The sweetness of honey makes you, Pliny, master of the pleasing natural science, you who have made known Urban bees and Barbarian bees. Indeed you have perceived nectar, that nourishing fluid diluted by the dew. You have distinguished Urban bees by their customs, virtue, worthiness and barbarian bees by their swarms, purity, and harmony in singing.

Recall the greatest Urban bees. For example, it is asserted that ancient philosophers followed their swarms even to the Prophet Energia, and that they reached the oracle itself. Behold, indeed, you have Urban bees who, according to the extent of their honey-making and by the airy nectar flowing sweetly from the most virtuous hive, are resolved that good deeds might bless whatever place they are in and that they might favor good and learned men.

Look to the bees as excellent examples of how social intercourse should be set up. Certainly they suggest to the world a moral philosophy. Also, learn purity of morals and honesty from these swift-flying creatures, who attend to their home and family, who attend to labors, work, arms, defense, and who attend finally to the procedures of civic life.

Marvel at the duties of the king. Marvel at the duties of the populace, of parent and offspring. Marvel at the customs of the little animals everywhere. The master, who has power both by endowment and by his own virtue, who labors in giving laws, in ruling, in fostering, in directing, in encouraging, who begets offspring, who gives education, who makes the labor productive, is the father. The people are offspring who obey, guard, defend, and follow; they also do not suffer the master to be disturbed by the eyes of strangers. They are offspring who lift him up and carry him on their necks and shoulders. They consider the fledgling kings equally worthy of their veneration. They are continuously engaged in labors and duties allotted in the best manner according to the norm of instituted social intercourse. In accordance with what is right and proper, they have guards, a time to sleep, a time for meals, regular hours, rank, and even customs, as Pliny says. Since they will not tolerate the lazy or the wasteful in their home, they chastise or destroy those who have crowded together or who have ceased working. However, they always accompany their worthy companions in their mutual duties, even to misery and death.

If the militia, which either invades (another country) or defends (its own), depends on strong men, on prudent counsel and instruction, and on appropriate strategy, go to the king, the leader, the military, the bee: consult the bee. Fear is absent (in him); present are military art, the line of march, military rank. Bees are in agreement among themselves and therefore they are obedient to their superiors. Any reason for going forth, even the barbaric name of the Cimbrians, leads forth that line of march, the marvelous expeditions, and even the movement of the troops. There are camps, and there are those who guard and defend them. In any soldier you see that there is such strength and such fortitude that although he lacks the iron weapons such as we who are not armed by nature use, he is able to cut down and overthrow the enemy with weapons implanted (in him) by nature, and these weapons, as sharp as can be, make up his power in invading, as we have seen. Furthermore, they do not spare themselves very difficult tasks as when they employ their strength in pushing forward and cleaving through wooden objects. They do not tremble at the size of animals larger (than themselves), and they even attack men and horses who threaten harm. Now they have never conceived any anger against harmless things, and they have never harmed anything outside battle, for that is justice in war to the bees. The cause has been noted by Hermonactis. We know that they killed three who were sent among them, that they killed the lord, drove away the rest entirely, and delivered their home and master from the invading robbers. Scaliger notes both the unfortunate horse and the unfortunate inexperienced rider. Certainly there is virtue and strength in military bees.

