesis of* War and Peace, 38–39.

32. Tolstoi, *PSS,* 34:386.

33. Boris Eikhenbaum, *O proze: Sbornik statei,* ed. I. Iampol'skii (Leningrad, 1969), 431–38. On the ant brotherhood and Tolstoi's fascination with social insects, also see Feuer Miller, "Tolstoy's Peaceable Kingdom," 57–59. Tolstoi showed an interest in various popular-utopian tracts on bees and social insects. He read Jules Michelet's breathless and highflown volume *L'insecte* (Paris, 1858) when it was still hot off the press; the latter third of the book focuses on termites, ants, and bees. Tolstoi's reaction was tersely negative: "Finished *L'insecte.* Saccharine and fake [*Pritorno i pritvorno*]." Diary entry, 21 and 24 March 1858, *PSS,* 48:10–11. In 1864, at the very height of his bee obsession, he had

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rich stew of utopian schemes to reform the world (variously philosophical, religious, social, political) fed directly or indirectly into the notion of the "ant brotherhood"; some of them (Decembrism, Freemasonry) would find their way, years later, into *War and Peace.*

We can take Tolstoi's memories literally, or we can ascribe to him, more cynically and literarily, a certain amount of mythopoetic self-fashioning. But in either case the linked notions of the ant brotherhood and the green stick touch at the very wellsprings of his identity as an artist, thinker, and activist. In his mid-seventies, Tolstoi affirmed his abiding belief in "the ideal of the ant brothers clinging lovingly to each other—not just under two chairs draped with blankets, but under the whole canopy of the heavens that stretches over all the people of the world." He likewise expressed confidence in the existence and eventual revelation of that key "truth" (*istina*) concerning universal harmony and human happiness inscribed on the green stick; in fact he even asked to be buried in the zakaz at the selfsame spot where the green stick was supposedly hidden.[34] It might be said that the ant brotherhood and the green stick are metonymic stand-ins for the whole of nature, and for the implicit order and logic that for Tolstoi inhered in nature. Both notions are profoundly biological, yet at the same time strive to transcend biology: herein lies what is perhaps the central tension of Tolstoi's life and art. Tolstoi spent much of his life trying to recreate the pure and intimate sense of "love and tenderness" that he experienced in that huddle with his three brothers. Generally he met with only mixed success in this endeavor, as his bouts of existential despair in the spring of 1863 suggest: the "special feeling of love and tenderness" generated by the brotherly huddle degenerated all too often, in adult versions of "swarm life," into vaguely repulsive and sexualized "outbursts of tenderness, kisses, etc." But his lifelong quest for the second of these holy grails—the elusive green stick—was incredibly productive (if necessarily inconclusive) on an artistic level. For Tolstoi the green stick was a metaphor not only for nature as a whole but also, in a broad sense, for writing, both as a textual "product" and a process. That is to say, it represented not only Tolstoi's desire to uncover that harmonic truth or law that is "written" onto all of nature but also his paramount need to wield, instrumentally, a kind of natural, "green" pen, a pen that was at once primitively phallic and magically transcendent (*palochka* also means "wand").[35] His ultimate goal as an artist and writer was to reveal and transcribe into human language the truth inherent in nature. It is in this context, I believe, that he turned,

his sister-in-law Elizaveta Behrs translate parts of the essay "Bienenstaat" (1859), basically a political tract masquerading as popular science, by the German naturalist Karl Vogt, and tried unsuccessfully to get Mikhail Katkov to publish the translation: "The essay in its original form is marred by political illusions. There remains in the translation only an unusually lively disquisition on the natural history of bees, remarkable from both an artistic and a scientific perspective." *PSS* 61:57–58. Dmitrii Pisarev had already penned his own free rendition of the essay ("Pchely") in 1862 (first published in 1868); Pisarev sharpened (rather than excised) the original essay's political message.

34. Tolstoi, *PSS,* 34:386–87.

35. See my essay "Pisat′ zelenoi palochkoi: Tolstoi v poiskakh estestvennoi istorii," forthcoming in Damiano Rebecchini and Laura Rossi, eds., *Saggi su Tolstoj* (Milan, 2012).

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hopefully and perhaps naively, to the self-contained universe of bees: it held forth the tantalizing promise of revelation, of readability and decodability, of a door into nature's secret mansions.

Nineteenth-Century Russian Beekeeping

Tolstoi took up beekeeping precisely at a time when apiculture in both Russia and the west was undergoing profound changes. His views and practices as a beekeeper straddle two eras: he partook of certain aspects of the older, traditional, more natural form of beekeeping that had held sway in Russia since the pre-Mongol era, but was at the same time well-versed in the modern, rationalized approach that was rapidly gaining ground in Russia, Europe, and America by the second quarter of the nineteenth century.

Beekeeping in Russia was born in the forest, and for many centuries—indeed, for the better part of a millennium—the forest remained its sole domain.[36] The apiary at Iasnaia Poliana, located as it was at the edge of a section of ancient woodland (*zaseka*), may in fact have been a vestigial holdover from an earlier era of forest beekeeping on the estate. This more primitive form of apiculture, called *bortnichestvo* in Russian, took place high above the ground and involved climbing up into trees to harvest honey from the wild bees that nested there in natural or man-made cavities (*borti*). It was, by all accounts, an exacting, time-consuming, and dangerous business that involved fairly elaborate systems of access and management. The peasant-serfs who specialized in this type of beekeeping (*bortniki*) were skilled artisans who were in their own way deeply versed in forest ecology. While bortnichestvo took place on a very large scale in pre-Petrine Rus′ (honey and beeswax were important commodities in the medieval economy) and gave rise to a number of specific laws and protective statutes, it was essentially a form of organized foraging that took place in a wild or semiwild setting. Eventually, especially from the 1600s on, beekeeping was brought down from the treetops, and became, in effect, a form of domesticated agriculture. Forest beekeepers discovered that sections of tree trunk containing hives could be cut out and successfully reestablished on firm ground (and much closer to home); this gave rise to the so-called log hive (*koloda*) and to self-contained apiaries or beeyards

