

## Dmitrii Pisarev, "Bees" (1862)

Historians, essayists, and politicians have been talking, are talking, and will continue to talk an awful lot of nonsense for a long time to come. All their theories will fly apart like soap bubbles until they feel the solid ground of tactile facts under their feet. Some learned man will very seriously begin to assure you that in his investigations he has arrived at the basic laws of human development, the framework of world history. Ask this colossus of learning whether he knows the structure of the human body, ask him an elementary question from physiology or anatomy, and you will see that he lowers his eyes and involuntarily admits his ignorance. All his conclusions are based on paper documents. He knows neither a living person nor living people. He knows neither the process that takes place in each indivisible being, nor those functions that take place in living society. He sees only with his weakened eyes that piece of life that stuck to the parchment scroll lying in the archival dust. From this piece he thinks of recreating living individuals, forming a concept about man, studying the laws of his development. From these senseless attempts to determine from pitiful fragments what you do not know and do not want to study in all the diversity of life's fullness, from these powerless attempts to replace observation with the creativity of the mind, errors, doctrines, political convictions, intricate theories are born, in which trivialities are missing: knowledge of the matter and common sense.

To understand an event, you need to know its actors. To explain the historical development of mankind, one must know the forces that act in and around it. Let the gentlemen doctrinaires, of whom there are many in every society that begins to think, look around them and say, hand on heart: what do they know? What truly existing natural phenomenon do they know and understand? They will be forced to admit that for the most part they know only what other doctrinaires who lived before them thought. They spend days and years on these works of former doctrinaires, they comment on and criticize them, without getting to life itself and mistaking their words and concepts for existing phenomena. These doctrinaires are a modern modification of medieval monks. They have diligence, they have conscientiousness, and at the same time – not the slightest concept of life, and as a result, not a single living idea in the mind, not a single energetic movement in the brain. Thanks to them, the simplest, most understandable word *life* was turned into some kind of rhetorical figure, devoid of flesh and blood. They understand in their own way the life of ideas, the life of society, the life of humanity, in a word, all *imaginable* life, all life except the actual life of an individual living person. They have no time to even think about the life of animals. These are details that they don't even want to look at, they, the legislators of humanity, bearing in their brains the solutions to various world questions.

We do not have the good fortune of being doctrinaires. We have neither the skill nor the desire to do this. With pure hearts we repent that we have the weakness of being interested in real life, no matter how tiny the dimensions in which it may appear, and we are not at all interested in the ethereal creations of doctrinaire minds, no matter how orotund the phrases they may be clothed in. On this basis, we intend to talk to readers not about the theory of divine right, not about the law of historical gradualism, but simply about the domestic and social life of bees. We greatly need positive ground for our research, factual material from which we could forge for ourselves views and convictions of metallic firmness and unshakable solidity. Let us look around us, at living nature, instead of closing our eyes or focusing them with persistent attention on letters, words, and phrases.

**Part I.** [remaining text is uncorrected translation found [here.](#)]

The bee belongs to a species of insects; it has no spinal column and its body is divided into three well-defined parts; first, the head, in which are the eyes, antennae and mouth; second, the thorax, to which three pairs of legs are attached underneath and two pairs of wings on the upper side; third, the abdomen, in which are the heart and respiratory apparatus, the digestive system and sexual parts. On each side of its head the bee has two large eyes, consisting of thousands of microscopic facets looking out of a common transparent cornea. With these two eyes, the bee sees small things near it, they are for the bee what microscopes are for us; in order to see in the distance and direct its flight the bee uses three tiny ocelli situated on the upper part of the head. As far as we know from science in its present state of imperfection, man has not the type of eye by which the bee directs its flight. This is probably the only reason why most human judgments and constructions suffer from the short-sightedness of their makers.

The bee's mouth is most intricate in its structure: it will suffice to note the two horny mandibles which close like the blades of scissors, the little brushes with which the bee collects the pollen, and the long lower lip which is covered with hair and serves as a tongue—not, of course, for speech. I will not dwell on it, but will merely remark that the worker bees bring honey and pollen to the hive, while the drones and the queen cannot do this. In their body the worker bees produce wax which is secreted between the ringlets at the rear of the abdomen and is then used as building material in the hive. The queen bee and the drones cannot produce wax.

The worker bees are armed with a sting, hidden in the rear of the abdomen and connected to a bladder which secretes a pungent venomous liquid. Drones, being a privileged section dispensed from the obligation to defend society against its external enemies, have no sting. Their jaw is particularly strong and covered with notches as a result of which the drones are very voracious. The queen's sting is longer and sharper than that of the ordinary bee, but she uses it only in duels with rivals for supremacy in the hive.

We thus see that the population of the hive is divided into three castes, distinguished from one another by external features. The head of the hive is the queen, the only female able to lay eggs; she can say in the literal sense of the word: *l'état c'est moi*, because she gives birth to all that lives and moves in the hive. Her abdomen is much longer than that of other bees; her sexual organs are fully developed, her wings, on the other hand, are considerably shorter; the result of this is that the queen rarely leaves the hive but spends her life enjoying ready-made food and satisfying her highly developed sexual urge. She flies out only to give herself to the drone she loves amidst nature in bloom, or to surrender her place to a successful rival.

The queen is followed by the drones or males, whose body is much bigger than that of the worker bees; they do not work, they have no weapon, they eat a lot, fertilize the queen in turn and otherwise know no care or obligations.