(Bee hives) have hexagonal cells with regular sides, like those which one might observe in the supports of a bridge. No carpenter's rule has been applied in the building; however, it is so carefully constructed as anything to which such a rule has been applied. Marvel at the most artful plan of the substructures and of the suspended buildings, the joining and equality (of the sides) without any weight or danger of collapse. These homes have been elegantly constructed, located and furnished so that the family might live together as is right and proper, just as the home is constructed according to what is right and proper. There are royal cells, citizens' cells, plebian cells and servants' cells placed in order. The family formed in a manner in accord with the dignity and worthiness (of the inhabitant) and with the plan of the work itself. Under the ruined exteriors of collapsing cells are placed pasts, foundations and props by way of repairs. From this Antoninnatticus we have the name builder in admiration. People praise the architecture and mathematics of the bees, and those are disciplines in which so many are unskilled. Bees also have military architecture, that most useful art of fortification, more ancient perhaps than any art you might find among men. It is practiced methodically and diligently according to natural science in the materials employed and according to mathematics in the order of the forms of fortifications. You will see (these arts) if you consider what they draw up all around and what they heap up for shutting out (enemies) and repelling all harm and also if you consider the tubules made of stone, the constricted openings, and the many things of this sort that are in beehives. Turn your attention to statics. If you seek out (some bees) which are apart from the rest, you might creep upon them gently while they lead themselves with small pebbles as ballast against the furious force of the wind. Consider astrology, if you wish, for it is not at all vain or superstitious (although it is often ridiculed as such among men and is considered vain and rash, a thankless pleasure, among the chief and the princely court), but it is the order of the times according to the very stars and the rules of the atmosphere, from whence comes foreknowledge. Add also the vicarious uses of light that you might wonder very greatly at all astronomy, especially in the older bees.

So that you may believe that they have been instructed in the arts although they do not attain the Peripatum of natural philosophy, see what flowers they taste. Consider all things concerning the honeysuckle. You might be ignorant because it is wont to flee from men in so abundantly, you might have doubts about how and from where, physiologically, honey is made and how wax (is made), for both of which many uses are always at hand. Most people and many famous writers are ignorant (of these things). You must admit, however, that it must be well known to the bees, for they swarm together from all sides, and they pitch (the wax and honey). They learn of the sap, the juices exuding from certain plants, flowers, and fruits. They do not wander among different kinds of plants; indeed they go from violet to violet in an undisturbed order. They chiefly seek friendly places. We see swarms around the tuberose called iris, and around orchids, which are remarkable for their parsley-like flower; also we see them all around the acorn which, since it is so small, is called bee's penis. And now the aromas of clover float to them. You might correctly say that the more interbal arts, all of those which are more important to the bees, came to the chemistry of the world, the knowledge of botany, according to which (the bees) have extracted this most excellent fluid throughout the ages. For that purpose and for their collections they have foreknowledge of the weather and of the order of places, and they always know those things which are unknown to or greatly disputed by meteorology.

Indeed, you have never clarified or drunk gold by chemistry, except in the feverish fantasies of a spirit hoping in vain and knowing more of Chimera than of chemistry. Behold, bees distill the most outstanding nectar, the sweetest and most harmless of foods. Drinks and medicines for others, and they do so far more than the Pharmacy of Olympian(alchemy, which is) on the one hand all smoke, or on the other a stone (the philosopher's stone) is public, hardened by the fires of the vulcan. Bees have what you may call both gold and potable, and it is not so costly nor as laboriously (gotten).

What experiment can be greater, according to science? What deed can ever be more outstanding in physical science or in a wise man whom people consider most trustworthy learned in the investigation of nature? What, finally, can be more marvelous than to know so completely one's own nature that one might compose from selected materials, bring to perfection, and bring forth into life by his own hands offspring similar to himself. To what animal, either the most skillful or the most perfect, is that (power) given? Is not the *Homunculus* of Paracelsus (a man) whom some call the *Hydromanes*, a fiction of science, and will not many others ridicule) more to be laughed at than he is able to laugh? The little bee, who has certainly been constructed and begotten by the bee, surges forth like (its parent) to its work and flies in the same manner (as its parent). Behold the admirable duty of consuming tender buds and the flowers of plants (which are) the sun. *If one listens to Hesiod*, the Theogony-gathering; then they are honey-flowing, honeycomb-flowing, the mother of honey, or, in filling themselves, the effectrix of divine honey. In their beginnings, both the tiny one-like juices and the flowers are engendered by the sun. *If one listens to Homer.* This very small bee is adorned by many great titles, which are certainly merited, and even the small size of bees praises them the more. You must admit (that their smallness) is an argument, and you assert from the nature of the bees, that the chemistry of the little bee or from the emulation of their customs. Pliny had his argument for admiring them from these things.

