The Blazing World

MARGARET CAVENDISH

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The 1668 text

Rendered into modern English with AI (Claude) and edited



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The Blazing World · Margaret Cavendish

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Original text: *The Description of a New World, Called The Blazing-World* (London: A. Maxwell, 1668), the separate edition, from the EEBO-TCP transcription (github.com/textcreationpartnership/A53044) (CC0; text public domain); eight blotted letters and words are supplied from the first edition (1666, EEBO-TCP A53049 (github.com/textcreationpartnership/A53049)), whose only transcribed copy lacks leaves of the Second Part. The long s is printed as s and a few keying errors are corrected. With the Duke of Newcastle's commendatory poem. Modern version: rewritten from Cavendish's English with AI (Claude), then edited for accuracy and consistency. Not reviewed by a human specialist. Free to reuse under CC BY-SA 4.0. The small numbers set in the text are part and paragraph (Ded. = the address to the ladies, Epil. = the epilogue).

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INTRODUCTION

Margaret Cavendish, Duchess of Newcastle (1623–1673), was the most prolific woman writer of her century: poems, plays, letters, orations and six books of natural philosophy, all published under her own name. In 1666 she printed *Observations upon Experimental Philosophy*, a critique of the new microscope science of Robert Hooke and the Royal Society, and joined to it, "as Two several Worlds, at their Two Poles," a work of fancy: *The Description of a New World, Called The Blazing World*. Two years later she issued it on its own, with a new address to "all noble and worthy ladies."

A young lady carried off by a merchant is swept through the North Pole into another world, lit by blazing stars, whose emperor marries her and gives her absolute power. As Empress she founds scientific societies of bear-men (experimental philosophers), bird-men (astronomers), worm-men, fly-men and ape-men, questions them, and dissolves them when their quarrels threaten the peace. Wanting to write a Kabbalah, she summons as her scribe the soul of the Duchess of Newcastle herself; the two souls become "Platonick friends," visit each other's worlds, and each learns to make worlds of her own in her mind. In the Second Part the Empress returns to save her native country with an invincible fleet of submarines and fire-stones.

Part romance, part philosophy, part fantasy—as Cavendish says—it is often called one of the first works of science fiction. The right-hand column is Cavendish in modern English; the left is the 1668 text.

The First Part

A young lady carried off to the North Pole crosses into the Blazing World, becomes its Empress, founds societies of animal-men to explain nature, and takes the soul of the Duchess of Newcastle as her scribe.

TO THE DUCHESS OF NEWCASTLE, ON HER NEW BLAZING-WORLD

The Duke of Newcastle's poem praises his wife for making a world out of nothing but wit.

Poem

Our elder world, with all its skill and arts,
Could only divide the world into three parts.
Columbus, then famed for navigation,
Found a new world—America it's named.
Now this new world was found; it was not made,
Only discovered, lying in time's shade.[1]

Then what are you, who had no chaos found
To make a world from, nor the least such ground?
But your creating fancy thought it fit
To make your world of nothing but pure wit.
Your Blazing World mounts higher, beyond the stars,
And lights up all with a celestial fire.
William Newcastle.[2]

1 The "three parts" of the old world were Europe, Asia, and Africa.
2 William Cavendish, Duke of Newcastle (1593–1676), Margaret Cavendish's husband.

TO ALL NOBLE AND WORTHY LADIES

Cavendish offers her fancy to the ladies and resolves, since she cannot conquer a world, to make one.

Ded.1 This present *Description of a New World* was made as an appendix to my *Observations upon Experimental Philosophy*. Since the two have some sympathy and coherence with each other, they were joined together as two separate worlds at their two poles. But because most ladies take no delight in philosophical arguments, I separated some parts from the *Observations* I mentioned and had them go out by themselves, so that I might express my respects by presenting to the ladies such fancies as my contemplations afforded.[3] The first part is romancical; the second, philosophical; and the third is merely fancy, or (as I may call it) fantastical. And if, noble ladies, you should happen to take pleasure in reading these fancies, I shall count myself a happy creatoress. If not, I must be content to live a melancholy life in my own world. I cannot call it a poor world, if poverty is only the lack of gold and jewels. For there is more gold in it than all the chemists ever made, or (as I truly believe) will ever be able to make.[4] As for the rocks of diamonds, I wish with all my soul that they might be shared among my noble female friends, and on that condition I would willingly give up my share. Of the gold, I would want only as much as might suffice to repair my noble lord and husband's losses. For I am not covetous, but I am as ambitious as any of my sex ever was, is, or can be;[5] which is the reason that, though I cannot be Henry the Fifth or Charles the Second, I will try to be Margaret the First. And though I have neither the power, the time, nor the occasion to be a great conqueror like Alexander or Caesar, yet rather than not be mistress of a world, since Fortune and the Fates would give me none, I

3 The *Observations* and *The Blazing World* were first printed together in 1666. In 1668 they were reissued, and *The Blazing World* also appeared on its own.

4 "Chemists" here means alchemists, who sought to make gold.

5 Newcastle lost most of his fortune supporting the royalist cause in the English Civil War.

have made one of my own. And so, believing, or at least hoping, that no creature can or will envy me for this world of mine, I remain, noble ladies, your humble servant, M. Newcastle.

THE DESCRIPTION OF A NEW WORLD, CALLED THE BLAZING-WORLD

A merchant kidnaps a young lady, and a storm drives his boat through the North Pole into another world.

1.1 A merchant traveling in a foreign country fell extremely in love with a young lady. But he was a stranger in that nation, and beneath her in both birth and wealth, so he could have little hope of obtaining his desire. Nevertheless his love grew more and more violent, until he disregarded every difficulty, and at last he resolved to steal her away. He had all the better opportunity to do this because her father's house was not far from the sea. She often used to gather shells on the shore, accompanied by no more than two or three of her servants, and this encouraged him all the more to carry out his design. So one time he came to the place where she used to go, with a small light vessel not unlike a packet boat. It was manned with a few seamen and well stocked with food, for fear of accidents that might perhaps delay their journey. There he carried her off by force. But just when he imagined himself the happiest man in the world, he proved to be the most unfortunate. For Heaven, frowning at his theft, raised such a storm that they did not know what to do or where to steer their course;[6] so that the vessel, both by its own lightness and by the violent motion of the wind, was carried as swiftly as an arrow from a bow toward the North Pole. In a short time it reached the Icy Sea, where the wind drove it among huge pieces of ice. But it was small and light, and through the assistance and favor of the gods toward this virtuous lady, it turned and wound through those perilous places as if it had been guided by some experienced pilot and skillful mariner. But alas! The few men who were in it did not know where they were

6 A packet boat was a small, fast vessel that carried mail and passengers.

going, nor what was to be done in so strange an adventure, and they were not provisioned for so cold a voyage. So they were all frozen to death. Only the young lady remained alive, by the light of her beauty, the heat of her youth, and the protection of the gods. Nor was it any wonder that the men froze to death. For they were driven not only to the very end or point of the pole of that world, but even to another pole of another world, which joined close to it; so that the cold, having double strength where those two poles met, was unbearable. At last the boat, still moving on, was forced into another world. For it is impossible to go around this world's globe from pole to pole, as we do from east to west. The poles of the other world join the poles of this one, and so they do not allow any further passage around the world that way; but if anyone arrives at either of these poles, he is forced either to turn back or to enter another world. You might have doubts about this. You might think that, if it were so, those who live at the poles would either see two suns at once, or else would never lack the sun's light for six months together, as is commonly believed. But you must know that each of these worlds has its own sun to light it, and each sun moves in its own particular circle; and this motion is so precise and exact that neither can hinder or obstruct the other, for they do not go beyond their tropics. And even if they should meet, we in this world cannot perceive them very well, because of the brightness of our sun. Being nearer to us, our sun blocks the splendor of the sun of the other world, which is too far off to be discerned by our optic perception unless we use very good telescopes. With these, skillful astronomers have often observed two or three suns at once.[7]

1.2 But to return to the wandering boat and the distressed Lady. Seeing all the men dead, she found little comfort in life. All that while the extreme cold had preserved their bodies from putrefaction and stench, but now they began to thaw and rot. She did not have strength enough to throw them overboard, so

7 She is probably thinking of parhelia ("mock suns" or sun dogs), which were often reported in the period.

she was forced to move out of her small cabin onto the deck to avoid that nauseating smell. She found the boat floating between two plains of ice, like a stream running between two shores, and at last she caught sight of land, though it was all covered with snow. From it there came, walking on the ice, strange creatures shaped like bears, except that they walked upright like men. Coming near the boat, these creatures caught hold of it with their paws, which served them instead of hands. Two or three of them went in first, and when they came out, the rest went in one after another. At last, having viewed and examined everything in the boat, they spoke to each other in a language the Lady did not understand. Then they carried her out of the boat and sank it, together with the dead men.