The worker bees or females are not able to bear offspring and it is not nature, but education, that is responsible for this. Insufficient feeding delays the development of their sexual system and condemns them to a life of labor without enjoyment. Not being able to live for themselves, the worker bees devote their activity to the education of the larvae to which the queen gives birth; all the honey they collect from the flowers goes to feed the larvae, the drones and the queen bee; all for the general good and nothing for themselves; the worker bee

contributes with touching but absolutely ridiculous self-sacrifice to maintain the monstrous order of things which deprives her of the possibility to enjoy life and produce offspring. It is she that feeds hundreds of larvae badly and about a dozen others well so that the former will develop into sterile worker bees and the latter into full-blown females, queens. The worker bees are pitiable pariahs that do not feel their own humiliation, are unable to deliver themselves from it and maintain the following generation in the same humiliation, so that they, in their turn, will act in the same outrageous conservative spirit, and so on ad infinitum.

They are proletarians oppressed by the existing order of things, enchained in irremediable slavery, treading the mill unaware of any better condition. The eggs which the queen lays are all perfectly equal in quality: for the first three days, there is no difference between the larvae that hatch out of them, anyone of them may become a queen. Then starts the difference in education: one larva is placed in a special cell and fed with selected food, and the servants and nurses clean and wash it; out of it a queen will develop. Another larva, on the contrary, is confined in a narrow cell, fed with whatever happens to be handy and never cleaned; out of it an ordinary worker will develop. According to circumstances one worker bee will be stronger, another weaker; the stronger ones fly out and gather honey; the weaker ones remain at home, take care of the larvae and pupae, clean the cells and carry out various domestic duties. These careful nurses and housekeepers hurry from one cell to another; here a hungry grub must be fed, there a food store filled with honey must be sealed; somewhere else a cell in which an adult larva is metamorphosing into a pupa must be sealed and somewhere else again a large cell occupied by a queen pupa has to be cleaned; there is always something to do, and the laborious life of the worker bees goes on in an unending succession of duties, giving them no time to think of enjoyment or dream of a better future. When the young generation has been fed, there is more work to do: new cells have to be built in which honey will be stored; the sister workers on their return from work, or even the idle drone who has been wandering at liberty outside the hive, must be licked and cleaned; when it gets cold the nurses and housekeepers gather round the queen, warm her with the heat of their bodies and contemplate her like an elect, superior being. In short, there is no end to the self-sacrifice of the worker bees, and if self-sacrifice is a virtue and not stupidity, the worker bee must be considered the most virtuous creature in the world.

## **Part II.**

The bee state, with all the elements it is composed of, has its history, its periodical agitations, its civil events and its upheavals. At one time a new swarm flies out of the 'hive like a crowd of fearless colonists resolutely seeking happiness and space beyond the sea. The queen flies at their head, surrounded by the strongest workers ready to protect her against any danger and give their lives for what they consider as the common cause. This advanced group is followed at a short interval by the lazy drones and weak nurses and housekeepers. Writers of old, by the way, tell us that on such migrations the queen is surrounded by the drones, but that is most probably an error; if indeed it was so formerly, the change in the ceremonial is clear proof that the privileges connected with the title of drone are gradually decreasing and that the difference between the castes in the bee world is gradually disappearing before the law of common sense and the factual right of personal material strength. The queen does not like long flights, she soon alights on a branch, and her people settle in thick clusters round her, while a few of the strongest worker bees go on a reconnaissance flight to find a location for the new colony. Man generally anticipates this search and provides a ready-made dwelling offering all the necessary conveniences. The bees accept with gratitude, not understanding that they are delivering themselves as slaves and that man adjudges himself unbounded rights

to dispose of their life and property, to take from them their honey and wax, to smoke them out, to daze them with sulphur and water, to chase them from one dwelling to another and even to kill them if, by his own considerations, it is not worth while feeding them with the very honey that they themselves collected. The bees do not foresee all these inconveniences of their new situation, and the whole swarm buzzes with joy as it flies into its new hive.

Once they have occupied their new home, the bees first close and seal all the openings, with the exception of a small hole through which contact between the hive and the outside world is maintained. They find a sticky substance on the young shoots of various trees, and with it they caulk all the cracks up as tight as possible in their endeavor to make their home inaccessible not only to all external enemies, but above all to the action of light from outside. Darkness is absolutely necessary to maintain the existing order. When a bee flies out of the hive, she is a free and energetic worker; at home she is oppressed and sacrificed to the external harmony of the state body, and, therefore, in order to submit to these oppressive conditions and bear without a murmur her privations and labors unmitigated by any pleasures, she must ignore the actual state of affairs and not see or understand how the queen and the drones spend their time. The first ray of light frightens the worker by revealing the sordidness and misery of her everyday life; she does not attribute her unpleasant feeling to the sight that the ray shows when it penetrates into the hive, but to the ray itself; she tries to eliminate it as we human beings endeavor to cast away doubts which arise; if the inquisitive naturalist makes a window in the hive, the bees will cover it up; if, in order to continue his observations, he takes out the daubed window, a tumult will arise in the hive; at the first rays of light the drones will crowd at the opening, trying to cover it up with their bodies; the worker bees will fly for paste to seal it up; the hive will be filled with buzzing, and the former situation will be restored only when darkness reigns again.