The bee is destroyed if you crush the summit (of the hive) See the height to which the mound rises in accordance with its praiseworthy custom; yea, the bee is praised for wisdom, prudence, counsel, industry, labor, business, concord, piety, temperance, cleanliness, frugality, the greatest usefulness, citizenship, natural science, especially for all arts of ruling, the state, and invincible justice. Indeed (the bee is the subject) of such praises from all sides. Thus this phalanx of virtues, admirable in itself and of so great a number as can scarcely be counted, Pluratsb says in one word, *Apiarius*.

From no other place except from the beehive itself, whose pleasant and sweet flowers the West Wind brings forth and nourishes, can you be favored by the name of the deity Favonius by the deity himself. Make the bean Pythagorean vest, according to etymology, and add this cause of friendship. Then the West Wind and the honeycomb promote best and most the celestial, perpetual nectar-like juices.

Jupiter Meliseus is the benefactor of bees, of the bees of Mount Ida and of Melissa herself from whom, as forebear, [we have] the name of the species. Jupiter, who by the industry and kindness of the bees was nourished by honey and protected and preserved from the cursed teeth of his offspring-eating father in a cave of Mount Ida, made a danger nothing greater than which can ever be undergone or imagined. No remedy for this evil, of which there was no knowledge but only suspicion beforehand, has ever been devised. This kindness of the bees is more important than either their internal defects or those imposed upon them. More powerful than the bees of Mount Ida are the Urban bees who by their outstanding virtue are able to nourish and to liberate, not only in a cave but on the summit of the globe, anyone who flees to them. By the greatest probity and by the sacred laws they are able to exclude, drive out, and exterminate any evil whatever, protected as it may be by any cover and even concealed in the hidden center itself.

What of Garopine, the diviner of words? From his ancient Teutonic voices he calls forth genuine praises of these living honeymakers. You can picture to yourself the Bie, *if not very elegantly certainly very accurately, by admiring the mysterious and the ordinary productors of good things of the greatest artisans Beelzebub and Beelzebul, bee princes because bees offer and hold out many things to us. Meanwhile you reveal the mystery to us. To bring forth and to rule are parts of the same duty and are reciprocal because he who rules all things brings forth all things in the same way, and he who produces rules. The* Bie *to the Belgians, the* Bien *to the Germans, bees, the most beautiful models of power, always produce the fruits of labor most abundantly. They give us honey as food, honey and wax as medicine, wax for the most sacred and solemn of services, candles for the soul, also many clear admonitions both by their good name and by their omens. Certainly the very best things [come] from bees.*

An animal might not be munificent enough to have been known to Pliny, or rich enough (to have been known) to Lucan. We see that bees and the family of bees are most useful to the home and to many other living creatures. Indeed one may most aptly call those things which we acquire from their beneficence riches. Completely without recompense they make honey for us. They endure labor of a thousand uses in life, as indeed I read in Pliny. They demand nothing for themselves in return for their labors or daily works. They have neither pasts nor the necessities of life, neither flocks nor shepherds. Accordary to Aristotle they do not harm any fruit, and according to Pliny, if they brush against anything while they are gathering the most subtle juice, they do this so lightly that they seem scarcely to taste the flowers. They do not disturb, destroy, or usurp anything. They work harmlessly. They gather the flowing treasures for the lord, not to cause injury or damage to anything. Your works are always multiplied into greater profits by the marvelous propagation of the swarms. You will add as much as ten thousand *sextertia* a year to your riches from a small field where beehives have been placed there, and you will have thousands of pounds of honey yearly produced from this kind of field. You have heard Varro and other teachers of agriculture marvel at these things. You have many things if you have bees. Marvel at the thrift of bees, for they collect their fruits] without expending any produce of the field and without any other expense. Finally, we must bear-witness to the many resources bestowed by bees and to our enrichment from the resources of the bees. Certainly from greatness you know how easily a little letter might be altered, from the most witty Plutarus or Plotus, or in Ida and *aula*. Bees certainly produce sweet resources, an opulent plenitude of sweetness.