36. For a detailed general history of beekeeping, see Eva Crane's massive *World History of Beekeeping and Honey Hunting* (New York, 1999), esp. 226–37 (on traditional beekeeping in the northern forest zone, including Russia), and 405–23 (on the "rational improvements" that led to the moveable frame hive). The only detailed account in English of Russian beekeeping is Dorothy Galton's *A Survey of a Thousand Years of Beekeeping in Russia* (London, 1971); it is particularly useful for making sense of Russian beekeeping terminology. A. Pokorskii-Zhoravko's pioneering *Opyt istoricheskogo obzora razvitiia pchelovodstva v Rossii* (St. Petersburg, 1843) still contains a great deal of pertinent information on premodern and early nineteenth-century beekeeping in Russia, as does N. Vitvitskii's fascinating *Prakticheskoe pchelovodstvo,* 2d ed., 5 vols. (originally published in the 1830s–1840s; St. Petersburg, 1861), 3:1–40 and 4:95–143. I. A. Shabarshov's *Istoriia russkogo pchelovodstva* (Moscow, 1996) gives comprehensive accounts of traditional and rational beekeeping in Russia but unfortunately lacks any sort of scholarly apparatus.

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(as opposed to far-flung "bee forests") with groups of closely spaced and more easily managed hives. This was the type of beekeeping that Tolstoi's grey-bearded peasant helper had undoubtedly been practicing at Iasnaia Poliana since long before his master was born, and that Tolstoi depicts in some detail in chapter 15 of "A Landowner's Morning" (1856). According to Dorothy Galton the derelict hive that Tolstoi famously compares to abandoned Moscow in *War and Peace* is likewise an upright koloda.[37] So too are the "old hives"—each strapped with bast to a stake, each "with its own history"—that Levin contemplates in his apiary in *Anna Karenina* (bk. 8, chap. 14).

In "A Landowner's Morning," Tolstoi invites his readers to view with skepticism the enthusiasm of Nekhliudov (a younger version of himself) for newer, western beekeeping methods. The apiary he depicts so lovingly in this novella, with its "intimate, joyful, quiet, luminous" atmosphere, is probably modeled on the old Iasnaia Poliana beeyard. It is a manifestly holy space, one that the earnest but impetuous young master is not yet fully ready to enter (he foolishly refuses, out of pride, to put a net over his head). As he swats away comically at the stinging bees, Nekhliudov, eager to show off his knowledge, tries to lecture the calm old beekeeper about a new type of box hive with cross-pieces (*ul'ia iz dosok . . . s perekladin[ami]*) that he read about in a French publication called "Maison rustique" and that induces bees to build their combs vertically. But the old man gently brushes aside his bookish theories, cheerfully suggesting instead that the bees know best how to arrange their own home and that we should learn from them rather than trying to teach or control them.[38]

But Tolstoi's youthful curiosity about rational beekeeping did not dissipate entirely. In the apiary scene in *Anna Karenina,* Tolstoi mentions, in addition to the kolody, certain new or "young" hives, situated along a wattle fence, that Levin had started that spring. He says nothing more about them, but if this apiary scene is indeed based (as I believe it is) on his dalliance with bees from 1863 to 1865, then these young hives are almost surely the new "frame hives" (*ramochnye ul'i*) that came into use in Russia in the 1850s and 1860s—and that were an apicultural analogue to the newfangled, western farming methods that Levin experiments with and then rejects in *Anna Karenina.* It will be recalled that Sofia Andreevna mentions in her memoirs that Tolstoi made "frame hives," and it is likewise clear from a note Tolstoi sent from the apiary in the summer of 1863 or 1864 that he was using frame hives of some sort.[39] A letter he wrote to a

37. Dorothy Galton, "Tolstoy and Beekeeping" (tape-recorded lecture, December 1984, Leeds Russian Archive, Brotherton Special Collection, Leeds University Library, MS 927/3).

38. Tolstoi, *PSS,* 4:159–61. Vol. 3, *Arts agricoles,* of *Maison rustique du XIX siècle: Encyclopédie d'agriculture practique,* ed. M. Malepeyre ainé (Paris, 1839) contains a 20-page chapter on bees ("Education des abeilles"). Evidently Nekhliudov (that is, Tolstoi) had in mind the box hives with rudimentary dividers described on pp. 161–62 of this volume. The old beekeeper's views on "bee education" and who should teach whom would seem to prefigure Tolstoi's conclusions in his 1862 essay "Who Should Learn to Write from Whom: The Peasant Children from Us, or We from the Peasant Children?"

39. "Three have swarmed. Need more frames, the more the better. I'm sending ones that haven't been glued up. . . . I have four empty frames, but not a single sheet of glass.

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beekeeping neighbor, Ivan Raevskii, on 11 May 1863, indicates that these were almost certainly the so-called Dolinovskii hives, which at the time were brand new in Russia. "When your fellow came by I told them to get the hive ready and that there'd be a letter and a package as well, but they misunderstood me and sent him off empty-handed in the morning. I was also going to send two beekeeping manuals, but that's no real loss, they're both junk. The best one in my opinion is a little book by Adam Mechinskii 'On the Frame Hive,' you should buy it. I need mine."[40] The "little book" (*knizhka*) that receives his stamp of approval was actually a translation into Russian, by Mechinskii, of the Polish pastor Johann Dolinovskii's 300-page apicultural treatise *The Basics of Beekeeping, as Adapted to the Frame Hive System.*[41] This was the volume that evidently served as Tolstoi's primary guide to the "swarm life" of bees.

The Book Hive and the Drawers of Consciousness

Dolinovskii's system, and a number of other systems like it, were based on the principle of movable frames of comb, of a standardized size, arranged like hanging files in stacked or abutting boxes; with the help of a little smoke to calm the bees, these frames could be pulled out at will for inspection, honey-gathering, or hive division or expansion. The frame hive had been developed by trial and error over a period of many decades in Europe, Russia, and America, after various beekeepers came to the realization that if they consistently maintained a spacing of three-eights of an inch between combs and between the combs and hive walls (the "bee space"), bees would not fill in these gaps with wax or propolis. Traditional "fixed comb hives" such as log hives were, by contrast, monolithic: they often had little doorways for access and observation and were sometimes cut up into conjoined sections, but to extract honey the beekeeper had to carve out chunks of comb with a knife.[42]

Dolinovskii describes his system as a refinement of the approach of

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My head aches. Send a horse or come fetch me before lunch." Diary entry, mid-May to early June 1863 or 1864, *PSS,* 83:34–35.