AMONG THE ANIMAL-MEN

Bear-men, fox-men, bird-men, Satyrs and green men carry the Lady from island to island toward the Emperor.

1.3 Finding herself now in so strange a place, among such wondrous kinds of creatures, the Lady was struck with extreme fear. She could think of nothing but that at any moment her life would be sacrificed to their cruelty. But however terrible those bear-like creatures appeared to her eyes, they were so far from treating her with any cruelty that, on the contrary, they showed her all the civility and kindness imaginable; for since she could not walk on the ice because of its slipperiness, they took her up in their rough arms and carried her into their city, where instead of houses they had caves underground. As soon as they entered the city, males and females, young and old, flocked together to see this Lady, holding up their paws in wonder; at last they brought her into a certain large and spacious cave, which they intended for her reception. There they left her in the care of the females, who entertained her with all kindness and respect and gave her such food as they used to eat. But they saw that her constitution agreed neither with the temperature of that climate nor with their diet. So they resolved to carry her to

another island with a warmer climate; in this island there were men like foxes, only they walked in an upright shape. They received their neighbors the bear-men with great civility and courtesy, and they greatly admired this beautiful Lady. After talking together for some while, they finally agreed to make her a present to the Emperor of their world. To this end, after she had stayed a short time in that place, they brought her across that island to a large river whose stream ran smooth and clear like crystal. On it there were numerous boats, much like our fox traps; she was carried in one of these, with some of the bear- and fox-men attending her. As soon as they had crossed the river, they came into an island where there were men who had heads, beaks, and feathers like wild geese, only they walked in an upright shape, like the bear-men and fox-men. They carried their rumps between their legs. Their wings were the same length as their bodies, and their tails were of moderate size, trailing after them like a lady's gown; the bear- and fox-men declared their intention and design to their neighbors, the geese- or bird-men. Then some of these joined the rest and escorted the Lady through that island, until they came to another great, wide river. There many boats had been made ready, much like birds' nests, only bigger; having crossed that river, they arrived in another island, which had a pleasant and mild climate and was full of woods. Its inhabitants were Satyrs, who received the bear-, fox-, and bird-men with all respect and civility. After some conferences (for they all understood each other's language), some of the chief Satyrs joined them and accompanied the Lady out of that island to another river, on which there were many handsome and convenient barges; having crossed that river, they entered a large and spacious kingdom whose men were of a grass-green complexion. These men entertained them very kindly and provided every convenience for their further voyage. Until now they had only crossed rivers, but now they could no longer avoid the open sea. So they made their ships and rigging ready to sail over to the island where the Emperor of the Blazing World (for so it was called) kept his res-

idence. They were very good navigators. They had no knowledge of the lodestone, or the needle, or pendulum clocks. But they had subtle observations and great practice, which served them just as well. They could tell not only the depth of the sea in every place, but also where there were sandbanks, rocks, and other obstructions to be avoided by skillful and experienced seamen.[8] Besides, they were excellent augurs, and they counted this skill more necessary and beneficial than the use of compasses, charts, clocks, and the like. But above all, they had an extraordinary art, well worth the notice of experimental philosophers. This was a certain engine which would draw in a great quantity of air and shoot out wind with great force. In a calm they placed this engine behind their ships, and in a storm in front. For it served against the raging waves like cannons against an enemy army or a besieged town; it would batter and beat the waves to pieces, even if they were as high as steeples. As soon as a breach was made, they forced their passage through, in spite of even the most furious wind. They used two of these engines on every ship, one in front to beat off the waves and another behind to drive the ship on. So the artificial wind got the better of the natural, for it had a greater advantage over the waves than the natural wind had over the ships. The natural wind was above the surface of the water, so it could not enter or press into the ships without a straight downward motion. The artificial wind, with a sideways motion, pierced into the very bowels of the waves. It should also be observed that in a great storm they would join their ships in battle array. When they feared that wind and waves would be too strong for them if they kept their ships apart, they joined as many together as the extent and convenience of the places in the liquid element would allow. For their ships were so ingeniously designed that they could fasten them together as close as a honeycomb, without wasting any space. Once they were united in this way, no wind or waves could separate them. The Emperor's ships

8 Pendulum clocks were new, introduced by Christiaan Huygens in 1656–57 and tried at sea as a way of finding longitude.

were all of gold, but those of the merchants and skippers were of leather. The golden ships were not much heavier than our wooden ones, because they were neatly made and did not need such thickness. Nor were they burdened with pitch, tar, pumps, guns, and the like, which make our wooden ships very heavy; for though they were not all of one piece, they were so well soldered that there was no fear of leaks, chinks, or cracks. As for guns, there was no use for them, because they had no enemies but the winds. But the leather ships were not quite so safe, though they were much lighter; besides, they had to be pitched to keep out the water.

1.4 Having prepared and ordered their navy in this way, they went on in spite of calm or storm. At first the Lady imagined herself in a very sad condition, and her mind was much tormented with doubts and fears, since she did not know whether this strange adventure would lead to her safety or her destruction. Yet she was also of a generous spirit and ready wit. She considered what dangers she had already passed, and she found those sorts of men to be civil and diligent attendants, so she took courage and set about learning their language. Once she had learned it well enough to grasp their meaning, partly through some words and signs, she was so far from being afraid of them that she thought herself not only safe but very happy in their company. From this we may see that novelty unsettles the mind, but acquaintance settles it in peace and tranquility.

PARADISE AND THE NEW EMPRESS

The Lady reaches the golden city of Paradise; the Emperor marries her and gives her absolute power.

At last, having passed by several rich islands and kingdoms, they headed toward Paradise, which was the seat of the Emperor, and when they came in sight of it they rejoiced greatly. At first the Lady could see nothing but high rocks, which seemed to touch the skies. Although they did not appear to be of equal height, they seemed to be all one piece, without any divisions.

But at last, drawing nearer, she noticed a cleft, which was part of those rocks. Out of it she spied a great number of boats coming forth, which from far off looked like a company of ants marching one after another. The boats looked like the cells or partitions of a honeycomb, and when joined together they stood just as close. The men were of various complexions, but none like any in our world. When the boats and the ships met, they greeted and spoke to each other very courteously, for there was only one language in all that world. Nor was there more than one emperor, to whom they all submitted with the greatest duty and obedience. This made them live in continual peace and happiness, unacquainted with foreign wars or homegrown insurrections. The Lady, having now arrived at this place, was carried out of her ship into one of those boats and conveyed through that same passage (for there was no other) into the part of the world where the Emperor resided. That part was very pleasant and of a mild climate. Within itself it was divided by a great number of vast, wide rivers, all ebbing and flowing, into several islands at unequal distances from one another, which in most places were as pleasant, healthful, rich, and fruitful as nature could make them; and, as I mentioned before, it was secure from all foreign invasion, because there was only one way in. That way was like a labyrinth, so winding and turning among the rocks that no vessels could pass but small boats carrying no more than three passengers at a time. On each side, all along this narrow and winding river, there were several cities, some of marble, some of alabaster, some of agate, some of amber, some of coral, and some of other precious materials not known in our world. After the Lady had passed all of these, she came to the imperial city, named Paradise, which looked like a number of islands, for rivers ran between every street. These, together with the bridges, of which there were a great number, were all paved. The city itself was built of gold, and their architecture was noble, stately, and magnificent. It was not like our modern building but like that of the Romans' time. For our modern buildings are like the houses children make out of cards, one

story on top of another, fitter for birds than for men; but theirs were larger and broader than they were high. The highest of them did not exceed two stories, besides the rooms underground, such as cellars and other service rooms. The Emperor's palace stood on a moderate rise above the imperial city. At the top of this rise was a broad arch, supported by many pillars, which ran all the way around the palace and measured four of our English miles around. Within the arch stood the Emperor's guard, which was made up of several sorts of men. Every half mile there was a gate to enter by, and every gate was of a different design. The first gate, which gave passage from the imperial city into the palace, had a cloister on either side. The outer part of each cloister stood on arches held up by pillars, while the inner part was closed. Once one had entered through the gate, the palace itself appeared, in its middle, like the aisle of a church, a mile and a half long and half a mile wide. Its roof was arched throughout and rested on pillars placed so artfully that a stranger would lose himself in it without a guide. At the far sides, that is, between the outer and inner parts of the cloister, were lodgings for attendants. In the middle of the palace were the Emperor's own rooms, whose windows were placed at the top of each one, because of the heat of the sun. The Emperor's state apartment was no more enclosed than the rest, and there was an imperial throne in every apartment. The various adornments of these thrones could not be seen until one entered, because the pillars stood so exactly opposite one another that all the adornments could not be seen at once. The first part of the palace was all of gold, like the imperial city. When it came to the Emperor's apartment, it was so rich with diamonds, pearls, rubies, and similar precious stones that it is beyond my skill to list them all. Among the rest, the imperial room of state appeared the most magnificent. It was paved with green diamonds (for in that world there are diamonds of all colors), so artfully that it seemed to be all one piece. The pillars were set with diamonds so closely, and in such a way, that they looked most glorious. Between every pillar was a bow or arch of a cer-

tain kind of diamond, the like of which our world does not provide. These diamonds were set in several rows in each of the arches, so that they looked just like so many rainbows of different colors. The roof of the arches was of blue diamonds, and in the middle of it was a carbuncle, which represented the sun. The rising and setting sun, on the east and west sides of the room, were made of rubies. From this room there was a passage into the Emperor's bedchamber. Its walls were of jet and its floor of black marble. The ceiling was of mother-of-pearl, where the moon and blazing stars were represented in white diamonds, and his bed was made of diamonds and carbuncles.[9]

1.5 No sooner was the Lady brought before the Emperor than he took her to be some goddess and offered to worship her. She refused, telling him (for by that time she had learned their language pretty well) that although she came from another world, she was only a mortal. At this the Emperor, rejoicing, made her his wife and gave her absolute power to rule and govern all that world as she pleased. But her subjects could hardly be persuaded to believe she was mortal, and they offered her all the veneration and worship due to a deity.