What products do you have from bees?— honey, wax, *communio*, *propolim*, *pissoceron*, *eritbacen*, even honeycombs. These things certainly bring together the most excellent juices, material most useful to you not in one way only or for one faculty only but indeed for the greatest benefit to the entire body. But if you stand off and look, there are better things, more worthy things, and sweeter things than they instill in the mind. From the moral and political sanctuary of nature they are warnings, examples, and signs. They have given stimulus to undertaking the paths of virtue and work and against any laziness whatsoever and the defects of idleness. These things are able to pierce the mind itself by a long and very strong sting. It would be a shameful thing if the smallest animals should surpass human nature. While the bees heap up riches of which you can suck and eat honey. Add to this the honey-flowing *Meli* from Mexico, that celestial food of admirable growth, which has carried the name of honey and the thing itself across the pillars of Hercules. It has much honey and no aloes, unless one uses that inappropriate word because of the empty spiked leaves of the *Phytonomorum*. There are Livonica and Lithuanica from whence one can have the most abundant honey. If, according to the witness of Cordus, there is very little moisture in those regions, where can you get honey except from plants? Behold the honey-producing stems: behold the honey of the earth and the honey within flowers and plants.

Who would not praise and love you exceedingly, Pythagorean Melissa, you who have turned mortal men from the eating of meat and from bloody, fleshy food by [bringing] the celestial food. You brought the food by which those long-lived fathers remained so long in health and life and which active old men, guided by the reason of philosophy, used, the drink by which Democritus, Antiochus the Physician, and Romulus Pollio overcame the aging effects of their years. Why do you praise wine sweetened with honey? Why pass over in silence anything as sweet as honey? Should we not mention those long-lived Cyrnic honey-eaters, or the gods, blessed, beautiful, and long-lived even to a thousand years, and also those Orphics of Macrobius who

_____ drink both the sweet foods from earthly grasses, And the ambrosial juice from the perennial bee?

Or Aristoxenus, for whom honey daily prevents the access of disease? Behold indeed the vital juices. Do not other foods and all drinks owe gratitude to them? Men are accustomed to partake of them whether they are injected by art or added by nature as far as they creep into living food and other things that are used. Honey is entirely nutriment; all nutriment is sweetened with honey. Honey is so simple that it may be hidden more or less in all things, mixed so thoroughly with them that it might appear nearly physically similar to wax and particles when they are brought together in equal parts (with it). That honey in which the water evaporates most easily has a valued rather more dearly, and it is thickened finally so that one batch contains the greatest spirits and forces of many [bees] who have made it, and as a result it receives and gives forth (these forces and spirits) most strongly. From this honey there is complex healing energy, but also there are more numerous uses. If you remove the dew of honey and the honey from flowers and reeds from Melitite and Melicratum and from healing waters and from *Sarmatic Hydromelite*, *Medon*, *Calabrian Metoglin*, or *Hispanic Mel*, you will have removed all foods which have medicinal value. Thus there would be scarcely any food and even much medicine. There is nothing compounded by art which cannot be brought to perfection by this nectar. The Egyptian ancestor of the bee is said, not undeservedly, to have invented medicine. Your bees, in thick swarms around the funeral rites of Hippocrates, the father of medicine, not undeservedly sitting on the sepulcher, intended to escort it and to adorn it. These preservers of life, bees, deserve to be praised by greater titles than those of honey alone, since health is preserved by honeyed food and restored by honeyed medications. Certainly the nature of the eternal skies, praised by the sacred prophets, which one might say is like a thick embodied honeydew, can be represented by nothing more like Persperseus as very pure and immutable air with its own special law, but nevertheless it is able to breath forth an odor. Iatro-chemistry also can breath forth marvelously.