40. Tolstoi, *PSS,* 61:18.

41. Ioann Dolinovskii, *Nachala pchelovodstva, primenennye k ustroistvu ramochnogo ul'ia* (St. Petersburg, 1861). Since this book is not listed among the books preserved in the library at Iasnaia Poliana, perhaps he lent it out after all. It is likely that the two other bee books there are the volumes he passes off as "junk": Mikhail Sergeevich Novlianskii, *O razvedenii i soderzhanii pchel po metode Prokopovicha* (Moscow, 1856); and Vil'gel'm Ivanovich Krauze, *Rukovodstvo k teoreticheskomu i prakticheskomu pchelovodstvu* (Moscow, 1860). See *Biblioteka L'va Nikolaevicha Tolstogo v Iasnoi Poliane,* vol. 1 (Moscow, 1972), 387 (no. 1594) and vol. 2 (Moscow, 1975), 69 (no. 2179); also I. Shabarshov, "Eti knigi chital L. Tolstoi," *Pchelovodstvo,* no. 5 (May 1971): 45–46. Shabarshov appears to be the first person to note that Tolstoi used the Dolinovskii hive system in addition to log hives; see his earlier article, "Mir pchel v zhizni L'va Tolstogo," *Pchelovodstvo,* no. 11 (November 1960): 57. Tolstoi seems to have been unaware of Vitvitskii's magisterial and unconventional *Prakticheskoe pchelovodstvo.* Vitvitskii advocated an updated version of treetop apiculture (*bortnichestvo*); his traditional yet presciently ecological approach to beekeeping would probably have resonated with Tolstoi. See Vitvitskii, *Prakticheskoe pchelovodstvo,* 4:144–76, 179–207, and vol. 5.

42. Though it was considered poor beekeeping, it was common to exterminate whole hives by smoking or drowning just to obtain the honey.

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the Swiss naturalist François Huber (1750–1831), whose seminal work *Nouvelles observations sur les abeilles* laid the foundation for modern beekeeping. Huber, who was blind, invented what he called a "leaf" or "book hive" (*ruche à feuillets, ruche en livre*), which he used (with the help of a servant, who served as his eyes) to conduct his investigations of bee life. This hive (figure 1) consisted of twelve rectangular frames of comb "joined . . . together by hinges, so that they could be opened and shut like the leaves of a book."[43] Dolinovskii repeatedly drives home the importance of the visual accessibility and readability of the frame system and variously likens Huber's hive (and his own variation thereof, which dispensed with the hinges) to a series of "little pictures in special frames," to a "living, edifying book," and even to "a complete library or compendium of all bee wisdom." The key requirement of a modern hive, Dolinovskii maintained, was "that it be easy to examine it and see inside it the bee cluster [*gnezdo*] and everything that the beekeeper needed to know about and see; that he be able to find all this in the hive with ease, just as we are able to find in a book a particular chapter, page, paragraph, or line that we need." "Just as in a library in which one has read all the books," he writes, "so in this hive, having looked over all the frames and examined the combs of each of them, one can gain complete knowledge of all the secrets of the miraculous nature of bees and comprehend their full wisdom."[44]

Huber's focus as a beekeeper was on observation, as opposed to production. The same could be said of Tolstoi. Nowhere in his diaries and letters does he mention extracting honey (which Sonia, it will be recalled, did not even like). He seems to have been primarily interested in artistic and philosophical rather than material returns on his apicultural efforts. In writing *War and Peace,* Tolstoi, it might be argued, was creating—consciously or not—his own version of a "book hive": that is, a substantial work of fiction (one of epic proportions, "de longue haleine") that allowed us to crack open and peer into the inchoate and fluid "swarm life of humankind."[45] For Tolstoi as a writer the appeal of the movable frame system as a model for representing "swarm life" was that the semidivisibility (and resultant visibility) of the frame hive did not compromise or destroy its organic wholeness: the roughly spherical cluster of bees that is contained within a square hive box and that ranges freely across the individual frames, expanding and contracting in response to temperature fluctuations and population pressures, is not essentially different in shape or behavior from a nest of wild bees in a cavity way up in a tree in the forest. In giving shape to *War and Peace* Tolstoi retained, in the interest

43. From the first English translation of François Huber, *New Observations on the Natural History of Bees* (Edinburgh, 1806), letter 1. On Huber's hive, see Crane, *World History of Beekeeping,* 381–82.

44. Dolinovskii, *Nachala pchelovodstva,* i, ii–iii, xii–xiii, 144. See also 60, 61–62, 78–79.

45. "I am drawn now to writing a free work *de longue haleine*—a novel or the like." Letter to T. A. and E. A. Behrs, October 1862, *PSS,* 60:451; *Letters,* ed. and trans. Christian, 170. "The epic mode is becoming the only natural one for me." Diary entry, 3 January 1863, *PSS,* 48:48; *Diaries,* ed. and trans. Christian, 174.