1.6 Her attire after she was made Empress was as follows. On her head she wore a cap of pearl, with a half-moon of diamonds just in front of it. Over the top of her crown spread a broad carbuncle cut in the shape of the sun. Her coat was of pearl mixed with blue diamonds and fringed with red ones, and her buskins and sandals were of green diamonds. In her left hand she held a shield, to signify the defense of her dominions. This shield was made of the kind of diamond that has several different colors, and, being cut and shaped in the form of an arch, it looked like a rainbow. In her right hand she carried a spear made of a white diamond, cut like the tail of a blazing star, which signified that she was ready to attack any who proved to be her enemies.

1.7 No one was allowed to use or wear gold except those of the imperial race, who were the only nobles of the state. Nor did anyone dare wear jewels except the Emperor, the Empress, and

9 A carbuncle is a red gem, then believed to shine by its own light.

their eldest son. This was so even though they had an infinite quantity of both gold and precious stones in that world. For they had wider stretches of gold than our Arabian sands, their precious stones were whole rocks, and their diamonds were of various colors. They used no coin, but all their trade was by exchange of various goods.

1.8 Their priests and governors were princes of the imperial blood, made eunuchs for that purpose. As for the ordinary sort of people in the part of the world where the Emperor resided, they were of various complexions. They were not white, black, tawny, olive, or ash-colored, but some appeared azure, some deep purple, some grass-green, some scarlet, some orange, and so on. Perhaps these colors and complexions were produced by the bare reflection of light, without the help of small particles. Or they came with the help of well-arranged and ordered atoms, or by a continual agitation of little globules, or by some pressing and reacting motion. Which of these it was, I am not able to determine.[10] The rest of the inhabitants of that world were men of many different sorts, shapes, figures, dispositions, and humors, as I have already mentioned. Some were bear-men, some worm-men, some fish- or mermen, otherwise called sirens. There were also bird-men, fly-men, ant-men, geese-men, spider-men, lice-men, fox-men, ape-men, jackdaw-men, magpie-men, parrot-men, Satyrs, Giants, and many more that I cannot all remember.

THE EMPRESS FOUNDS HER SOCIETIES

She gives each sort of animal-men a science and questions the statesmen and priests about government and religion.

Each of these sorts of men followed whatever profession was most suited to the nature of their species, and the Empress encouraged them in it. She especially encouraged those who had applied themselves to the study of the various arts and sci-

10 She runs through rival theories of color current in her day, including atomist accounts and Descartes's spinning "globules" of light.

ences, for they were as ingenious and clever in inventing profitable and useful arts as we are in our world—indeed, more so. To that end she set up schools and founded several societies. The bear-men were to be her experimental philosophers, the bird-men her astronomers, the fly-, worm-, and fish-men her natural philosophers, the ape-men her chemists, the Satyrs her Galenic physicians, the fox-men her politicians, the spider- and lice-men her mathematicians, the jackdaw-, magpie-, and parrot-men her orators and logicians, the Giants her architects, and so on. But before anything else, having received sovereign power over the whole world from the Emperor, she wanted to be informed about both their religion and their government. For that purpose she called the priests and statesmen to give her an account of each. Of the statesmen she asked, first, why they had so few laws.[11] They answered that many laws made many divisions, which most often bred factions and in the end broke out into open war. Next she asked why they preferred the monarchical form of government to any other. They answered that just as it was natural for one body to have only one head, so it was also natural for a body politic to have only one governor. A commonwealth with many governors, they said, was like a monster with many heads. "Besides," they said, "monarchy is a divine form of government and agrees best with our religion. For as there is only one God, whom we all unanimously worship and adore with one faith, so we are resolved to have only one emperor, to whom we all submit with one obedience."

1.9 Then the Empress saw that the various sorts of her subjects each had their own separate churches, and she asked the priests whether they were of several religions. They answered Her Majesty that there was only one religion in all that world, and no diversity of opinion within that religion; for though there were several sorts of men, they all held only one opinion concerning the worship and adoration of God. The Empress asked them whether they were Jews, Muslims, or Christians. "We do not

11 Galenic physicians followed the ancient Greek physician Galen, treating illness by restoring the balance of the bodily humors.

know," they said, "what religions those are; but we all unanimously acknowledge, worship, and adore the only, omnipotent, and eternal God, with all reverence, submission, and duty." Next the Empress asked whether they had several forms of worship.[12] They answered, "No. Our devotion and worship consist only in prayers, which we frame according to our various needs, in petitions, humiliations, thanksgivings, and so on." "Truly," replied the Empress, "I thought you were either Jews or Muslims, because I never saw any women in your congregations. But what is the reason you bar them from your religious assemblies?" "It is not fitting," they said, "for men and women to be mixed together during religious worship. Their company hinders devotion and makes many direct their devotion to their mistresses instead of praying to God." "But," asked the Empress, "have they no congregation of their own, to perform the duties of divine worship as men do?" "No," they answered, "but they stay at home and say their prayers by themselves in their private chambers." Then the Empress wanted to know why the priests and governors of their world were made eunuchs. They answered, "To keep them from marriage; for women and children most often cause disturbance in both church and state." "But," she said, "women and children have no employment in church or state." "That is true," they answered. "But although they are not admitted to public office, they have such influence over their husbands and parents that their persistent persuasions often cause as much mischief in secret as if they had the management of public affairs—indeed, more."

1.10 Having been informed about everything concerning both church and state, the Empress spent some time viewing the imperial palace, where she greatly admired the skill and ingenuity of the architects. She asked them, first, why they built their houses no higher than two stories from the ground. They answered Her Majesty that the lower their buildings were, the less they were exposed to the heat of the sun, or to wind, storms, decay, and so on. Then she wanted to know why they made

12 The 1668 text says "Turks," the usual English word of the time for Muslims.

them so thick. They answered that the thicker the walls were, the warmer the houses were in winter and the cooler in summer, for their thickness kept out both cold and heat. Lastly, she asked why they arched their roofs and made so many pillars. They replied that arches and pillars not only graced a building greatly and made it look magnificent, but also made it firm and lasting.

THE BIRD-MEN ON THE HEAVENS

The bird-men, her astronomers, report on the sun, moon, stars, air, wind, snow and thunder.

1.11 The Empress was very well satisfied with their answers. After some time, when she thought that her newly founded societies of virtuosos had made good progress in the various employments she had set them to, she called a convocation, first of the bird-men, and commanded them to give her a true account of the two celestial bodies, namely the sun and moon. This they did with all the obedience and faithfulness befitting their duty.[13]

1.12 As far as they could observe, they reported that the sun was a firm or solid stone of vast size, yellowish in color and of extraordinary splendor. But the moon, they said, was whitish in color. Although she looked dim in the presence of the sun, she had her own light and was a shining body in herself, as could be seen from her vigorous appearance on moonlit nights. The only difference between her own light and the sun's was that the sun struck his beams in a direct line, whereas the moon never faced the center of their world in a straight line, but her center was always eccentric. The spots in both the sun and the moon, as far as they were able to perceive, they declared to be nothing but flaws and stains in their stony bodies. Concerning the heat of the sun, they were not of one opinion. Some held that the sun was hot in itself. They cited an old tradition that at some time it would break apart, burn the heavens, and consume this world

13 "Virtuosos" was the period's word for gentleman-scientists and collectors, especially the members of the Royal Society.

into hot embers. That, they said, could not happen if the sun were not fiery in itself. Others said that this opinion did not agree with reason. Fire destroys all things, so a sun-stone of that kind would burn up all the bodies lying near it. Besides, they said, fire cannot last without fuel, and the sun-stone, having nothing to feed on, would soon consume itself. They therefore thought it more probable that the sun was not actually hot, but hot only by the reflection of its light, so that its heat was an effect of its light, both being immaterial. But this opinion in turn was laughed at and rejected as ridiculous by others, who thought it impossible that one immaterial thing should produce another. They believed that both the light and the heat of the sun came from a swift circular motion of the ethereal globules, which caused light by striking upon the optic nerve, while their motion produced heat. But neither would this opinion hold; for then, said some, it would follow that the sight of animals is the cause of light, and that if there were no eyes there would be no light, which was against all sense and reason.[14] So they argued about the heat and light of the sun. But, remarkably, none of them said that the sun was a globular fluid body with a swift circular motion. All agreed that it was fixed and firm like a center, and therefore they generally called it the sun-stone.