You are indeed amazed at these juices from the sky, Pliny, which are certainly celestial in [their] excellence. At the same time you grieve because they become soiled, falling from such a great height to the lowest earth, and because the juices of honey are so quickly lost. You praise the aetherial liquor which falls from a dry sky, the perspiration of the sky, the saliva of the stars, the juice of the air, and afterwards you restore the juices of the sky having condensed into drops and the sweet dewy saliva from the stars and the waters of the sun. Our ancient learned men, now this one and now that laden with titles, praise the drops, the effusions, the harvest. And at the same time they sing of bees the celestial fluids which bees most elegantly for their care, their harvest, their conservation; they praise the collectors, the guards, the administrators. The pleasant, the fertile Calabria awaits the manna-like flowers from the sky. India awaits the pleasing juices more moist than the flowing saccharin. You certainly recognize in the honey-sweet dew of our native land, which is sought after by the little bees, the honey-rain from the sky which Galen tells of. And you must have heard of the golden showers of Jupiter pouring forth onto the chaste bosom of Danae, as Horace tells, or the golden showers that were sent to the Rhodian city at the birth of Minerva, as Callimachus says, or golden showers like the great auspices at the birth of Hero. They rain likewise on us, but they are not heavy with the splendid weight of golden coins. Honey, by its outstanding sweetness and by the nectar sweet effusions of good things, can bless and nourish our generation with much fruitfulness in every way.

Why, however, should we refuse these pleasures and riches of the earth? The flower is the mother of honey; it is the nurse of bees. It is proclaimed not only by the name of its fruit but by the name of bees, and according to Herodotus, there is the Scythian *Exampaeus*. They found the best honeys there where they were gotten from the little casks of the best flowers. But there is a not slight danger that nothing can be drawn out of the diverse vessels on account of contraction except by the most facile talents. Indeed the vessels are not both sweet and full at the same time just as they are not both large and small. They might have bitterness from the plant, sourness from the absinthe, for which Sardinian honey is found fault with, and from the *colchicum* uneven quality from the boxwood and the *Anacardia*, and worse things from the oleander, perhaps even the insanity that is known as *Memenomenon*. Finally they might have a stench from wolfbane or from the flowers of the chameleon plant, as Bellon believes. For these reasons all honey of the Sanni and the Heraclestic Pontus is rejected. One obtains *galbeanarium* from the galbaniferous stalk. Moreover, just as honey from the heath is less watery in accord with its sandy nature, and honey from the flower of the Sorb is watery, according to Varro, it is known that bees make thick honey from rosemary. Some honey is fluid; some is very thick. The most outstanding honey is that from the silver mines of Hymettus, according to Strabo, which you value as much as silver because it is made without smoke. It might be pleasing to dwell on the honey in the plants themselves and even in lesser things. You know that honey is pressed from flowers by the tyrants of the Troglodites, that it is made by the same art from palms in Assyria, and that Saccharin comes from the reedy indigo; according to Statius. Add also the honey from the highest branches of trees, which produces madness in the Pompeians, and honey pressed from the pods of *Ceratia* and that honey which the honey-making *Xizanthenes* in Africa, emulating bees, make from flowers. I name manna and *Meliaccarum* which are produced from cut trees, and also the birch of the Germans flowing with honey-sweet juice. Below these there is the grass which we call nectareus from which you can suck and eat honey. Add to this the honey-flowing *Meli* from Mexico, that celestial food of admirable growth, which has carried the name of honey and the thing itself across the pillars of Hercules. It has much honey and no aloes, unless one uses that inappropriate word because of the empty spiked leaves of the *Phytonomorum*. There are Livonica and Lithuanica from whence one can have the most abundant honey. If, according to the witness of Cordus, there is very little moisture in those regions, where can you get honey except from plants? Behold the honey-producing stems: behold the honey of the earth and the honey within flowers and plants.

What is the fame of nectar and of ambrosia? How much do you praise them again and again? The odors of the latter and the tastes of the former, especially, have been pictured by poets in celestial feasts, and no other foods or potions have been allowed a place in sacred feastings because those things, which can satisfy all appetites of banqueters and satisfy them in every way, are most excellently and exquisitely complete within themselves. What is honey itself, unless it is both odor and taste, the one breathing forth and spreading out from flowers; the other from the dew of the sky. What other pleasing thing will you ever find that excels honey in odor or in taste? or what that is more wholly sweet, which seems to have been sent from the sky and to be wholly celestial. Honey is pleasing as food and drink, as you, Ausonian have sung. It is sacred, according to Lucan, and a bit nevertheless, only gift, according to Virgil. Jupiter himself rains it down on you, Galen. Finally this nectar is indeed the nectar, for you, of Virgil and Martial. Who can refuse in any way that ambrosial juice of Orpheus, that is to say, ambrosia (now the latter word is an ambrosia itself)? Will anyone not say with Ambrose that this is sacred? By this nectar and ambrosia you can satisfy both thirst and hunger. According to Pythagoras, [you can almost live] by them alone. You may forego any impure and bloody food, mixtures of many broths, and impure combinations of food without taking any other organic food, without any injury to health; or, according to the authority of Democritus, [you can live] by the odor alone, as if by [breathing] the agreeable exhalations of the sweetest flowers and thus nourishing and recreating [the body], it would be possible to restrain one who is aging and about to depart from the living.