But if the observer constantly clears the opening sealed up by the worker bees and blocked by the drones, if the hive remains lighted despite all the resistance of the bee kingdom, everything will get disorganized little by little. The workers will stop working and will understand that the privileged classes are enjoying the fruits of their, the workers', labors. They will cease to build combs and to feed the larvae; they will leave the queen unattended. Their buzzing will grow louder; they will cluster together as though discussing something, to the great horror of the Tory drones and the extreme displeasure of the queen, who will begin to feel hungry and lonely. The honey gatherers will return without honey, each will eat up what it has collected; finally, many of the worker bees will leave the hive altogether and will take up life in the open among flowering nature to their own complete satisfaction. The queen will starve, the drones will scatter, the larvae will die, and only the walls of the empty hive will bear witness to the recent existence of an element of state or flock. The workers will enjoy life as much as they can in their stunted condition, they will sport in the warm vastness of the air, hover over the meadows and fields in flower and revel in honey and freedom, in pollen to satiety and in the end, after enjoying their freedom, they will die as they lived, free citizens of the animal world. Some of the anarchists, however, will repent and try to settle in some other state, i.e., they will go and live in another hive and take upon themselves the same obligations that they fulfilled before.

But newcomers are not admitted; the natives at once recognize a foreigner and drive him away; if he is obstinate they kill him and throw his lifeless body out of their kingdom. Whether this Chinese hatred that bees have for foreigners is based on political or economic calculations is difficult to decide. Whether they fear the newcomer as an unnecessary consumer or a preacher of anti-constitutional principles has not yet been ascertained by those

who have studied their civic organization. Whatever the case, there are two facts which cannot be doubted in the least: first, darkness is necessary for the calm and collective prosperity of the hive; second, bees who renounce the cherished standards of their social system are incapable of working out other standards for themselves and begin to live an entirely individual life which, though it has many good aspects, has indubitable purely practical inconveniences. Worker bees are capable of working and defending their society against external enemies; but the impulse to perform that work and that defense is given to them from outside by creatures which are incapable of working or fighting themselves. An extremely original division of labor exists in the hive: some work, others eat and produce offspring. Without this division of labor the breed cannot continue to exist; those that work are incapable of bearing offspring, and those that can produce offspring can not work. Bees are apparently spoiled by their monstrous citizenship; the plebeians are castrates, and the natural sexual functions are the privilege of one individual. Neither ancient Egypt nor ancient India attained such strict fulfillment of caste peculiarities; even the pariahs had the right to take to them selves a wife and to produce children; perhaps only modern England, with its constantly increasing population, will reach the point where marriage will be the privilege of a few persons or sections of society, and the proletariat, having neither hearth, home nor guarantee of bread, will be forbidden by law to have intercourse with women and produce children. Let it be noted incidentally that John Stuart Mill discusses this question of English life in his famous book *On Liberty*. He, the great individualist of our time, almost decides to acknowledge that society has the right to control marriages and forbid those which menace society with an increase of non-propertyed citizens and therefore a lowering of piece wages. It is not far from such thoughts to the justification of the social institutions of bees, but it does honor to man that one can hope that such a will never be passed or firmly established; every pauper sooner die than be turned into a castrated worker living to be the foundation or building material of the social edifice. Some naturalists are in ecstasy at the intelligence of bees and their enviable ability to live in society with beings like themselves; it seems to me, on the contrary, that one must wonder at their monstrous oppression, which goes to such an extent that, stunted themselves, they systematically stunt others and, thus, at the same time are insensible victims and senseless butchers.

### **Part III.**

Well, at last, the fissures have been covered up, darkness reigns and the state machine starts working. The first thing the worker bees do is to begin building combs, hexagonal wax a certain size, a definite shape and invariable architecture. No creative ability, individual thought or original talent is required for this. Every bee can build such cells and knows the proportion there must be between the different rooms. The smallest cells of all are built for worker bees, larger ones for drones, and as much wax is used for a queen as would be required for one hundred and fifty workers. The architects do not quarrel over the plan of the future buildings; each bee has long known every detail; there is no reason to submit a project, and provided it is dark and quiet, everything will go smoothly, because the idea of the constitution with its factual details has become part of the life of the working class.

The drones understand the privileges of their class; they give the builders no help, and in the heat of noon they fly out, not to fetch honey for the general good, but to fill their bellies with pollen in complete awareness of their superiority. Meanwhile, the worker bees fly out six or eight times a day and return every time with a full load of honey on their legs and in their stomach; all the honey they bring, or at least the larger part of it, goes to feed the queen, the

drones and the larvae; the worker keeps for herself just enough to maintain her life and labor power.

The drones, being males, surround the queen, the only female in the whole hive, and do their best to deserve her favor; they crowd around her, lick and clean her, are most respectfully kind to her, vie with one another in declaring their profound devotedness, or, on occasion, their ardent love, and yet they live peaceably enough together thanks to their imperturbable indolent temperament and the absence of the deadly sting the worker bees are armed with.

The queen does not remain insensible to these sincere declarations of sentiment—her heart is not made of stone. Besides, she has an important task to fulfill—to produce out of her body a whole future generation of her people; she sets to work with great zeal. Her collaborators in the service of society are some six hundred drones, thanks to whose conscious cooperation the queen lays about two hundred eggs a day, or some twelve thousand in a month or a month and a half. In the morning, when the lazy drones are still asleep and the workers have already flown out for honey, the queen emerges from her cell accompanied by ten or twenty servants from among the worker bees. “With dignity she goes past the filled cells,” O’ken says, “and stops as soon as her retinue show her an empty one; first she puts her head into it to make sure that it is correctly built, then she turns her back to it, and at this decisive moment, her retinue gather in a close circle around her to hide her from inquisitive eyes. If at this moment the queen notices that the naturalist is looking at her, she passes on without laying any egg, deeply offended in her feminine modesty; but if all is quiet and dark around, she introduces the rear of her abdomen into the cell, after which a white elongated egg appears at the bottom.” She thus lays about five eggs and then rests for a few minutes; her servants surround her most assiduously, lick her whole body, clean her wings, and finally present her a drop of the best honey on the tip of their proboscis.