1.13 Then the Empress asked them why the sun and moon often appeared in different postures or shapes: sometimes magnified, sometimes diminished; sometimes raised, at other times lowered; now thrown to the right, and then to the left. Some of the bird-men answered that this came from the various degrees of heat and cold found in the air, which produce differing density and rarity. It also came from the vapors that come in between: those that rise are higher and less dense than the surrounding air, while those that descend are heavier and denser. But others affirmed, with more probability, that it was nothing but the various patterns of the air. Painters do not copy one and the same original exactly alike every time; in the same way, they

14 The "ethereal globules" are Descartes's tiny particles of the second element, whose pressure on the eye he held to be light.

said, different parts of the air make different patterns of the luminous bodies of the sun and moon. These patterns, like so many copies, the sensitive motions figure out in the substance of our eyes.[15]

1.14 The Empress liked this answer much better than the former one. She asked further what they thought of the creatures called motes of the sun. They answered that these were nothing but streams of very small, rare and transparent particles, through which the sun was represented as through a glass: if they were not transparent, they said, they would eclipse the light of the sun; and if they were not rare and of an airy substance, they would prevent flies from flying in the air, or at least slow down their flight. Nevertheless, although they were thinner than the thinnest vapor, they were not as thin as the body of the air, or else animal sight could not perceive them. Then the Empress asked whether they were living creatures. They answered yes, because they increased and decreased, and were nourished by the presence of the sun and starved by its absence.

1.15 When they had finished their discourse on the sun and moon, the Empress wanted to know what other stars there were. But they answered that in that world they could perceive no others except blazing stars, and that from these the world took its name and was called the Blazing World. These blazing stars, they said, were bodies as solid, firm and shining as the sun and moon. They were not globular but of various kinds of figures: some had tails, and some had other kinds of shapes.[16]

1.16 After this the Empress asked them what kind of substance or creature the air was. The bird-men answered that they could have no perception of the air except through their own breathing. For, they said, some bodies are subject only to touch, others only to sight, and others only to smell, but some are subject to none of our exterior senses. Nature is so full of variety that our

15 Cavendish was a materialist: all nature is self-moving matter, made up of rational, sensitive and inanimate parts. Perception happens when the sensitive parts shape themselves into copies, or "patterns," of an object's figure.
16 "Blazing stars" was the common English term for comets.

weak senses cannot perceive all the various sorts of her creatures. No single object is perceptible by all our senses, any more than several objects are perceptible by one sense. "I believe you," replied the Empress. "But if you can give no account of the air," she said, "you will hardly be able to tell me how wind is made, for they say that wind is nothing but the motion of the air." The bird-men answered that they observed wind to be denser than air, and therefore subject to the sense of touch. But what wind properly was, and how it was made, they could not exactly tell. Some said it was caused by clouds falling on one another. Others said it was produced from a hot and dry exhalation, which rose and was driven down again by the coldness of the air in the middle region. Because of its lightness it could not go straight to the bottom, but was carried up and down by the air. Some held wind to be a flowing water of the air; and others, again, a flowing air moved by the blas of the stars.[17]

1.17 But the Empress, seeing that they could not agree about the cause of wind, asked whether they could tell how snow was made. They answered that, according to their observation, snow was made by mixing water with a certain extract of the element of fire that lies beneath the moon. A small portion of this extract, mixed with water and beaten by air or wind, made a white froth called snow. After a while the heat of the same spirit dissolved it, and it turned back into water.[18] This observation greatly amazed the Empress. Until then she had believed that snow was made by cold motions, and not by such an agitation or beating of a fiery extract upon water. Nor could she be persuaded to believe it until the fish- or mermen had delivered their observation on the making of ice. Ice, they said, was not produced by the motion of the air raking the surface of the earth, as some had hitherto supposed, but by some strong saline vapor rising out of the seas, which condensed water into ice;

17 "Blas" was the Flemish chemist Jan Baptista van Helmont's (1580–1644) coined word for a motive power or impulse, as in the stars' influence on the air.
18 In the traditional Aristotelian picture, a sphere of elemental fire lay just below the sphere of the moon.

and the greater the quantity of that vapor, the greater were the mountains or precipices of ice. It did not freeze as much in the torrid zone, or under the ecliptic, as near or under the poles. The reason was that in those hot places the sunbeams drew this vapor up into the middle region of the air, where it was only condensed into water and fell down in showers of rain. Under the poles, by contrast, the heat of the sun was not so strong, so the same vapor had no force or power to rise so high. It therefore caused so much ice, because it rose and acted only upon the surface of the water.

1.18 This account partly confirmed the bird-men's observation about the cause of snow. But they had mentioned that the same extract that made snow when mixed with water came from the element of fire beneath the moon. The Empress therefore asked them what the nature of that elementary fire was. Was it like ordinary fire here on earth, or like the fire within the bowels of the earth, which the famous mountains Vesuvius and Etna burn with, or was it the sort of fire found in flints, etc.? They answered that the elementary fire beneath the sun was not as solid as any of the fires she had mentioned, because it had no solid fuel to feed on. Yet it was much like the flame of ordinary fire, only somewhat thinner and more fluid. For flame, they said, is nothing but the airy part of a body on fire.

1.19 Lastly, the Empress asked the bird-men about the nature of thunder and lightning, and whether it was not caused by masses of ice falling upon one another. They answered that it was not made that way, but by an encounter of cold and heat. An exhalation kindled in the clouds dashed forth lightning, and there were as many rendings of clouds as there were sounds and cracking noises.[19] But others contradicted this opinion. They affirmed that thunder was a sudden and monstrous blas stirred up in the air, which did not always require a cloud. The Empress did not know what they meant by blas (for even they themselves

19 The view the Empress proposes is Descartes's, who explained thunder as frozen upper clouds falling onto lower ones.

could not explain the sense of this word), so she liked the former opinion better;

TELESCOPES AND MICROSCOPES

The bear-men's telescopes breed endless disputes; their microscopes show her a fly, a nettle, a flea and a louse.

and, to avoid tedious disputes in future and to know the truth of the phenomena of celestial bodies more exactly, she commanded the bear-men, who were her experimental philosophers, to observe them through the instruments called telescopes. This they did, according to Her Majesty's command. But these telescopes caused more differences and divisions among them than they had ever had before: some said they perceived that the sun stood still and the earth moved around it; others were of the opinion that both moved; and others again said that the earth stood still and the sun moved. Some counted more stars than others. Some discovered new stars never seen before. Some fell into a great dispute with others about the size of the stars; some said the moon was another world like their terrestrial globe, and the spots in it were hills and valleys; but others held that the spots were the land, and the smooth, glossy parts the sea. At last the Empress commanded them to go with their telescopes to the very end of the pole that was joined to the world she came from, and see whether they could perceive any stars in it. This they did, and on returning to Her Majesty they reported that they had seen three blazing stars appear there, one after another within a short time, two of them bright and one dim. But they could not agree about this observation either. Some said it was only one star, which appeared at three different times in different places;[20] and others held them to be three separate stars. These thought it impossible that the three separate appearances should have been only one star, because every star rose at a certain time, appeared in a certain place, and disap-