Who would not praise and love you exceedingly, Pythagorean Melissa, you who have turned mortal men from the eating of meat and from bloody, fleshy food by [bringing] the celestial food. You brought the food by which those long-lived fathers remained so long in health and life and which active old men, guided by the reason of philosophy, used, the drink by which Democritus, Antiochus the Physician, and Romulus Pollio overcame the aging effects of their years. Why do you praise wine sweetened with honey? Why pass over in silence anything as sweet as honey? Should we not mention those long-lived Cyrnic honey-eaters, or the gods, blessed, beautiful, and long-lived even to a thousand years, and also those Orphics of Macrobius who

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THE BEEHIVE
OF THE NATURAL THEATRE
OF PRINCE FEDERICO CESI LINCEI

PRINCE OF SAN ANGELÍ AND SAN POLI. I. MARCH[ESE] OF M[ONTI]CELLI. II. A ROMAN NOBLE DESCENDANT OF G.[IACOMO] C.FESL]

WHO IS DEDICATED

TO THE

UNIVERSAL HONEY-MAKING FAMILY DERIVED FROM ITS FIRST GENERATION,

Distributed in its special and differences in the visible natural world.

The father, the king, the supreme lord is outstanding because of his beauty, his form, and because of a shining diadem that is marked on his head. According to Columella, he does not have a sting, (a fact) to which nearly all recent writers (perchance from the Diogenian teachings) seem to subscribe. However, Aristotle says that the more influential and certainly the more able bees do not make use of (the sting), and Ambrose agrees with him. Nevertheless, there are those who, together with Aelian and Pliny, doubt whether these bees lack a sting. Truly this elegant prince is absolute over all others even from his birth. He is obvious at once because of his wings and his remarkable limbs and his full stature and his size. Certainly no one could easily consider him from whom all bees with stings are brought forth to be devoid of a sting. Other kings likewise have their origin from him because the material for the generation of bees is strewn by him. Cardan thinks that it is nothing other than honey from which bees spring forth entirely. Scaliger denies this, but he seems to indicate that the bee nevertheless adds honey-sweet liquid and, moreover, the heat elegantly appropriate to the construction [of the young]. But nevertheless, according to the equally legitimate testimony of Pliny and Aristotle, the bee is made from the honey of flowers, chiefly Cerintha, Olea, and Arundinis. *Bees are fed by honey, a fact about which [Pliny and Aristotle] are in agreement. There are the two honeysweet origins; bees bring back the honey-like connection with shrewd foreknowledge, with desire and with form. At this time, however, the honey is a liquor of tranquil nature; it is the material, selected and plucked from the viscera of flowers, their own special biding place for honey, for fermenting a certain virtue which must quicken. But it seems also that we should undertake to examine more closely the value of the work; and we must stop here for a time while we are most desirous of turning the attention of honey-lovers from the picture of the exterior to that of the interior.*