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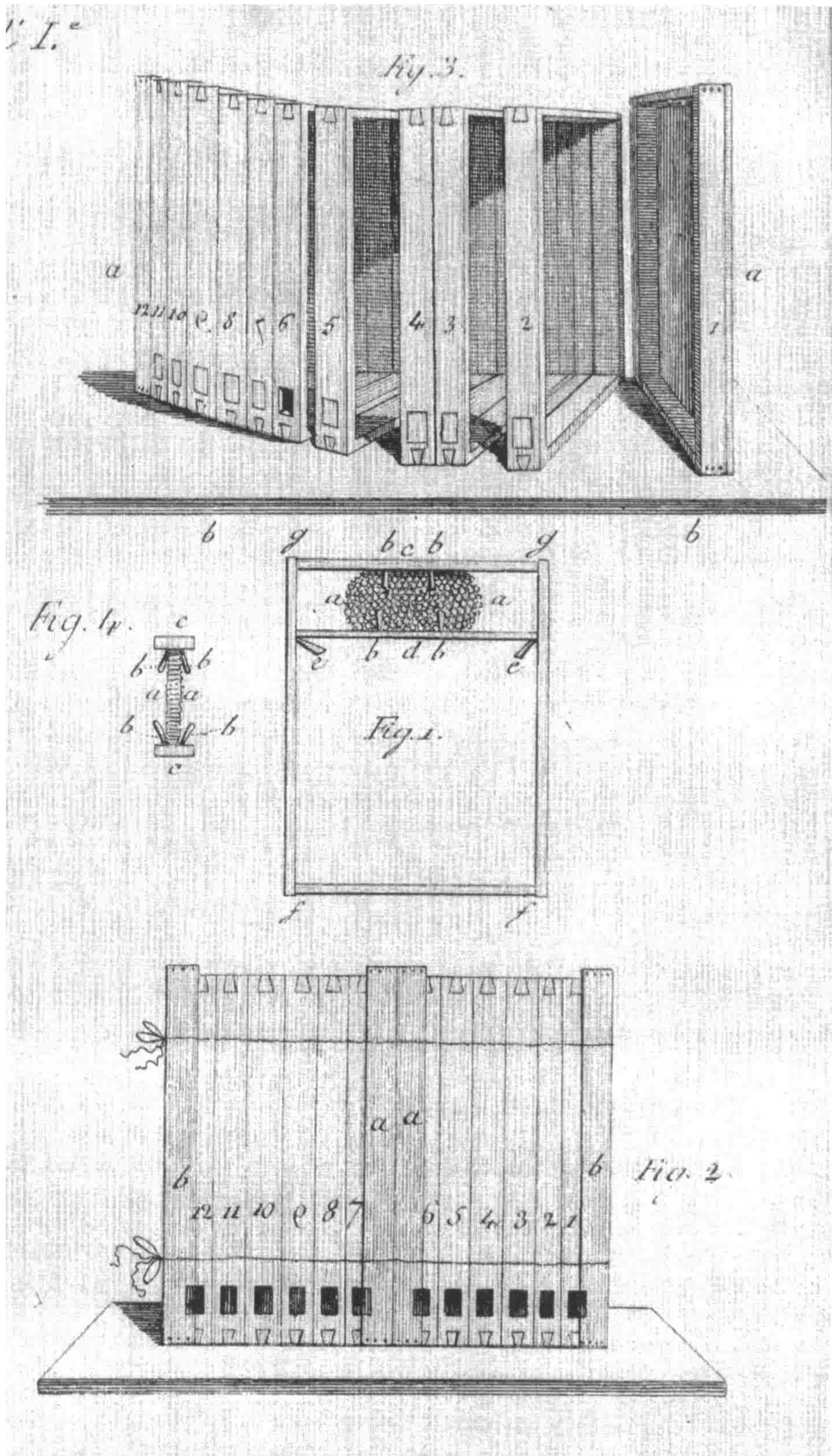

Figure 1. "Book Hive." From François Huber, *Nouvelles observations sur les abeilles* (Geneva, 1792), unnumbered plate between pp. 16 and 17.

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of accessibility and readability, certain traditional narrative divisions and "frames" (chapters, parts, books). Transposed loosely (or, some might say, sprawled) over this relatively linear, box-like framework, however, is a teeming cluster of interconnected characters, images, plots, and ideas. Tolstoi was consciously striving to maintain a novel (and antinovelistic) tension between the traditional demands of art (which always calls for a certain degree of artifice) and a utopian impulse to write more freely and organically (with a green stick, so to speak), to create a more "lyrically daring" type of literature that adequately embodies the hidden and far-flung harmonies of the infinitely complex natural world of which humans, bees, and ants are all a part.[46]

Tolstoi had a long-standing interest in the problem of containing, squaring, and divvying up, for narrative purposes, a reality that was essentially round, expansive, unstable, and indivisible. Back in 1857, he had grappled with this issue in a striking if light-hearted way in a letter (with several messy but intriguing sketches) to his cousin Aleksandra Tolstoia. Here he likened his "thoughts and memories" to "drawers" (*iashchiki*) that slide in and out of the central corridor of consciousness, with the "good" thoughts lined up on the right side of the brain and the "bad" ones on the left (in what we might call the storerooms of the subconscious) (figure 2). The pressure of countless external forces—good or bad weather, a settled or unsettled stomach, flattery or criticism, and so on—would trigger a "spring" (*pruzhina*) on each side that causes one or more "drawers" to push into the central corridor, either fully or partially. Sometimes all the drawers on one side or the other spring out and fill up the entire corridor, blocking the drawers from the other side (figure 3)—and hence precipitating the kind of unremittingly ecstatic or black moods that Tolstoi would later depict in characters such as Pierre or Levin. In a "normal" state of mind, drawers from both sides (that is, good and bad thoughts and memories) would be pushed out, acting like bumper cars competing for space in the central corridor of consciousness (figure 4).

Tolstoi then complicates matters by suggesting that each "drawer" has a "myriad" (*propast'*) of "subdivisions" (*podrazdeleniia*) that vary with the individual: "With one person it's a division into people in court circles and people not; with another, into beautiful and ugly people; with a third, into intelligent and stupid people. With me, there are memories of good, very good, and really very good people, and people who are mediocrities."[47] He sketches an "enlarged cross-section" of this subdivided "drawer" (figure 5).

By this point Tolstoi's metaphor has begun to break down: the rectangular "drawer" is now an elongated oval, and "good" and "bad," once neatly segregated and at opposite sides of the brain, are mixed up in one drawer. Flawed though it is, this effort to depict the workings of the mind is revealing: it shows Tolstoi trying to push beyond a mechanistic concep-

46. On "lyrical daring," see Orwin, *Tolstoy's Art and Thought,* 54–55, 132–40.

47. 18–20 October 1857, *PSS,* 60:228–31; *Letters,* ed. and trans. Christian, 1:108–10.

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Figure 2. "Bird's eye view of the skull," with the central "corridor" of consciousness empty. *PSS*, 60:229.