20 Probably an allusion to the comets seen in Europe in 1664–65, which observers likewise disputed.

peared in the same place. Next, they said, it is altogether improbable that one star should fly from place to place, especially across so vast a distance, without visible motion, in so short a time, and appear in such different places, two of them quite opposite each other and the third off to the side. Lastly, they said, if it had been only one star, it would always have kept the same splendor, which it did not; for, as mentioned above, two were bright and one was dim. After they had argued in this way, the Empress began to grow angry with their telescopes for giving no better intelligence. "Now I plainly perceive," she said, "that your glasses are false informers. Instead of discovering the truth, they delude your senses. Therefore I command you to break them, and let the bird-men trust only to their natural eyes and examine celestial objects by the motions of their own sense and reason." The bear-men replied that their glasses were not to blame for the differences in their opinions. The cause was that the sensitive motions in their optic organs did not move alike, and their rational judgments were not always regular. The Empress answered that if their glasses were true informers, they would correct their irregular sense and reason. "But," she said, "Nature has made your sense and reason more regular than art has made your glasses. They are mere deluders, and will never lead you to the knowledge of truth. Therefore I command you again to break them; for you may observe the progressive motions of celestial bodies better with your natural eyes than through artificial glasses." The bear-men, exceedingly troubled at Her Majesty's displeasure about their telescopes, knelt down and in the humblest manner petitioned that they might not be broken. "For," they said, "we take more delight in artificial delusions than in natural truths." "Besides, we shall lack employment for our senses and subjects for argument. If there were nothing but truth and no falsehood, there would be no occasion to dispute, and so we should lose the aim and pleasure of our endeavors, which is to refute and contradict one another. Nor would one man be thought wiser than another; all would either be equally knowing and wise, or all would be fools. Therefore

we most humbly beseech Your Imperial Majesty to spare our glasses, which are our only delight and as dear to us as our lives." At last the Empress consented to their request, but on condition that their disputes and quarrels stay within their schools and cause no factions or disturbances in state or government. The bear-men, full of joy, returned their most humble thanks to the Empress. To make amends for the displeasure their telescopes had caused, they told Her Majesty that they had several other artificial optical glasses, which they were sure would give her a great deal more satisfaction. Among the rest, they brought out several microscopes, by means of which they could enlarge the shapes of little bodies and make a louse appear as big as an elephant and a mite as big as a whale. First of all they showed the Empress a gray drone-fly. They observed that the greatest part of her face, indeed of her head, consisted of two large bunches, all covered over with a multitude of small pearls or hemispheres in a triangular arrangement. These pearls were of two sizes, smaller and bigger. The smaller sort were lowermost and looked toward the ground; the other sort were above and looked sideways, forward, and backward. They were all so smooth and polished that they could represent the image of any object, and there were 14,000 of them in all.[21] After viewing this strange and miraculous creature and making their several observations on it, the Empress asked them what they judged those little hemispheres might be. They answered that each of them was a perfect eye, because they perceived that each was covered with a transparent cornea and contained a liquid that resembled the watery or glassy humor of the eye. The Empress replied that they might be glassy pearls and yet not eyes, and that perhaps their microscopes did not inform them truly. But they smiled and answered Her Majesty that she did not know the power of those microscopes, for they never delude but correct and inform the senses. Indeed, they said, the world

21 The drone-fly, the charcoal, the nettle, the flea and the louse that follow are all taken from Robert Hooke's *Micrographia* (1665), which Cavendish had attacked in her *Observations upon Experimental Philosophy* (1666).

would be no better than blind without them, as it had been in former ages before microscopes were invented.

1.20 After this they took a piece of charcoal and viewed it with one of their best microscopes. They discovered in it an infinite multitude of pores, some bigger and some smaller, so close and thick that they left very little space between them to be filled with solid body. To give Her Imperial Majesty better assurance of this, they counted no fewer than 2,700 pores in a line of them an inch long; and from this observation they drew the following conclusion: that this multitude of pores was the cause of the coal's blackness. For, they said, a body that has so many pores, none of which reflects any light, must necessarily look black, since black is nothing but a privation of light, or a lack of reflection. But the Empress replied that if all colors were made by the reflection of light, and black was as much a color as any other, then they certainly contradicted themselves in saying that black was made by a lack of reflection. "However," she said, "so as not to interrupt your microscopic inspections, let us see how vegetables appear through your glasses." So they took a nettle and, by the power of the microscope, discovered that underneath the points of the nettle there were certain little bags or bladders containing a poisonous liquid. When the points had made their way into the inner parts of the skin, they served like syringe-pipes to convey that same liquid into them. To this observation the Empress replied that if there were such poison in nettles, then surely eating them would hurt us inwardly as much as they do outwardly? But they answered that it was the business of physicians more than of experimental philosophers to give the reasons for this. They only made microscopic inspections and reported the figures of the natural parts of creatures as their glasses represented them.

1.21 Lastly, they showed the Empress a flea and a louse, creatures that looked so terrible through the microscope that they almost made her faint. A description of all their parts would be very tedious, so I'll refrain from it for the present. After viewing those strangely shaped creatures, the Empress

greatly pitied those who are pestered by them, especially poor beggars. Although they have nothing to live on themselves, they are still forced to maintain and feed, from their own flesh and blood, a company of such terrible creatures called lice. Instead of thanking them, the lice reward them with pain and torment them for giving them nourishment and food. After the Empress had seen the shapes of these monstrous creatures, she wished to know whether their microscopes could prevent their biting, or at least show some way of avoiding them. They answered that such arts were mechanical and beneath the noble study of microscopic observation. Then the Empress asked whether they did not have glasses that could enlarge and magnify the shapes of great bodies as well as they had done those of little ones. So they took one of their best and largest microscopes and tried to view a whale through it; but alas! the whale's shape was so big that its circumference went beyond the magnifying power of the glass. Whether the error came from the glass, or from the whale being wrongly placed with respect to the reflection of light, I cannot say for certain. The Empress saw that those magnifying glasses fell short and could not enlarge every sort of object. So she asked the bear-men whether they could not make glasses of the opposite nature to those they had shown her: glasses that, instead of enlarging or magnifying the shape or figure of an object, could shrink it below its natural proportion. In obedience to Her Majesty's commands, they did so. Viewed through one of the best of them, a huge and mighty whale appeared no bigger than a sprat, and through some no bigger than a vinegar-eel. Through their ordinary ones, an elephant seemed no bigger than a flea, a camel no bigger than a louse, and an ostrich no bigger than a mite.[22] To relate all their optical observations through their various kinds of glasses would be a tedious work and would tire even the most patient reader, so I'll pass them by. Only this was very remarkable and worth noting. For all their great skill, industry, and ingenuity in experimental

22 Vinegar-eel: a tiny worm found in vinegar, one of the favorite sights of early microscopists.

philosophy, they could by no means contrive glasses that would let them spy out a *vacuum* with all its dimensions. Nor could they spy out immaterial substances, non-beings, and mixed beings, that is, such as are between something and nothing. They were very much troubled at this, but hoped that in time, by long study and practice, they might perhaps achieve it.

THE FISH-MEN AND THE WORM-MEN

The fish- and worm-men explain the tides, blood, breathing, generation, frost, springs and metals.

1.22 When the bird- and bear-men had been dismissed, the Empress called both the sirens, or fish-men, and the worm-men, to deliver the observations they had made within the seas and within the earth. First she asked the fish-men where the saltiness of the sea came from. They answered that there was a volatile salt in those parts of the earth which, like a bosom, contain the waters of the sea. This salt, being imbibed by the sea, became fixed, and this imbibing motion was what they called the ebbing and flowing of the sea. For, they said, the rising and swelling of the water is caused by those parts of the volatile salt that are not so easily imbibed. Striving to rise above the water, they bear it up with a motion like the one a man or some other animal uses to take breath during violent exercise.[23] This, they affirmed, was the true cause both of the saltiness of the sea and of its ebbing and flowing motion. It was not the jogging of the earth, or the secret influence of the moon, as some others had made the world believe.[24]

1.23 After this the Empress asked whether they had observed that all animals within the seas and other waters had blood. They answered that some had blood, more or less, but some had none. "In crayfish and lobsters," they said, "we perceive only a

23 In the chemistry of the day a "volatile" salt was one that readily rose as vapor; a "fixed" salt stayed put.

24 "The jogging of the earth" alludes to Galileo's theory that the tides arise from the earth's motions; the moon's influence was the older explanation.

little blood, but in crabs, oysters, cockles, etc., none at all." Then the Empress asked them in what part of their bodies that little blood resided. They answered that it was in a small vein, which in lobsters ran through the middle of their tails but in crayfish was found in their backs. As for other sorts of fish, some, they said, had blood only about their gills, and others in some other parts of their bodies; but they had not yet observed any whose veins spread all over their bodies. The Empress wondered that there could be living animals without blood. To be better satisfied, she asked the worm-men to tell her whether they had observed blood in all sorts of worms.[25] They answered that, as far as they could perceive, some had blood and some did not. A moth, they said, had no blood at all, and a louse had only a little vein along her back, like a lobster. Nits, snails, and maggots also had no blood, whether the maggots were generated out of cheese and fruit or produced out of flesh. "But," replied the Empress, "if the creatures you mention have no blood, how is it possible for them to live? For it is commonly said that the life of an animal consists in the blood, which is the seat of the animal spirits." They answered that blood was not a necessary property of an animal's life. What was commonly called animal spirits was nothing but corporeal motions proper to the nature and figure of an animal. Then she asked both the fish- and worm-men whether all creatures that have blood had a circulation of blood in their veins and arteries.[26] But they answered that it was impossible to give Her Majesty an exact account of this. The circulation of blood was an interior motion, which their senses could not perceive, either by themselves or with the help of any optical instrument. And as soon as they dissected an animal to find out the truth of it, the interior corporeal motions proper to that particular figure or creature were altered. Then the Empress said, "If not all animals have blood, then it is certain that not all of them have muscles, tendons, nerves, etc. But," she