Three days later small white grubs or larvae are hatched from the eggs; they have a hard elongated head but no legs; these new-born beings are absolutely unable to look after themselves and the workers take them entirely under their care, because neither the queen nor the drones pay the slightest attention to them. The nurse workers prepare food out of pollen and honey, and feed the larvae with it, making a great difference between the food given to future proletarians and that which is fed to the future queens or noble drones. Worker larvae are fed for five days and drone larvae a little longer. After that period, the nurses seal the cells with wax and the larva begins its metamorphosis into a pupa, that is, it builds itself a cocoon out of fine silky threads. It is inside the cocoon that it develops into an adult insect, and when the development is complete the bee emerges from its seclusion, bursts its cocoon, gnaws through the wax lid and comes out into the world in the form of a proletarian, a drone or a queen.

From the time the egg is laid to when the insect emerges from its cocoon the development lasts twenty-four days for a drone and twenty for a worker, but the queen can assume the care of the state and be considered an adult and fully entitled sovereign after sixteen days. The reason is that the queen bee needs a lesser degree of both physical and mental development than the worker bee. All her activity is concentrated in the sexual functions: she does not need muscular strength or thinking abilities; there is no need for her to build combs, to fly on long expeditions or extract particles of honey or aromatic pollen from flowers; her business is to be nice to the drones, without any necessity to win them from rivals, and then lay eggs without any concern for the subsequent fate of her future descendants. Her people knows its business quite well and the whole state machine goes at full speed without any need or even

possibility of interference on her part. To occupy her honorable post, which involves no obligations whatsoever, she does not need great intelligence, and therefore it is not surprising that the development of the queen bee is much more rapid than that of the worker. The personality of the queen has no influence whatsoever on matters in the hive; the bees respect in her the personification of the idea which maintains them in their civil society and does not allow them to scatter, but it does not matter to them whether their queen is a motionless, completely unconscious egg, a regal larva or a sleeping pupa. If sudden death cut short the state solicitude of the adult queen, the inhabitants of the hive would not be embarrassed: the proletarians, who constitute the real force in bee society, know that queens are developing among the eggs or the cocoons; they are tranquil about the future of the hive and therefore continue their work as if nothing particular had happened.

But why do the drones, whose activity is just as limited as the queen's, whose mental abilities are absolutely insignificant, take so long to develop? Vogt explains this by the physical sluggishness which is typical of the drones; eternally idle, unable to work or show concern for anything at all, they even develop more slowly and lazily than other bees; the lordly clumsiness and phlegm typical of this privileged class of the bee state permeate it even in the embryo.

#### **Part IV.**

Bees have no permanent army: every proletarian constantly carries its weapon with it and knows how to use it; every soldier in this national guard is inspired by patriotic feelings which are shown in their ardent hatred of humble-bees, wasps and even bees from other hives; if some incautious or impudent member of another tribe takes it into his head to fly into the hive, he will have a bad time of it: hundreds of worker bees will rush at him, making use of jaw and sting; the wanderer will inevitably be killed and his body will be thrown out of the hive as a warning to others. In a hive there are generally up to twenty thousand worker bees, and yet bees are never deceived and never allow a citizen of another hive into their society. Whether the incoming bee exchanges conventional signs with those on guard at the entrance is difficult to decide, but it is reliably known that members of neighboring hives are not allowed to pay visits and that every hive obstinately keeps its domestic affairs hidden from the eyes of strangers. But there is a means of destroying the tribal hatred existing between bees of different hives: you have only to throw them all into water; they go crazy and lose consciousness. Then you take them out and lay them in the sun so that they gradually dry and come to their senses; they begin to move, preen their wings and legs, stretch themselves and try to help their comrades who have not yet awakened from their lethargy. After this common misfortune, the national hostility is forgotten; bees from two hives can be placed in one and they will join efforts to build combs and rear the young generation.

As far as we know, it is only as far as bees are concerned that water is a remedy for national antipathies; we cannot say for sure whether it would have the same wonderful effect on citizens of two hostile states, because we have no positive experience. We may note, by the way, that water has this salutary effect on bees only if the queen of one hive is killed; if, on the other hand, both queens are thrown into the water together, they will start hostilities against each other as soon as they recover consciousness; a cluster of workers will support each of them, and the stronger side will expel the weaker from the hive; after the tussle, the former hostility will be resumed with renewed vigor until they are given another dipping. In some respects, the Germans are like bees. At home in Germany they usually support the petty

local interests of the separate states. Natives of Bavaria, Wurttemberg, Baden, Hanover, Schaumburg-Lippe or Hohenzollern-Sigmaringen consider one another as foreigners and speak respectively of their own separate country and their own separate patriotism; but if those same citizens of various German hives cross the sea and settle in the states of America, there, because of the unity of tongue, customs and outlook, they realize that they have a lot in common, that they are all Germans and can sympathize with one another without any concern for territorial misunderstandings and dynastic rivalries. The crossing of the Atlantic, as you see, replaces the beneficial dipping.