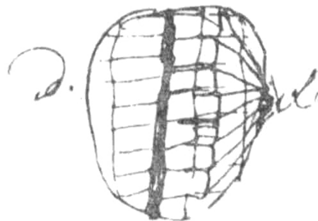

Figure 3. "Good thoughts" blocking the corridor. *PSS*, 60:229.

Figure 4. The "normal" state of consciousness. *PSS*, 60:229.

tion of consciousness toward a more dynamic, complex, and artistically compelling model of the way our thoughts and memories—like the countless bubbles that make up the globe in Pierre's dream—collide, merge, divide, multiply, and "swarm" (as he put it in his diaries) under constant pressure from external influences.[48]

48. Richard Gustafson discusses Tolstoi's 1857 letter in *Leo Tolstoy: Resident and Stranger* (Princeton, 1986), 219, 291; also see Orwin, *Tolstoy's Art and Thought,* 23–24.

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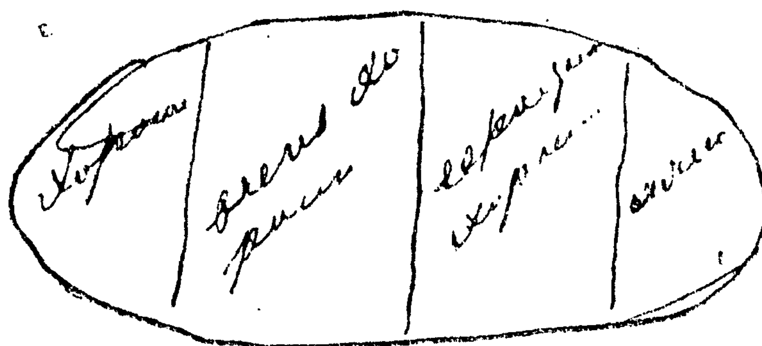

Figure 5. "Enlarged cross-section" of a drawer with subdivisions. *PSS,* 60:230.

Swarming and Reproduction

By the time he got to *War and Peace,* his agenda was even more ambitious: he was interested in adequately conveying not only how the human mind with its "myriad of subdivisions" works, but also how the "unconscious swarm life of humankind"—that is, history itself, with its myriad of variables or "infinitesimals"—takes shape. Tolstoi's stint as a beekeeper, I would argue, played a key role in pushing forward his approach to the conundrums of history and consciousness. Beekeeping offered him a self-contained biological model for thinking about—and creatively squaring and "framing"—these analogous phenomena, which were by nature evolving, organic, and round, and which strongly resisted mechanistic models of interpretation. No less important, beekeeping appears to have helped Tolstoi comprehend certain complex macrobiological forces or laws driving natural and human history.

One of the primary advantages of the new "rational" beekeeping was that it allowed for a high degree of reproductive management and population control—what in apicultural parlance is referred to as "artificial swarming." Beekeepers with old-fashioned monolithic hives had no choice but to let their bees swarm naturally. In late spring (usually in May and June in Russia), a confluence of internal conditions (rapid population growth and crowding in the beehive) and external conditions (primarily weather) triggers natural swarming: that is, more than half the worker bees issue en masse from the hive, with spectacular fanfare, led by the old queen, and alight in a cluster on a nearby branch or sometimes a building, where they will remain, sometimes for a period of several hours, until scout bees conduct them to a new nest site, usually a tree cavity. Thus traditional beekeepers spent a great deal of time watching for these swarms and then (if they were lucky) collecting and hiving them. It was a time-consuming and relatively hit-or-miss business. Beekeepers who used frame hives, however, could head off natural swarming entirely: upon detecting signs of imminent swarming they would find the frame with the

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queen, then simply remove it with the queen and workers still on it, along with two or three other frames of honey and brood, to an empty box hive; the original hive would quickly produce a new queen from its multiple queen cells, and under reasonable conditions both the old and new colonies would thrive and expand.

Tolstoi was certainly well aware of the notion of artificial swarming: Dolinovskii extolled its virtues and described the logistics of it at length.[49] But Tolstoi, not altogether surprisingly, appears to have ignored this aspect of rational beekeeping entirely: for it is precisely swarming—*natural* swarming—that interested him more than anything else about bees. Khrisanf Abrikosov, who befriended Tolstoi in the late 1890s and accompanied him several times on visits to an apiary near Iasnaia Poliana belonging to an old peasant who used only log hives, describes in his memoirs Tolstoi's apicultural philosophy in general and his enthusiasm for swarming in particular. Tolstoi, Abrikosov recounts,

> liked the poetry of the apiary, the picturesquely arranged log hives with their plank roofs, the wattle fence overgrown with raspberries. . . . And he liked straightforward [*prostoe*] rather than artificial [*isskustvennoe*] beekeeping. He liked swarms, the swarming season, the collecting and hiving of swarms, the hum and din with which a swarm goes into a new hive like a victorious army entering a city. The new type of American beekeeping, or "honey production," as it is called, was foreign to Tolstoi. The old peasant beekeeper [*ded pasechnik*] was someone he understood and aspired to be; but the beekeeper who zoomed around his far-flung apiaries on a motorcycle was alien to him.[50]

Thus it is clear that although Tolstoi experimented with movable frame hives in the 1860s, he remained an old-school beekeeper at heart and was probably as suspicious of the "rational" reproductive control of bees and the repression of natural swarming as he was of contraception, bottle-

49. Dolinovskii, *Nachala pchelovodstva,* 196–203. Dolinovskii, who was probably a Catholic pastor, goes out of his way to emphasize that a beekeeper engaging in "artificial swarming" was not playing God, and he claims that the practice is not in fact "artificial" (217–18).