25 "Worms" here covers insects and other small creeping creatures as well.
26 Animal spirits: in traditional physiology, a subtle fluid thought to carry sensation and motion through the nerves.

said, “have you ever observed animals that are neither flesh nor fish, but of an intermediate degree between both?” “Truly,” answered both the fish- and worm-men, “we have observed several animals that live equally well in water and on land. If any creatures may be said to be of such a mixed nature, partly flesh and partly fish, it is surely those.” “But how is it possible,” replied the Empress, “that they should live both in water and on land? Those animals that live by breathing air cannot live in water, and those that live in water cannot live by breathing air, as experience sufficiently testifies.” They answered Her Majesty that just as there were different sorts of creatures, so they also had different ways of respiration. For respiration, they said, is nothing but a composition and division of parts, and since the motions of nature are infinitely various, it is impossible for all creatures to have the same motions. So it was not necessary for every animal to be bound to live either by air only or by water only. Each lived as Nature had ordered it to suit its species. The Empress seemed very well satisfied with their answer. She wished to know further whether all animals continued their species by a successive propagation of individuals, and whether in every species the offspring always resembled their generator or producer in both their interior and exterior figures. They answered Her Majesty that some species or sorts of creatures were kept up by a successive propagation of offspring resembling the producer, but some were not. “Of the first rank,” they said, “are all those animals that are of different sexes, besides several others. Of the second rank are, for the most part, those we call insects. Their production proceeds from causes that have no conformity or likeness to the effects they produce; for example, maggots bred out of cheese, and several others generated out of earth, water, and the like.” “But,” said the Empress, “there is some likeness between maggots and cheese, for cheese has no blood, and neither do maggots. Besides, they have almost the same taste as cheese.” “This proves nothing,” they answered, “for maggots have a visible, local, progressive motion, which

cheese does not."[27] The Empress replied that once all the cheese was turned into maggots, it might be said to have local, progressive motion. They answered that when the cheese had been changed into maggots by its own figurative motions, it was no longer cheese. The Empress confessed that she observed Nature to be infinitely various in her works, and that though the species of creatures continued, their individuals were subject to infinite changes. "But since you have informed me," she said, "of the various sorts and productions of animals, I desire you to tell me what you have observed of their sensitive perceptions." "Truly," they answered, "Your Majesty puts a very hard question to us, and we shall hardly be able to give a satisfactory answer to it. There are many different sorts of creatures, and just as they all have different perceptions, so they also have different organs, which our senses are not able to discover. Only in an oyster shell have we observed, with wonder, that the common *sensorium* of the oyster lies just at the closing of the shells. There the pressure and reaction may be perceived by the opening and shutting of the shells every tide."[28]

1.24 After all this, the Empress asked the worm-men to give her a true account of how frost was made on the earth. They answered that it was made much in the way the fish- and bird-men had described the congealing of water into ice and snow, by a mixture of saline and acid particles. This account shed great light for the ape-men, who were the chemists, on their chemical principles: salt, sulfur, and mercury.[29] "But," said the Empress, "if that is so, it will take an infinite multitude of saline particles to produce such a great quantity of ice, frost, and snow. Besides," she said, "when snow, ice, and frost turn back into their former principle, I would very much like to know what becomes of those saline particles." But neither the worm-men nor the fish- and bird-men could give her an answer to it.

27 The belief that insects were bred spontaneously from cheese, mud or rotting matter was still common; Francesco Redi published experiments against it in 1668.
28 *Sensorium*: the supposed central seat of sensation in a living body.
29 Salt, sulfur, and mercury were the three principles of matter in the chemistry of Paracelsus (1493–1541) and his followers.

1.25 Then the Empress asked them why springs were not as salty as the sea, and also why some of them ebbed and flowed. It was answered that the ebbing and flowing of some springs was caused by hollow caverns within the earth. There the seawater, crowding through, pushed the spring water forward and drew it back, according to its own way of ebbing and flowing. But others said that it came from a small proportion of saline and acid particles that the spring water absorbed from the earth. Although this was not enough to be perceived by the sense of taste, it was still enough to cause an ebbing and flowing motion. As for spring water being fresh, they gave, according to their observation, the following reason. "There is," they said, "a certain heat within the bowels of the earth, which comes from its swift circular motion on its own axis. This heat distills the rarest parts of the earth into a fresh and tasteless water. When this water is carried through the pores of the earth to a place where it can break out without resistance or obstruction, it makes springs and fountains. And these distilled waters within the earth nourish and refresh its coarser and drier parts." This account confirmed the Empress in the opinion the bird-men had given her about the motion of the earth and the fixedness of the sun. Then she asked the worm-men whether minerals and vegetables were generated by the same heat that is within the bowels of the earth. To this they could give her no positive answer. They affirmed only this: that heat and cold were not the primary producing causes of vegetables, or minerals, or any other sorts of creatures, but only effects. "And to prove this assertion of ours," they said, "we have observed that, by a change in some sorts of corporeal motions, what is now hot will become cold, and what is now cold will grow hot. But the hottest place of all we find to be the center of the earth. Nor do we observe that the torrid zone contains as much gold and silver as the temperate zones. Nor is there a great store of iron and lead wherever there is gold, for these metals are found mostly in colder climates, toward either of the poles." The Empress commanded them to confer with her chemists, the ape-men, about

this observation, and to let them know that gold was produced not by a violent but by a temperate degree of heat. She asked further whether gold could not be made by art. They answered that they could not tell Her Majesty for certain, but if it could be done at all, they thought tin, lead, brass, iron, and silver the fittest metals for such an artificial transmutation. Then she asked them whether art could produce iron, tin, lead, or silver. They answered: not in their opinion. "Then I see," replied the Empress, "that your judgments are very irregular. You believe that gold, which is so fixed a metal that nothing has yet been found that could bring about the dissolution of its interior figure, can be made by art. Yet you do not believe that of tin, lead, iron, copper, or silver, which are far weaker and baser metals than gold." But the worm-men excused themselves. They said that they were ignorant of that art, and that such questions belonged more properly to the ape-men, who were Her Majesty's chemists.

COLOR, SEEDS AND THE EARTH

The worm-men laugh at the idea of a colorless body and explain seeds, forms and creatures underground.

1.26 Then the Empress asked them whether by their sensitive perceptions they could observe the interior, corporeal, figurative motions of both vegetables and minerals. They answered that their senses could perceive them after they were produced, but not before. "Nevertheless," they said, "although the interior, figurative motions of natural creatures are not subject to the exterior, animal, sensitive perceptions, still by their rational perception they may judge of them, and of their productions, if they are regular." Whereupon the Empress commanded the bear-men to lend them some of their best microscopes. At this the bear-men answered Her Majesty with a smile that their glasses would do the worm-men little service in the bowels of the earth, because there was no light. "For," they said, "our glasses only represent exterior objects according to the various reflections

and positions of light. Wherever light is lacking, the glasses will do no good." The worm-men replied that although they could not say much about refractions, reflections, inflections, and the like, they were not blind, even in the bowels of the earth. They could see the various sorts of minerals, and also the minute animals that lived there. Nor were these minute animal creatures blind either. They had some kind of sensitive perception that served them as well as sight, taste, smell, touch, hearing, etc. served other animal creatures. From this it is evident that nature has been as bountiful to the creatures that live underground, or in the bowels of the earth, as to those that live on the surface of the earth, or in the air, or in water. "But in any case," the worm-men went on, "even granting that there is light in the bowels of the earth, your microscopes would still do little good there. The creatures that live underground do not have the same optic sense as those that live on the surface of the earth. So unless you had glasses suited to their perception, your microscopes will be of no advantage to them." The Empress seemed well pleased with this answer from the worm-men, and asked them further whether minerals and all the other creatures within the earth were colorless. At this question they could not help laughing; and when the Empress asked them why they laughed, "We most humbly beg Your Majesty's pardon," they replied, "for we could not help laughing when we heard of a colorless body." "Why," said the Empress, "color is only an accident. It is an immaterial thing, and has no being of its own, but only in another body." "Those who informed Your Majesty so," they replied, "surely had very irregular rational motions. For how is it possible that a natural nothing can have a being in nature?[30] If it is no substance, it cannot have a being; and if it has no being, it is nothing. So the distinction between subsisting of itself and subsisting in another body is a mere nicety, and nonsense. There is nothing in nature that can subsist of or by itself (I mean singly), because all the parts of nature are composed in one

30 In scholastic philosophy an "accident" is a quality, such as color, that cannot exist by itself but only in a substance.

body. Though they may be infinitely divided, mixed, and changed in their particulars, yet in general, parts cannot be separated from parts as long as nature lasts. Indeed, we might just as plausibly claim that infinite nature could be destroyed as that a single atom could perish. And therefore Your Majesty may firmly believe that there is no body without color, and no color without body. For color, figure, place, magnitude, and body are all just one thing, without any separation or abstraction from one another."