The material, swollen with juice, is not nicely arranged. It is at first in a disarranged and rather simple form. The heterogeneous mixture has particles hidden in small, crude lumps. Since it is suffused by moisture, at first it contains heats which by evaporation pulse and quicken in the center from the internally stifled heat. Many things have certainly been written about the bubbling, mingling mass, the various solutions and applications. Now the one and now the other of the forms caused by the heat are united for the completion of the organs. These quick movements are spread out in their beginnings. They stir around a great deal, and they dissociate by mutual internal struggligns into parts which either become closed in or disappear. The particles, disturbed and moving vigorously, little by little undergo that joining which holds and restrains them in appropriate boundaries within and without. [The body of the bee] is carefully made solid, and while [the grubs] hang from the supports of nearby walls, the passages for flowing and the passages for breathing are made, and when all things have been distributed according to what is right, their parts are constructed. At last, by a calm collecting and at a convenient site [the parts] gather together in one body. This disposition leaves empty spaces in [the body] for the flowing [of liquids] and veins in the furies, bringing together some things for the purpose of flowing, while some other things have been compressed, joining those things which are thinner and those things which are thicker. It divides the drier, more solid things which contain from the softer contents, and quietly and with soothing obligations it tempers the motions, the freedom from restraint which should neither be able to nor ought to break forth or waste away. In this way, on the one hand the exhalation of the vital heat in the fever of work is checked, and on the other hand a release is provided and that pleasing heat, as if formed into rays, can settle in a moderate middle path between frenzy and laziness. They call it celestial heat, they call it heat from the stars mystically corresponding to the element of the stars, according to this same principle of the souls (that is to say, of the more tenuous and constantly excited and extended parts always connected with the vital principle by interior pulsations) can be exercised by the instruments of the mass itself, namely the muscles and the various limbs and all the organs logically and compliantly arranged, variously excited by leveling, by withdrawal, by impulse, by pressure, and by posture. Certainly the mutual coordination and harmony of the whole, of the parts, and of all the forms, which rest in an orderly fashion from large to small and from distant to closely connected, maintain the completed work, and it forms the nature of the animal, in which that double nature of moving and movement, of freeing and being free, might appear as a result of a maker with such a nature. Only with great difficulty can you represent in words that single work which is of a multiple nature. This fruitfulness is certainly more wont to be the industry of that great Mother, who owns unworthy of the name by [her] life every one of the bees. These bees come from the hive. It should not seem marvelous if by a single one of their works many living creatures can be produced, the parents of whom are preserved by their powers. However it is much more agreeable to reason to mention this, that so long as the parents remain near (for shared) and about to be gathered) so long will the powers of the causes be joined in one thing. Now the material, which they call the generating material of bees, is present, having been plucked from honey-bearing flowers, and in that material a bee-like structure ought to emerge from a not accidental collection of the parts; but having been collected it is so similar to the [bees] own forms which follow [from it] that the particles ought to be much closer to and go into bees in a few steps if they are gathered and compressed for away. The milky color [of the material] indicates that it is sperm-like and foamy and that, condensed within its bounds, it is appropriate for the formation of organs but not as the first food, such as we would consider mother's milk, eggs, many seeds, and oily, watery, and salty mixtures. It is the result of fermenting, of wetter honey [which you will see] if you observe the movement and bubblings of honey, especially that which is mixed with water. Indeed there is nothing more wet (than honey) in this material, without any other material, since the honey [bees] can be produced quite easily by nature (a helpful analogy is an egg). But the king, the father himself, presides over what he gathers. By his work the material is made smooth, is placed in order, is pressed together, and the material matures and flows. Indeed we see that the material, once it has been separated and has set apart from its surrounding heat, but from the seminal spirits injected by [the king]. It is very greatly agitated and stirred up by these spirits, and in intermingling with such spirits it is more readily excited and springs forth with its original vigor just as it would from a father. When it has been seized by the fervor which pursues and urges it gradually through the last stages of the work, the material, fitting and resonant, gives off all of the limbs. These generative materials must be completely distilled. They are thought by a number of scientists to be nothing more than a substance similar to condensed spirits. Although they have added the fleshy body (better for the first food) the generative materials overflow with spirits. In any case it is allowed that the force and energy of the generative material are in the spirit. Without a doubt we have the purest material, the primordial spirit (as I call it) from the father, which flows into the material, immediately produces order and form and more similar parts to that the life of the bee, having been implanted most promptly and most strongly, remains, sent forth equally by the disposition of the place, capable above all of being molded, and far more efficient than the architecture of Scaliger. And it is admirable too how natural philosophers, building and furnishing homes for themselves, unite with these little spirits a certain contingent that is plastic. You might ask whether this is the productive of fifteen that you must admire more than the father who knows no easier sports, no excitement of lustful madness, no impurities or sweries.