The principal and almost only aim of worker bees' activity is to rear the young generation. Their respect for the insignificant personality of the queen and their tolerance of the idle voracity of the drones is explained by the fact that they see in the queen their only hope, the future mother of the whole offspring and in the drones her necessary collaborators and, therefore, an inevitable evil without which their state system cannot be maintained. The personality of the nurses, who are chosen from the workers, is an honorable one: they are exempted from flying out to get their food; they are fed by the state; they are respected and cherished by the other bees in spite of their physical puniness. If we consider human society and think of the importance of the teacher in the state, society and family, we will be forced to admit that bees understand the importance of education better than we do. But we must not be too enthusiastic over the virtues of bees; suppose you live only to educate your son, your son lives only to educate your grandson, and so on; each individual generation first gets itself ready for life and then prepares others for life, but when will they have time to live? And why prepare others for something that they will not be able to enjoy? The bees do very well to show great concern for the well-being of the young generation, but to be castrated for the sake of the offspring, so that it in its turn will emasculate itself for the sake of the following generation is, if you do not mind my saying so, monstrous, and in this respect we are not so stupid as bees. The most ridiculous thing in the life of bees is that they probably presume that their self-sacrifice is great and noble, as if they were sacrificing themselves to provide happiness and enjoyment for others, whereas, in reality, it turns out that only the drones and the queen, i.e., the most useless, vain and least conscientious in their society, derive any benefit from their labors and sufferings. It seems that idealism and doctrinarianism which has lost all contact with life are very common diseases, and man, who considers them as great privileges of his race, can and must admit that they exist even in tiny insects. Probably the bee, like Plato and Hegel, builds her own world system in which she is the centre of everything that moves and lives, and yet, while she wastes time on these serious occupations and drifts into the boundless sphere of pure thought, she resembles the great lights of poor humanity and either does not notice or does not wish to notice that the honey which she obtained through her labor is stolen from her and her sexual organs are systematically mutilated. When she happens to notice this fact, she makes a sudden turn-about, but idealism, or—what is just the same—confusion, wins the day, and after a certain amount of agitation, the bee world settles down in the same old rut as before and ossifies within the old framework.

## **Part V.**

The queen of the bee kingdom is extremely good-natured and mild as long, as she lives in the hive, i.e., as long as she neither has nor foresees any rival. Her feminine gentleness is illustrated by her friendly relations with the drones and the calm majesty with which she accepts expressions of devotedness in the form of drops of honey from the lowest of the proletarians. Her good nature does not forsake her even when she comes into contact with



man, the fiercest exploiter of the bee world. You can take the queen in your hand, stroke and caress her with out any fear of her sting; for this reason scientists of old even presumed that the queen had no sting at all and that her regal person allowed her subjects to beat back the external enemies and punish the violators of public order. This is indeed so in the majority of cases, but there are also times in the queen's life when passion is stronger than the stipulations of etiquette, drowns the voice of regal feeling, and turns the mild, majestically calm, femininely tender creature into a kind of Lady Macbeth, a Medea, or, in general, to something like the characters that are to be found only in the most perverted human nature. Woe if the queen begins to fear for her sovereignty, woe if she sees or has a foreboding of a rival. Two queens are as incompatible as two suns on one horizon; they hate each other like ambitious rulers and coquettes; each loves two outstanding features in her situation: the devotedness of the proletarians and the chivalrous courtesy of the lord drones; both proletarians and drones must belong to the queen alone and undivided; the former are the material support of her domination, the latter form her harem, in the midst of which she drops a handkerchief and makes now one, then the other, happy.

Thus everything goes on in calm and to the common satisfaction of subjects and ruler, proletarians and lords, but suddenly news comes to the queen's chambers which more or less bewilders and disquiets all of them; there is nothing unexpected in this news and yet it always makes a profound impression. The news is that one of the pupae is becoming a queen bee and is gnawing through the wax lid of its cell; the nurse in charge of this cell reports the event in the appropriate quarters and the news flashes like lightening to the most distant corners of the bee kingdom. Rumors and discussions begin to spread. The young inexperienced bees display nothing but curiosity and alarmed joy, the old proletarians, who have seen grief and joy, state upheavals and scenes of gross violence in their day, anticipate what is going to happen and confer among themselves, in their indecision; there will certainly be a clash between the old queen and the young one. Who will come out victorious and whom should they support? The ruler whom they have served with such devotion and who has rewarded them with such favorable regards, or the young creature who has grown under their attention, fed by their care, fostered with their love? While the good worker bees are wondering and puzzling, the old queen quickly decides to act. With her retinue of servants and drones she hurries to the cell, around which a crowd of workers has assembled, waiting with reverent impatience for the solution of the portentous problem. It is not love for the daughter who is being born that brings the old queen to her cradle; she approaches and sees in her daughter her most dangerous rival; the jealousy of the female and the ambition of the ruler speak within her; her irritation is manifest in her haste, her trenchant gestures, her lack of attention for the groups she passes, gathered around the fateful cell. The worker bees have a presentiment that something evil is brewing; the young proletarians, who are childhood companions of the young queen, cluster instinctively nearer to her dwelling and endeavor to cut off the mother's approach to the newly developing creature. The old queen wishes to pass them, but they do not let her; if she succeeds in overcoming their resistance she will go right up to the cell, introduce her sting into it and kill her daughter before she has had time to see the world and enjoy the fullness of life. But in most cases the good-natured workers are the stronger: they succeed in restraining the infuriated queen and, not knowing what to do, listening to no exhortations, the wrathful queen is convinced that the end of her rule has come; she is plunged into impotent despair and runs aimlessly all over the hive.