1.27 The Empress was so wonderfully taken with this discourse of the worm-men that she not only pardoned the rudeness they had committed in laughing at her question at first, but gave her full assent to their opinion, which she thought the most rational she had ever yet heard. Then, going on with her questions, she asked further whether they had observed within the earth any seminal principles, free from all dimensions and qualities, which produced vegetables, minerals, and the like. They answered that their sensitive perceptions had never observed any seeds of minerals; but vegetables had certain seeds from which they were produced. Then she asked whether those seeds of vegetables lost their species—that is, were annihilated—in the production of their offspring. They answered that nothing could be produced by annihilation. The seeds of vegetables were so far from being annihilated in their productions that they rather increased and multiplied in number. "For the division of one seed," they said, "produces numbers of seeds out of itself." "But," replied the Empress, "a particular part cannot increase of itself." "That is true," they answered, "but they do not increase merely of themselves. They increase by joining and mixing with other parts, which assist them in their productions and, by way of imitation, form or figure their own parts into such and such particulars." "Then please tell me," said the Empress, "what disguise those seeds put on, and how they conceal themselves in their transmutations?" They answered that seeds did not disguise or conceal themselves in any way, but rather revealed themselves in the multiplication of their offspring. Only, they hid and con-

cealed themselves from their sensitive perceptions, so that their figurative and productive motions were not perceptible to animal creatures. Again the Empress asked them whether there were any non-beings within the earth. They answered that they had never heard of any such thing. If Her Majesty wanted to know the truth of it, she must ask the creatures called immaterial spirits, which had a great affinity with non-beings and could perhaps give her a satisfactory answer to this question. Then she asked to be told what opinion they had of the beginning of forms. They told Her Majesty that they did not understand what she meant by this expression. "For," they said, "there is no beginning in nature, not even of particulars. Nature is eternal and infinite, and her particulars are subject to infinite changes and transmutations by virtue of their own corporeal, figurative self-motions. So there is nothing new in nature, nor properly a beginning of anything." The Empress seemed well satisfied with all these answers, and asked further whether no art was used by the creatures that live within the earth. "Yes," they answered, "for the various parts of the earth join and assist one another in composing or framing such and such particulars. And many times there are factions and divisions, which cause productions of mixed species: for example, weeds instead of sweet flowers and useful fruits. But gardeners and farmers often settle their quarrels and make them agree. Though this shows kindness to the differing parties, it is a great harm to the worms and other animal creatures that live underground. It most commonly causes their dissolution and ruin, and at best they are driven out of their homes." "What," said the Empress, "are worms not produced out of the earth?" "Their production in general," they answered, "is like the production of all other natural creatures, and proceeds from the corporeal, figurative motions of nature. But their particular productions are according to the nature of their species: some are produced out of flowers, some out of roots, some out of fruits, some out of ordinary earth." "Then they are very ungrateful children," replied the Empress, "to feed on their own parents, who gave them life." "Their life," they

answered, "is their own, and not their parents'. No part or creature of nature can either give or take away life. Parts only assist and join with parts, either in the dissolution or in the production of other parts and creatures."

THE APE-MEN

The chemists quarrel over first principles; the Empress calls nature one self-moving body and hears of a youth-restoring gum.

1.28 After this and several other conferences that the Empress held with the worm-men, she dismissed them. Since she had taken much satisfaction in several of their answers, she encouraged them in their studies and observations. Then she called a convocation of her chemists, the ape-men, and commanded them to give her an account of the various transmutations their art was able to produce. They began with a long and tedious discourse about the primitive ingredients of natural bodies, and how, by their art, they had found out the principles those bodies consist of. But they did not all agree in their opinions. Some said that the principles of all natural bodies were the four elements, fire, air, water, and earth, out of which they were composed. Others rejected this elementary mixture. They said there were many bodies from which none of the four elements could be extracted by any degree of fire whatsoever; and that, on the other hand, there were various bodies whose resolution by fire reduced them to more than four different ingredients. These affirmed that the only principles of natural bodies were salt, sulfur, and mercury. Others again declared that none of the aforementioned could be called the true principles of natural bodies. Through the industry and pains they had taken in the art of chemistry, they had discovered that all natural bodies were produced from only one principle, which was water. "For all vegetables, minerals, and animals," they said, "are nothing but simple water, distinguished into various figures by the virtue of their seeds."[31] But after a great many debates and disputes on this sub-

31 The view that all bodies are water shaped by seeds was van Helmont's.

ject, the Empress grew so tired that she could not listen to them any longer. She imposed a general silence on them, and then declared her own view in the following discourse.

1.29 I am all too aware of the pains you have taken in the art of chemistry to discover the principles of natural bodies, and I wish they had been spent more profitably on something other than such experiments. Both by my own contemplation and by the observations I have made of Nature and her works through rational and sensitive perception, I find that Nature is only one infinite self-moving body. By virtue of its self-motion it is divided into infinite parts, and these parts, being restless, undergo perpetual changes and transmutations through their infinite compositions and divisions. Now if this is so—and surely, according to regular sense and reason, it appears no other way—it is in vain to look for primary ingredients or constitutive principles of natural bodies. There is only one universal principle of Nature, namely self-moving matter, which is the only cause of all natural effects. Next, I ask you to consider that fire is only a particular creature, or effect, of Nature. It not only produces different effects in different bodies but has no power at all over some bodies. Witness gold, which has never yet been brought to change its interior figure by the art of fire. And if this is so, why should you be so simple as to believe that fire can show you the principles of Nature? Why believe that the four elements, or water alone, or salt, sulfur and mercury—all of which are nothing more than particular effects and creatures of Nature—should be the primitive ingredients or principles of all natural bodies? Therefore I will not have you take more pains and waste your time in such fruitless attempts. Be wiser from now on, and busy yourselves with such experiments as may benefit the public.

1.30 Having declared her mind to the ape-men in this way, the Empress had given them better instructions than they perhaps expected, for they did not know that Her Majesty had such great and able judgment in natural philosophy. She then had several conferences with them concerning chemical preparations,

which for brevity's sake I'll forbear to rehearse. Among other things, she asked how it was that the imperial race appeared so young and yet was reported to have lived so long—some of them two, some three, and some four hundred years. And was this by Nature, or by a special divine blessing? They answered that there was a certain rock in those parts of that world which contained the golden sands. This rock was hollow inside and produced a gum that took a hundred years to come to its full strength and perfection. This gum, they said, if held in a warm hand, will dissolve into an oil, whose effects are as follows: Given every day for a certain time to an old, decayed man, in a dose the size of a small pea, it will first make him spit for a week or more. After this it will cause vomiting of phlegm. After that it will bring up, by vomiting, humors of several colors: first pale yellow, then deep yellow, then green, and lastly black. Each of these humors has a different taste: some are fresh, some salty, some sour, some bitter, and so on. Nor do all these vomits make them sick; they come out suddenly and unexpectedly, without any pain or trouble to the patient. After it has produced all these effects and cleared both the stomach and several other parts of the body, it works on the brain. It brings out through the nose the same kinds of humors it brought out of the mouth, and in much the same manner. Then it will purge by stool, then by urine, then by sweat, and lastly by bleeding at the nose and the hemorrhoids. It will produce all these effects within six weeks or a little more, for it does not work very strongly, but gently and by degrees. Lastly, when it has done all this, it will make the body break out in a thick scab and cause the hair, teeth and nails to come off. When this scab has reached its full maturity, it opens first along the back and comes off all in one piece, like a suit of armor. All this is done within the space of four months. After this the patient is wrapped in a cerecloth prepared from certain gums and juices. He stays in it until nine months have passed from the first beginning of the cure, which is the time a child takes to form in the womb. Meanwhile his diet is nothing but eagles' eggs and hinds' milk. When the cerecloth is taken

away, he will appear twenty years old, both in shape and in strength. The weaker sort of this gum is sovereign for healing wounds and curing slight illnesses.[32] But it should also be observed that none of the imperial race drinks anything but lime-water, that is, water in which limestone has been steeped. Their food is nothing but fowl of various sorts. Their recreations are many, but chiefly hunting.

1.31 This account amazed the Empress greatly. In the world she came from she had heard great reports of the philosophers' stone, but she had not heard of anyone who had ever actually found it, which made her believe it was only a chimera. She also recalled that there had been a man in that same world who had a little stone that cured all kinds of diseases, outward and inward, according to how it was applied. She recalled too that a famous chemist had discovered a certain liquor called *alkahest*, which by virtue of its own fire consumed all diseases;[33] but she had never heard of a medicine that could renew old age and make it beautiful, vigorous and strong. Nor would she have believed it so easily had it been a medicine prepared by art, for she knew that art, being Nature's changeling, was not able to produce so powerful an effect. But since the gum grew naturally, she had fewer scruples about it. She knew that Nature's works are so various and wonderful that no particular creature is able to trace her ways.