50. Kh. N. Abrikosov, "Dvenadtsat' let okolo Tolstogo," in N. N. Gusev, ed., *L. N. Tolstoi: K 120-letiiu so dnia rozhdeniia (1828–1948)* (Moscow, 1948), 2:415. Abrikosov himself became an accomplished beekeeper and published a number of books (mostly for a peasant audience) on beekeeping in the 1920–1940s. It is probably on the basis of this passage that Galton ("Tolstoy and Beekeeping") asserts that Tolstoi believed "artificial swarming to be an outrage." Abrikosov published another, more specialized account of his apicultural encounters with Tolstoi the same year (1948) that his "Dvenadtsat' let okolo Tolstogo" appeared; at several points these two pieces repeat each other verbatim. See Kh. Abrikosov, "Moi vospominaniia o L. N. Tolstom," *Pchelovodstvo,* no. 9 (September 1948): 57–60. This second memoir reveals that while Tolstoi showed little interest in the apiary that had been established near the main house at Iasnaia Poliana in the late 1890s, he still had strong views about beekeeping and was well versed in apicultural history and literature (59). According to Abrikosov, Tolstoi took a dim view of the "low and wide" hive system of French-American beekeeper Charles Dadant, preferring instead Prokopovich's "narrow and tall" (60) frame hives, which more closely resembled natural tree (*bort'*) and log (*koloda*) hives.

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feeding and wet nurses, trains, motorcycles, threshing machines, and electricity.

The "poetry" of the apiary notwithstanding, Tolstoi's stint as a beekeeper in the 1860s seems to have spawned certain darker and more unsettling reflections on the biological underpinnings and implications of "swarm life"—reflections with specifically Darwinian undertones. In his drafts to book 3 of *War and Peace* he noted that "Humans, like bees and ants, cannot be viewed only as individuals. Human society is a whole organism, subject to the same laws as the beehive and the anthill." As evidence of this he points to the striking sameness of all human settlements "at the lowest level of development" (he uses Russian peasant villages as his prime example). "All this," he concludes, "is the ant side, the herd side, of life."[51] In the autumn of 1868 he pushed this line of thought further in one of his notebooks, sketching out, elliptically and provocatively, certain overarching ideas and goals for book 4 of *War and Peace:*

> To show that people, in obeying zoological laws, never recognize these laws and in pursuing their own personal ends, involuntarily fulfill these general laws. And to show how this happens. Especially evident during times of upheaval. (Depravity [*razvrat*], which checks human breeding where there is overpopulation.) *Safety valve everywhere. Birches.* [. . . .] *History*—Families fulfill their destiny: the continuation of the human species. Clashes. Each [*kazhdoe*] wants world dominion. Why? Clashes, migrations [*pereseleniia*] from less to more productive lands. Barrier of seas. Conquest never moves south to north.[52]

Beneath these comments he sketches a schematic drawing of the mass movement of peoples from north to south (figure 6), the two parts of which call to mind, respectively, the elongated form of an unhived swarm of bees hanging on a branch (right) and the more circular form of a hived or settled swarm (left). He then goes on to reiterate and develop his main points a second time, in a more orderly fashion, giving multiple historical examples of the general trend of northwest-to-southeast conquest and expansion, which is "moderated only by population density and the counterpressure of other forces." Adopting (probably unconsciously) the language of population biology, he adds: "*The whole task of history is distribution* [*razmeshchenie*]. Laws of distribution and migration of animals."[53]

These notebook jottings are striking in several respects. They move with a sweeping and impersonal alacrity from the "micro" level of the individual and family to the "macro" level of the tribe and species. They bluntly collapse or at least blur the distinction between human and nonhuman (or "natural") history. And their upshot is at times wearily pessimistic: history, Tolstoi muses, may in fact lack any true long-term "variety" (*raznoobrazie*) and may simply be an unending series of variations on the same sad tunes played on a limited number of "piano keys" (*klavishi*): "Everywhere the same old stories, the same suffering, the same despotism,

51. Tolstoi, *PSS,* 14:124–25 (draft of 3:2:28).
52. Ibid., 48:107–8. Emphasis in the original.
53. Ibid., 48:109–10. Emphasis in the original.

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Figure 6. The movement of peoples. *PSS*, 48:108.

the same wars, etc. etc. . . . The music is different, but the result is always the same."[54]

It is hard to imagine that Tolstoi's theorizing was not shaped, to a significant degree, by what he saw going on each spring in his apiary. There he had the perfect opportunity to observe—repeatedly, and in a temporally and spatially compressed form—the complex play of biological "pressures" and "counterpressures" that triggered regular population explosions and the mass movement (or swarming) not just of bees but, further afield, of people and other animals. The French invasion of Russia in 1812 that he describes in *War and Peace* was on some level simply a variation on his swarming bees, with certain brute biological forces complicated and masked by a welter of cultural and political pressures particular to humans. So too, on a more local level, was the sudden, instinctual migration of hundreds of peasant families in the 1790s from the Bogochurovo region toward "warm rivers," described in passing in book 3 of *War and Peace:* "As birds fly somewhere beyond the seas, so these men, with their wives and children, made for somewhere there, in the southeast, where none of them had ever been."[55]

Safety Valves

All of these forms of "swarming," both nonhuman and human, are examples of a biologically driven release of pent-up pressure: nature's "safety valves," to use one of Tolstoi's favorite terms. For Tolstoi this "safety valve" metaphor, like the "swarm life" metaphor, is potently multivalent: it is, as he puts it, "everywhere" (*Spasitel'nyi klapan vezde*). In fact the metaphor crops up repeatedly in his works over several decades, each time with a somewhat different connotation. It can refer to very broad demographic phenomena: in the notebook entry, for instance, he compares the discovery and settlement of America to the release of steam (*Otkyvaetsia par*).[56] It can likewise be a codeword for specific social mechanisms for dissipating

54. Ibid., 48:108, 109.
55. Tolstoi, *War and Peace,* 3:2:9.
56. Tolstoi, *PSS,* 48:109–10.

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excess (male) reproductive or sexual energy—prostitution, for instance. This almost surely is what he has in mind when he refers to "Depravity [*razvrat*], which checks human breeding where there is overpopulation." An unsent letter he wrote in 1870 to Nikolai Strakhov picks up on this strand of thinking: using somewhat tortuous logic, he defends the regrettable necessity of prostitution as an institution, especially in large cities and "under the present complex forms of life," justifying it as the only sure way to guarantee the sanctity of the family and preserve the moral purity of well-bred young women, married and unmarried, who would otherwise be besieged by "a whole pack of unmarried hounds who have no Magdelans."[57] Twenty years later, he echoes this notion of prostitution as a "safety valve" in *The Kreutzer Sonata,* but this time pejoratively; by now he sees marriage itself as a form of legal prostitution and shares Pozdnyshev's view that *all* sensual love is in fact a "safety valve."[58]