The matter ends by the old queen and her faithful retinue and loving drones leaving the hive and flying away to seek happiness in the blue distance, in a natural hollow in a tree or in an artificial hive. Meanwhile the young queen emerges from her cell in the fascinating freshness

of youth, ignorant even of the danger from which the self-sacrifice and devotedness of the good-natured workers have saved her. The bees who have remained surround her, and her first impression of bee life is the inebriation of triumph and power which she herself did not make a movement to acquire. She looks round, sees her superiority over the lords and proletarians surrounding her, asks herself in alarm whether she alone will enjoy the glamour of 'power and respect which has surrounded her from the first moment of her conscious life. The very instinct which urged the queen mother to attempt on the life of 'her daughter and then forced her to leave the hive with her supporters, appear and develop with amazing rapidity in the young queen; she surveys all her domain, goes up to each cell where her young sisters are developing, stabs them with her venomous sting and thus kills all future queens so as to have no rivals and reign with undivided sway. It sometimes happens that two young queens emerge at the same time from their cells. In that case the old queen does not even try to kill her successors; she gathers a small group of faithful veterans and beloved lord drones and flies away with them to a new residence. As for the young queens, they naturally cannot live together; the ties of blood are powerless when it is a question of sovereignty, one of the two must perish, because neither will agree to yield of her free will and found a new colony. Neither the workers nor the drones take part in the fight between two queens; the struggle for mastery is of interest only to their two persons and it is decided by a duel in which nobody begs and nobody grants mercy. The rivals go up to each other, bite each other, trying to wound neck, head or legs, and to daze each other with the beating of their wings; they butt each other with their heads, tussle with their legs and seek a convenient opportunity to stab the enemy with their deadly sting. They aim at the interstices between the horny plates protecting the thorax and abdomen; the neck, the joint between thorax and abdomen are also easy to pierce, and at these parts, too, blows are directed. Finally the duel comes to its tragic end, the mortal weapon finds its target, the wounded queen falls. The agony is not long: in an outburst of proud joy the happy victor jeers over the corpse of her slain sister. Now she is alone, the ruler of the hive; the workers cluster round her and acknowledge her supremacy. But at the beginning their sympathy seems rather half-hearted. The fact is that the young queen has committed a series of crimes and has not yet given any sign of her qualities. The worker bees saw the cruel logic with which she destroyed in their very cradles her presumptive rivals, the same innocent babes that they, the workers, cherished and fed; they saw how implacable she was in the duel with her twin sister, for all that happened under their very eyes; but nobody can as yet judge how much benefit the young queen can bring to their hive. Her mildness, her justice and—the main thing—her fertility, are still absolutely unknown to the worker bees. That is why a torturing doubt restrains the manifestations of their assiduity and they bow to the new queen with a frigid reserved courtesy in which one can feel the unspoken question: what will the future be like?

But the lord drones know no doubts: they are not interested in the prosperity of the hive, they only see the person of the queen, and when the quarrel over the succession is settled, they vie in declaring their profound loyalty. They deafen the queen with buzzing flattery, lick her back, head and legs, clean her wings and antennae with the brushes on their legs, and speak to her in a lively language of mimicry. In short, they display what for them is unusual familiarity, spirit of enterprise, and energy. At first the queen finds all this court ballet very strange. Like Elizabeth, the virgin queen of England, the young bee queen is somewhat cold and even outraged at the passionate and often too bold compliments of the court drones. She some times thinks of using her venomous sting to scatter the brilliant crowd of importunate fondlers and courtiers. But, as you know, life soon stirs us; the passions awake one after another; ambition, which was displayed in the young queen by her bloody feats, is followed by sensuality; the passionate caresses of the drones develop and strengthen it; the girl

becomes a woman; this inexperienced, shy and bashful creature begins to have a presentiment of the fullness of sensual enjoyment that can be got from life; the drones surround her with unrelenting entreaties, now timid and respectful, then passionate and exalted. Her heart is not made of stone; the queen submits, she arranges a court fête and flies out of the hive amidst a jubilating throng of drones to gambol in the pure air among fragrant flowers in the surrounding clearings, meadows and plains. Elizabeth finds her Leicester.

What happens at the court banquets and picnics is a thing no naturalist can tell us. One cannot keep under observation a few score of bees who have left the hive to frisk and gambol; the common mortal cannot delve into the secrets of the queen's heart; the corollas of the flowers among which the drones revel with the young queen preserve no less profound a silence than the deer park at Versailles. We can presume that during these revelries the queen enjoys herself to her heart's content, for she returns exhausted, worn out, and covered with dust. Whether one single drone is the exclusive object of her favors or whether several lucky ones share this great honor is a question which will remain unanswered for man as well as for the mass of citizens in the bee state. Anyhow, the citizens have no concern for that; they devote just as little attention to the drones as before, but they treat the queen with the most affectionate and respectful tenderness. So far, of course, they have not been able to note anything particularly comforting in the queen's personal character. The cruelty that she displayed in killing her potential rivals yielded to an unbridled outburst of sensuality. I do not know whether sensuality is considered a great quality in the bees' moral code, but there is reliable information that for about twenty thousand females who make up the bulk of the hive's population, there is only one who is the depository of that quality and that single female is the center from which radiates and to which converges the whole activity of the hive.