*What entirely opposite things he seizes upon. He knows the substances, but the author does not produce, and he accomplishes unknown work and offspring, but (the Father) gives work befitting a free man to free men, with zeal. Should you perhaps throw out the fuller materials which are rather heavy? These should not be sought by the body of the bee because [bees] do not have a crau for taking in food which they cannot use. [Such food] should not flow through the limbs nor should it leave any mark on the forms [of the bees] which are outstanding now since they have been well formed. Nevertheless, [bees] are engendered from the outside, and disposed similarly to the father, are outstanding. The very delicate little body should not be polluted by eating strange food if foods on which the body depends exist close by. The spirits alone, which are imposed on the generative constitution of this material, are sufficient. They are sent forth entirely from the body of the Father. They are well distinguished, and they take on many forms of spirits which are sent forth by animals. Consider also the nutritive spirits which are sent forth by plants. The spirits establish that posture both inside and out. From the joining [of spirit and form] the Apivus results in all its forms. You should not doubt those distinctions of form, although it is allowed that you cannot see them. The particles in their various positions convey the maternal characteristics, though they escape our eyes. Thus, you can discern things by tastes and odors, by the various strikings of particles. Some of the spirits are nutritive, others are sensitive, and others are rational. Consider them by the sight of them. You can perceive even the smallest invisible bodies effused by Moschus throughout an entire bedchamber. I say that you can perceive the Muscaceus parts. If you consider odor as the talent of dogs, that is to say the most skillful canine nostrils, you should learn about what they perceive, the diverse exhalations from the body of a single animal, the traces clinging momentarily in the air, and the exhalations could certainly not be perceived distinctly if we could not attract the attention of the senses unless the particles on the outside retain the maternal form. The material of bees, although it cannot be seen, is well impressed on the breath and breathing of the whole body, but it is subsequently more distinctly in the spirit. The spirit assimilates nothing whatsoever to itself unless it is of an appropriate weight to it except what the outer pores [of the body] assimilate. It has progressed, like a bud maturing in nature, from a little worm at the beginning which turns into an egg, where it is gathered up into a round ball, as if in an egg. At its completion it encloses a resting nymph which gathers strength from its chief components. When at last arms and legs have grown and the head has been erected forth, it is torn away from the mother, meanwhile, to aid her maternal duties. And the little mothers are steadfastly present, fostering the kingly fetuses of the resting bees until they are finally brought to completion. You should consider these little mothers as being of a lower rank along with the other bands of workers. First the Great Mother Nature operates on these little birds. Then the father produces, advances and Confirms the work. At last there are the little nurses. Thus the marvel in the spirit is that nature seems to act together with it as nurse and to operate more and to bring forth [offspring] just as [the parents do]. You have certain parts of your substance from the foul-named poision, and you have parts from material similar to it and marked by it. Through the harmony [of bee and nature] there are, on the one hand, forms and on the other their connection, heat now producing the first and then the succeeding forms, both the working and the resting. The spirits are always busy. In the substance of the body, the material itself is formed, and in the motion of the spirit which is at hand, and the great parent, happening onto an assembly of adoantageous things, brings forth bees. There is a truly unique force of nature and of the father which brings new kings to completion in a remarkably short time. Indeed, [bees] are engendered, a multitude of thickened spirits, so that [the new kings] can reach perfection most rapidly and so that they do not have to linger as unformed little worms or as a sleeping nymph or such a small thing, but they grow most rapidly in size of body and of nature as though made from the choice flowers of all those available, as Pliny says. In this certain way are kings generated according to the leonine principle. In this way, then, nothing whatsoever is lacking in the faithful, or less than worthy, or unfitting for the work of God in them. Accordingly, they are worthy works of God in them. Accordingly, they are worthy works of God in them. Accordingly, they are worthy of God in them. Accordingly, they are worthy of God in them. Accordingly, they are worthy