It is perhaps not coincidental that 1868—the year Tolstoi wrote his notebook entry—saw the publication of the first Russian translation of Thomas Malthus's *Essay on the Principle of Population,* which had appeared in England seven decades earlier, in 1798, and had a catalytic effect on Darwin as he developed his theory of evolution. Tolstoi knew about Malthus and his theories of geometric population growth as early as 1862 (he mentions him more or less neutrally in his essay "Progress and the Definition of Education"); later on, in *What Then Are We to Do?* (1886), he dismissed him as "an extremely bad English publicist whose works are entirely forgotten and are now recognized as being utterly inconsequential."[59] Although there is no specific evidence that Tolstoi had the Russian edition of Malthus on hand in 1868, or ever had more than a second-hand knowledge of his ideas, there are nonetheless striking conceptual affinities between Malthus's theories (Tolstoi's subsequent scorn notwithstanding) and Tolstoi's notebook musings on population pressures, patterns of migration and conquest, and "safety valves." Malthus's Russian translator, P. A. Bibikov, in his long introduction, praises Malthus's detailed analysis of the problem of population growth but roundly criticizes his proffered solution—voluntary "moral restraint" (*nravstvennoe obuzdanie*)—as hopelessly at odds with human nature.[60] In 1868 Tolstoi, judging from his comments on prostitution and his recognition of the overwhelming force of "zoological laws," would have agreed with Bibikov; by the 1880s and 1890s—that is, precisely when he was debunking Malthus's thinking as "utterly inconsequential"—he was embracing something very close to the English pastor's utopian scheme for universal "moral restraint."

Versions of the "safety valve" are indeed "everywhere" in *War and Peace,* yet Tolstoi uses the term itself there only once, in describing Pierre's ex-

57. 19 March 1870, *PSS,* 61:231–34; *Letters,* ed. and trans. Christian, 228–29. Tolstoi continued to work out these views in *Anna Karenina.*

58. Tolstoi, *PSS,* 27:23–24, 30.

59. Tolstoi, *PSS,* 25:333.

60. P. A. Bibikov, "Zhizn' i trudy Mal'tusa," in Robert Mal'tus, *Opyt o zakone narodonaseleniia* (St. Petersburg, 1868), 1:75–88.

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perience as a prisoner of the French. Here it involves the release or re-channeling of psychic as opposed to sexual or demographic pressure: it is an instance where the mechanisms of physical and metaphysical survival overlap.[61] The more unbearable the reality around Pierre becomes, the more his mind automatically blocks out this reality: "calming thoughts, memories and images" magically flood his consciousness and hold at bay all other impressions (his painfully battered feet, Karataev's imminent death, and the ongoing execution of prisoners who fall behind—something that on a conscious level "he did not see or hear"). "Now for the first time Pierre understood the full strength of man's vitality and the saving power [*spasitel'naia sila*] inherent in man to shift his attention, like the safety valve [*spasitel'nyi klapan*] in a boiler that lets off surplus steam as soon as the pressure exceeds a certain point."[62] Tolstoi's use of the safety valve metaphor here seems somewhat odd, even imprecise. For the primitive defense mechanism that kicks in for Pierre at this point does not so much release or evacuate distressing impressions, so that they evaporate completely like steam, as it does channel them away from the *conscious* mind. This is quite clear, for instance, in Tolstoi's description of Karataev's execution: "From behind, from the spot where Karataev had been sitting, came the sound of a shot. Pierre heard this shot quite distinctly [*iavstvenno*], but at the very instant when he heard it, Pierre recalled that he had not finished his calculation . . . of how many marches were left to Smolensk. And he started to count."[63]

Throughout this section of *War and Peace,* we cannot help but be reminded of Tolstoi's 1857 letter, with its springs and drawers: at some psychic tipping point "good" thoughts and memories suddenly swarm, unbidden, into the central corridor of consciousness, instantly blocking all "bad" impressions (everything that one supposedly does "not see or hear"), which are shunted into the storerooms of the subconscious (or, in the language of Sigmund Freud, repressed). In the 1857 schemata, it will be recalled, the statically rectangular "boxes" or "drawers" had already begun to morph and divide in Tolstoi's drawings (figure 5) into something akin to the jostling "drops" of Pierre's globe. With the globe Tolstoi had hit upon a more fluid and organic model of how the mind works—a model that truly allowed for a "myriad of subdivisions" and combinations and that reflected much more subtly the way "thoughts, memories and images" "hitch up" or fail to "hitch up."[64] "The entire surface of the globe consisted of drops tightly packed together. And these drops all moved and shifted, and now merged from several into one, now divided from one into many. Each drop strove to spread and take up the most space,

61. Inessa Medzhibovskaya has suggestively referred to the phrase in this particular context as a "salvation valve" rather than a "safety valve." Inessa Medzhibovskaya, *Tolstoy and the Religious Culture of His Time: A Biography of a Long Conversion, 1845–1887* (Lanham, Md., 2008), 101.

62. Tolstoi, *War and Peace,* 4:3:12.

63. Ibid., 4:3:14.

64. Ibid., 3:3:9. The verb Tolstoi uses is *sopriagat'.*

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but the others, striving to do the same, pressed it, sometimes destroying it, sometimes merging with it."[65] It might be said that in this more complex, hive-like model of the mind, extraordinary duress causes "good" thoughts to swim or swarm simultaneously to the surface (the conscious mind) and connect up, so that "bad" impressions get scattered and pushed beneath this surface. A striking instance of this occurs right on the heels of Karataev's death and Pierre's dream: a swarm of heretofore repressed memories pertaining to Karataev's death emerge in Pierre's mind, "suddenly, simultaneously, connecting among themselves," so that he is "ready then to understand that Karataev had been killed," but then all of a sudden these recent, traumatic memories are gently nudged aside by a more distant and pleasant memory:

> at that very instant a memory emerged in his soul, coming from God knows where, of an evening he had spent with a beautiful Polish woman, in the summer, on the balcony of his house in Kiev. And still not connecting the memories of that day and not drawing any conclusions about them, Pierre closed his eyes, and the picture of summer nature merged with the memory of bathing, of the liquid, wavering ball, and he sank somewhere into the water, so the water closed over his head.[66]

The passage is a classic example of how Tolstoi as an artist "hitches up" and poetically elides ideas and images. Here the complex workings of Pierre's mind graphically replicate the dynamics of the pulsating, semiliquid globe he saw in his dream, and this globe itself (as a recent memory) merges with other more distant memories (bathing outside in the summertime) and finally envelops him in its watery infinitude.