Bees apparently worship the productive force of nature; in this respect they are at one with the ancient peoples of Asia Minor; the queen is to them exactly what the goddess Astarte was to the Babylonians and Assyrians—the symbol of the principle of female fecundity. The bees' worship, however, has as its object not some fantastic character personifying an abstract idea, but an actually existing individual; it is closely linked with the idea of the state and is determined by the social system which the underdeveloped bees consider necessary for its prosperity. The queen is a sort of Dalai Lama; she is considered an object of primary necessity; her person is sacred and inviolable; each of her subjects, the poorest of the proletarians, regards it as her most sacred duty and greatest delight to make sacrifices to her, to offer her a drop of the purest and sweetest honey on her return to the hive from work in the fields. This is done not by calculation or the desire to curry favor, but with the most artless and naïve religious feeling. The proletarian considers her queen a superior being and in this she is fully justified. Every day before her eyes the queen works wonders which silence even the most obstinate doubt; she lays eggs, i.e., visibly accomplishes feats which not one of the numerous inmates of the hive feels capable of. Every day she brings into the world up to two hundred beings like herself, and this goes on, not for a week or two, but for two whole months. The queen creates, but the proletarian only works; how, then, could the proletarians not feel crushed and admit all the queen's greatness and their own insignificance?

No skepticism can withstand such obvious and continually repeated proofs, and, indeed, there are no skeptics in the bee kingdom. And why should such unruly and ill-minded people be suffered in a well-organized society? When the queen returns to the hive after her first picnic, the proletarians begin to believe in her; they know that the results of her absence will soon be visible; they know that the queen will soon begin to show concern for the increase of the

population and, therefore, seeing her as the future mother of the young generation, they show solicitude for her health and tranquility, they manifest the most heartfelt respect and the most touching, though at the same time the most reverential sympathy. The workers throng around her and solemnly carry her into the hive, lick her and clean her, feed her with their proboscis and inform everybody of the joyful tidings: "The sovereign has deigned to contract wedlock with one of the noble lords." The epithet lawful is not added to the noun wedlock, because for bees, every wedlock which takes place is natural, and therefore lawful. The name of the happy chosen one or ones is not proclaimed either, for nobody is interested in it; the bees serve the cause, not persons, the important thing is the fact, not the circumstances.

The usual course of affairs in the hive is smooth, calm and as regular as clockwork and disturbed only occasionally by unfortunate eventualities. The queen, notwithstanding her exclusive situation and the creative power with which the generosity of nature has endowed her, is subject to the same laws as we, common mortals. Like the most insignificant of her subjects, she may fall ill and die, leaving her hive in the most helpless situation at the very time when it most needs her for hours for the common good. A boy can crush her with his hand or a flapper, and it will not occur to him that he is causing the horrors of an interregnum for a whole people or at least a whole town. When a queen dies after laying eggs, which can in time develop into new queens, there are no horrors, everything continues with the same orderliness as before; the same bubbling activity is to be seen everywhere, and the nominal queen is the oldest egg, the oldest larva or the oldest pupa. This nominal queen generally becomes the actual queen, because, developing earlier than its sisters, it has time to kill them all and therefore becomes ruler of the hive. One cannot even say that the time during which an egg or a pupa is considered the queen of the hive is a particularly bad one for the bees; neither an egg nor a pupa needs food, public expenditures therefore obviously decrease; on their return to the hive the worker bees necessarily keep for themselves the best drops of honey which they would usually offer their sovereign in an outburst of reverential zeal; thus, there is no disadvantage for them. But their assiduity is above all calculation and the voice of common sense; they await the appearance of the new queen with supreme impatience and greet it with the most joyful buzzing.

If the queen dies during the time when she lays only eggs out of which worker larvae can hatch, there is disarray in the whole hive. The principle of religion and monarchy must be saved cost what may; the bees cannot understand life and see no salvation outside the age-long accepted standards consecrated by thousands of years of existence. There is no queen and there is nobody to replace her—what must they do? The only thing is to try whether by careful tending, select food and intensified unrelenting care, the plebeian nature of a common egg can be ennobled, and whether the wonder-working virtue which creates beings to its own likeness and which the artless inhabitants of the hive worshipped in their former queen cannot be developed in the future larvae. Extreme agitation at once takes possession of the hive. The partitions near the cell where the fortunate egg which is to be turned into a queen lies are broken down and the place is cleared; the dwelling is enlarged, and the larva which is hatched from the egg begins to enjoy the comfort, roominess and cleanliness which are indispensable for the development of the sexual organs. In order to provide against any eventuality and prevent the death of the chosen larva from leading to a new interregnum, the workers do the same with several eggs, and several queens are thus prepared at the same time; later they will fight between one another with their weapons for sovereignty in the hive.

Internequine struggles are not dangerous for the hive because they take the form of duels in which the worker bees and drones have no part. As soon as a queen emerges from a pupa

which was initially intended to become a worker bee, she begins to display the same tendencies as her predecessors. She engages in the same deadly tussle with her rivals, if there are any, and destroys in the embryo in exactly the same way anything that can be of danger for her unlimited sovereignty. Then she receives the courting of the drones in exactly the same way, arranging a picnic and entering into wedlock, and the life of the hive resumes its former course.