In a sense Tolstoi, through Pierre, was describing his own psychic coping mechanism as a thinker and artist: in writing *War and Peace* he was repeatedly brushing up against—and then by and large pushing down—various disturbing realizations about the biological laws driving human beings, bees, and all other animals. In "A Few Words about *War and Peace,*" for instance, he seems to suggest that war and violent struggle are inevitable: "Why did millions of people kill one another when it has been known since the world began that it is physically and morally wrong to do so? Because it was such an inevitable necessity that in doing it men fulfilled the elemental zoological law which bees fulfill when they kill one another in the autumn, and which causes male animals to destroy one another. One can give no other reply to that terrible question."[67] Rimvydas Silba-

65. Ibid., 4:3:15.

66. Ibid.

67. Tolstoi, *PSS,* 16:14; written December 1867. In referring to "bees killing one another in the autumn," Tolstoi is evidently referring to the annual slaughter of the drones by the worker bees before the onset of cold weather. See also the following passage from the variant drafts to *War and Peace,* 3:1:1: "It makes sense that there could be a zoological human law, like the zoological law of bees that makes them kill each other and male animals kill each other, and history even confirms the existence of such a law, but for a single man to order millions to kill each other, this makes no sense, because it is incomprehensible and impossible." Tolstoi, *PSS,* 14:12. Tolstoi was working on the first half of

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joris has suggested that "this statement stands alone, without elaboration either in the novel or in other comments by Tolstoy. It is almost as if Tolstoy had lifted one corner of the curtain and seen truth as a nightmare, and dropped the curtain immediately."[68] In *War and Peace* Tolstoi seems to have vacillated between a conviction that war, no matter how horrifying, was *natural* and hence in some sense justifiable, and a gnawing intimation that what is "natural" (war, "human breeding," "the continuation of the human species," the Darwinian "struggle for existence") is not necessarily good and could not always be justified.[69] But these gloomy thoughts were not in harmony with the epic tone or the optimistic mood and progenerative thrust of his family "novel." In the 1860s Tolstoi was too enmeshed in his own swarm life and too invested in birthing his "monument to procreation and nature's vital force" to reject biology and "biological laws" outright. But he would eventually take this radical step. Decades later the elliptical musings on biological necessity that Tolstoi had relegated to the margins or "subconscious" of *War and Peace* (the diaries, notebooks, drafts) would rise with stunning force to the surface of his consciousness—and conscience. His increasingly pointed conclusions about marriage, family life, sex, prostitution, and the "continuation of the human species" would gather strength and finally swarm, artistically and philosophically, in works such as *What Then Are We to Do?* and *The Kreutzer Sonata.*

Tolstoi's involvement with bees waned after about two years, and though he maintained a long-standing interest in them (in particular in their swarming, as Abrikosov testifies) and referred to them in various later works, he no longer took part in the day-to-day management of the apiary after 1865.[70] It was a passing obsession.

According to Sonia, Tolstoi later said that he dropped his plan in

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Book 3 in the autumn of 1867; see E. E. Zaidenshnur, "Istoria pisaniia i pechataniia *Voiny i mira,*" *PSS,* 16:110.

68. Silbajoris, War and Peace: *Tolstoy's Mirror of the World,* 131.

69. See Orwin, *Tolstoy's Art and Thought,* 12: "Tolstoy extended his definition of nature to include peoples as well as individuals, and he went to extraordinary lengths to justify every universal and therefore natural human activity, including war."

70. See, for instance, his note to Sonia on 16 June 1867 (*PSS,* 83:138), which attests to his continued fascination with swarming as he was writing the second half of *War and Peace.* Tolstoi mentions bees several times in *What Then Are We to Do?* but his take on them is strangely inconsistent: on the one hand he presents bees as a model of utopian cooperation that humans should emulate, but then on the other hand he suggests that it is specious to justify the economic and social status quo—the existing class and labor divisions among humans—on the basis of the example of bees, with their differentiation between workers, drones, and the queen. *PSS,* 25:293–94, 316, 335. In an odd passage (one of many) in *The Kreutzer Sonata,* Pozdnyshev ascribes a utopian sexlessness to bees and suggests (somewhat contradictorily, using Darwinian language) that humans need to follow the bees' example: "'In order to defend its interests in its struggle with the other animals, the highest form of animal life—the human race—has to gather itself into a unity, like a swarm of bees, and not reproduce infinitely: like the bees, it must produce sexless individuals, that's to say it must strive for continence, not the excitement of lust, toward which the entire social organization of our lives is directed.'" *PSS,* 27:30–31; *The Kreutzer Sonata and Other Stories,* trans. David McDuff (Penguin 1985), 55. Pozdnyshev is of course referring to the worker bees, but Tolstoi knew perfectly well that in a beehive not all bees are "sexless individuals" and that the sole function of the queen and the drones is in fact procreation.

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1863 to write about the Decembrists "because he became *disenchanted* with them" (*potomu chto* razocharovalsia *v nikh*); evidently the Murav'ev brothers and their co-conspirators did not live up to the high ideals of the "ant brotherhood."[71] It would seem that Tolstoi, consciously or unconsciously, likewise became "disenchanted" with bees, for the utopian promise of "swarm life" at Iasnaia Poliana inevitably ran aground on the shoals of biological necessity. Yet even if the beehive proved in the end to be more of a Pandora's box than a revelatory window into some kind of harmonic truth inscribed in nature, Tolstoi's relatively brief encounter with bees helped give shape to a work that is one of the first, the fullest, and the most wonderfully intricate literary embodiments of modern biological thinking.

71. Tolstaia, *Moia zhizn'*, excerpt in *Novyi mir,* no. 8 (1978): 38. Emphasis in the original.

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