Bees have a sort of instinctive understanding of the importance of material conditions. In order to develop certain propensities in a young being and to strengthen in it the qualities which it will have to apply for the whole of its life, they begin to feed it with a definite kind of food, allot to it a spacious dwelling, take care of its cleanliness and perfectly achieve their aim; out of a modest, hard-working, impassionate and good-natured proletarian, they make a proud ambitious queen, cruel towards her rivals, absolutely incapable of work, but, on the other hand, extraordinarily fertile and prone to sensual delights.

With their sober outlook bees could make magnificent discoveries in the field of natural science, but unfortunately their concern for their daily bread absorbs all the living forces of the thinking portion of the bee people. They have no estate of scientists, no academies or universities, they have not even any embryo of literature or poetry. They do not draw even the simplest conclusions from facts that are constantly before their eyes; they cannot, for instance, reason as follows: a worker larva can turn into a queen if I feed it with good substantial food; the queen is therefore the same as a worker bee, only she is better fed and more developed; why should we not feed all alike, so that all may enjoy life equally and bear children? The bee is absolutely incapable of reasoning that far, probably because her urgent work leaves her no time for philosophy. “Le travail est un frein,” (“Work is a bridle”) Guizot said in the thirties, and that saying, which he magnanimously applied to French craftsmen, is valid for insects as well as for human beings. Oppressed by work which gives them neither rest nor respite from the moment of their birth, the proletariat of the bee kingdom sets up no social theories and does not think of the meaning of life; the result is that the forms of existence in the hive remain unchanged, invariable and motionless. There is no motion of thought; the constant progress is imperceptible; not a single usage, not a single institution seems antiquated or is replaced by a new one. But calm is maintained in the hive only as long as there are sufficient supplies, as long as the hive is surrounded by meadows in bloom where thousands of bees can find abundant forage every day. The rainy autumn no sooner sets in, the field flowers no sooner fade and shed their petals than the inmates of the hive feel uneasy; economic difficulties arise; the drones clash in their interests with the proletarians, and this clash leads to terrible bloodshed, which clearly proves the worthlessness of the constitution by which the hive is governed.

## **Part VI.**

It is not out of place to note that the stock of honey accumulated in the hive belongs to the worker bees, who defend their property with might and main and allow nobody to take possession of their economic supplies. Nobody makes up his mind to do so as long as the surrounding meadows are covered with flowers; the drones then go to breakfast and dinner outside the hive. But as autumn sets in, such a way of life becomes impossible; the worker bees themselves often return with an empty stomach and no honey or pollen on their legs; the noble drones, who are heavy on the wing and do not like to be away from their home in the hive for a long time, find nothing to feed on, and after circling over the yellow grass, they return hungry and dissatisfied. Then there is agitation in the hive the meaning of which can

be most palpably conveyed in the form of a conference and negotiations between representatives of the different classes, parties and views in the hive.

The drones assemble in groups and hum querulously as they convey to one another discomfiting reports on the sterility of the surrounding meadows and still more discomfiting opinions of the starvation they can expect in the circumstances.

“We are the privileged estate,” one of them exclaims, proudly preening his wings, “we enjoy the high favors of our gracious sovereign. The workers must show concern for our situation. That is their explicit duty; during the summer they collected a large quantity of honey, and we should have our share of it. We have by birth the right to profit by the wealth of society. Now, most unfortunately, we see how the uneducated mob doubts our right. The worker bees think the stock belongs to them alone, because they alone gathered it and stored it in the cells. They are obviously turning the very foundations of logic and right upside down. Those stocks belong to society, and our bee state has the right to dispose of them according to its discretion to cover its essential needs. And must not the maintenance of our life and welfare always be considered an essential requirement of the state? Can a hive exist without drones, with out a governing estate? The stocks are ours, ours first and fore most. Once our existence is guaranteed we shall be willing to give part of the excess to the poor hungry workers, but we must first appease our hunger and assure ourselves food for the f u hire. Let us go to the queen, expound our wishes to her and submit our declaration of rights to her consideration.”

The enterprising orator’s speech pleases the audience: it conforms to the needs of the time, it provides a satisfactory settlement for the terrible problem set by circumstances: to eat or not to eat? and it consequently meets unanimous support.

The deputies from the noble estate of drones go to the queen and she, far from devouring them as the inhabitants of the Sandwich Islands devoured the European parliamentarians, is very gracious towards them and listens to their most humble petition with great attention. Then she answers in such a strain that the lord drones could wish for no better.

“I have always been convinced,” she says, casting a glance of good-will on all present, “that the stability and prosperity of the state requires that there should be a hereditary estate of peers; if that estate is eliminated, all the governmental foundations of society will fall to ruin. You have served me faithfully, you have shown devotion to my person, and your valor fully entitles you to a reward. There can be no doubt that you, be fore anybody else, have a right to enjoy the stores that have been accumulated. As your sovereign, I give you my word of honor: your interests will in no way suffer from the calamity that has befallen us. Do not heed the murmurs of the worker bees; their function is to work, and as long as they carry out their duty with the appropriate assiduity I shall maintain my gracious attitude towards them. But you, my peers, must not be concerned about your food; you have a higher and more noble calling; do not forget that; leave the petty worry about your daily bread to the lower beings who are less ennobled than you by the gifts of nature. To conclude I express my sincere gratitude to you, my lords, for applying with such confidence to your queen.”

The drones jubilate and glorify the grandeur, magnanimity and statesmanship of their sovereign.

Meanwhile the proletarians, alarmed by the withering flowers, likewise gather in groups to confer.