PHYSICIANS, MATHEMATICIANS AND LOGICIANS

Physicians and anatomists report; the spider-men baffle her, and the logicians' syllogisms exhaust her patience.

1.32 When the conferences with the chemists were finished, the Empress called an assembly of her Galenic physicians, her herbalists and her anatomists. First she asked her herbalists about the particular effects of various herbs and drugs, and where

32 A cerecloth is a waxed cloth, of the kind used to wrap the dead.
33 The alkahest was a universal solvent proposed by Paracelsus and championed by van Helmont.

those effects came from. They answered that for the most part they could tell Her Majesty the virtues and operations of them, but the particular causes of their effects were unknown. They could say only this much: their operations and virtues were generally caused by their own inherent, corporeal, figurative motions. These motions, being infinitely various in infinite Nature, produced infinitely many different effects. And it has been observed, they said, that herbs and drugs are as wise in their operations as men are in their words and actions—indeed, wiser—and their effects are more certain than men are in their opinions. Though they cannot discourse like men, they have sense and reason just as men do. The discursive faculty is only a particular effect of sense and reason in some particular creatures, namely men, and not a principle of Nature, and it often shows more folly than wisdom. The Empress asked whether, by compounding and mixing them with other drugs, they could not make them produce other effects than they did when used by themselves. They answered that they could make them produce artificial effects, but could not alter their inherent, proper and particular natures.

1.33 Then the Empress commanded her anatomists to dissect the kinds of creatures that are called monsters. But they answered Her Majesty that it would be an unprofitable and useless work, and would keep them from their better employments. "When we dissect dead animals," they said, "it is for no other purpose than to observe what defects or disorders they had, so that we may cure the like in living ones. So all our care and industry concerns only the preservation of mankind; but we hope Your Majesty will not preserve monsters, which are most commonly destroyed, unless it be for novelty. Nor will dissecting monsters prevent the errors of Nature's irregular actions, for by dissecting some we cannot prevent the production of others. So our pains and labor will serve no purpose, except to satisfy the vain curiosity of inquisitive men." The Empress replied that such dissections would be very beneficial to experimental philosophers. "If experimental philosophers," they answered, "spend

their time on such useless inspections, they waste it in vain, and have nothing but their labor for their pains."

1.34 Lastly, Her Majesty had some conferences with the Galenic physicians about several diseases. Among other things, she wished to know the cause and nature of apoplexies and of the spotted plague. They answered that a deadly apoplexy was a dead palsy of the brain, and the spotted plague was a gangrene of the vital parts. As gangrene of the outward parts struck inward, so gangrene of the inward parts broke out outward. This is the reason, they said, that death follows as soon as the spots appear;[34] for then it is an infallible sign that the body is infected throughout with gangrene, which is a spreading evil. But some gangrenes spread more quickly than others, and of all sorts of gangrene the plague-gangrene is the most infectious. Other gangrenes infect only the adjoining parts of one particular body, and having killed that creature, they go no further but stop. The gangrene of the plague, by contrast, infects not only the adjoining parts of one particular creature but also those at a distance. That is, one particular body infects another, and so breeds a universal contagion. But the Empress was very eager to know how the plague was propagated and became so contagious, and she asked whether it actually passed out of one body into another. They answered that it was a great dispute among the learned of their profession. Did it come by a division and composition of parts—that is, by breathing out and breathing in? Or was it caused by imitation? "Some experimental philosophers," they said, "would have us believe that with the help of their microscopes they have observed the plague to be a body of little flies like atoms, which go out of one body into another through the sensitive passages. But the most experienced and wisest of our society have rejected this opinion as a ridiculous fancy. For the most part they believe that it is caused by an imitation of parts: the motions of some parts that are sound imitate the motions of

34 Apoplexy is what we would call a stroke. The "spotted plague" is the plague, named for the dark spots ("tokens") on the skin that were taken as a sign of approaching death.

those that are infected, and by this means the plague becomes contagious and spreading."[35]

1.35 So far the Empress had spent her time examining the bird-, fish-, worm- and ape-men, etc., and had received various reports from their several employments. At last she wanted to divert herself after her serious discourses. So she sent for the spider-men, who were her mathematicians, the lice-men, who were her geometricians, and the magpie-, parrot- and jackdaw-men, who were her orators and logicians. The spider-men came first and presented Her Majesty with a table full of mathematical points, lines and figures of all sorts: squares, circles, triangles and the like. The Empress had a very ready wit and quick apprehension, yet she could not understand them; the more she tried to learn, the more confused she became. Whether they ever squared the circle I cannot exactly tell, nor whether they could make imaginary points and lines. But this I dare say: their points and lines were so slender, small and thin that they seemed next to imaginary. The mathematicians were held in great esteem by the Empress. They were not only the chief tutors and instructors in many arts; some of them were also excellent magicians and informers of spirits. That was why their symbols were so abstruse and intricate that the Empress did not know what to make of them. "There is so much to learn in your art," she said, "that I cannot spare time from other affairs to busy myself with your profession. Nor, if I could, do I think I should ever be able to understand your imaginary points, lines and figures, because they are non-beings."

1.36 Then came the lice-men, who tried to measure all things to a hair's breadth and weigh them to an atom. But their weights seldom agreed, especially in weighing air, which they found to be an impossible task. At this the Empress began to be dis-

35 In 1658 the Jesuit scholar Athanasius Kircher reported seeing tiny "worms" in the blood of plague victims under the microscope. "Imitation" draws on Cavendish's own theory, in which perception is matter patterning itself on other matter.

pleased, and told them that there was neither truth nor justice in their profession; and so she dissolved their society.

1.37 After this, the Empress resolved to hear the magpie-, parrot- and jackdaw-men, who were her professed orators and logicians. One of the parrot-men rose with great formality and tried to make an eloquent speech before Her Majesty. But before he was halfway through, his arguments and divisions were so many that they threw his brain into great confusion. He could not go forward but was forced to retreat backward, to the great disgrace both of himself and of the whole society. One of his brethren tried to second him with another speech, but he was as much at a loss as the first. At this the Empress appeared not a little troubled. She told them that they followed the rules of art too closely, and confounded themselves with overly nice formalities and distinctions. "But since I know," she said, "that you are a people with naturally voluble tongues and good memories, I desire you to consider the subject you speak of more than your artificial periods, connections and parts of speech, and leave the rest to your natural eloquence." This they did, and so became very eminent orators.

1.38 Lastly, Her Imperial Majesty wanted to know what progress her logicians had made in the art of disputing, and commanded them to argue on several themes or subjects. They did so. After a very subtle discourse on logical terms and propositions, they entered into a dispute by way of syllogistic arguments, through all the figures and modes. One began with an argument in the first mode of the first figure, thus:[36]

1.39 Another contradicted him with a syllogism in the second mode of the same figure, thus:

1.40 The third made an argument in the third mode of the same figure, in this way:

1.41 The fourth concluded with a syllogism in the fourth mode of the same figure, thus:

36 In scholastic logic, syllogisms were classified by "figure" (the arrangement of the terms) and "mode" or mood (the kinds of propositions used).

1.42 After this they took another subject, and one put forward this syllogism:

1.43 But another said that this argument was false, and so he contradicted him with a syllogism of the second figure of the fourth mode, thus:

1.44 Thus they argued, and they meant to go on, but the Empress interrupted them. "I have had enough," she said, "of your chopped logic, and I will hear no more of your syllogisms, for they disorder my reason and put my brain on the rack. Your formal argumentations are enough to spoil all natural wit. And I would have you consider that art does not make reason, but reason makes art; and therefore, as far as reason is above art, so far is a natural rational discourse to be preferred to an artificial one. For art is for the most part irregular. It disorders men's understandings more than it corrects them, and it leads them into a labyrinth from which they'll never get out, and makes them dull and unfit for useful employment. This is especially true of your art of logic, which consists only in contradicting one another, in making sophisms, and in obscuring truth instead of clearing it."

1.45 But they replied to Her Majesty that the knowledge of nature, that is, natural philosophy, would be imperfect without the art of logic, and that there was an improbable truth which could be found out no other way than by the art of disputing. "Truly," said the Empress, "I believe it is with natural philosophy as it is with all other effects of nature: no particular knowledge can be perfect, because knowledge is divisible as well as composable. Indeed, to speak properly, Nature herself cannot boast of any perfection; only God himself can. For there are so many irregular motions in Nature, and it is mere folly to think that art should be able to regulate them, since art itself is, for the most part, irregular. But as for improbable truth, I do not know what you mean, for truth is more than improbability. Indeed, there is so much difference between truth and improbability that I cannot conceive how they could possibly be joined together. In short," she said, "I in no way approve of your profession. I will

not dissolve your society, but I shall never take pleasure in hearing you again. So confine your disputations to your schools, lest, besides the commonwealth of learning, they also disturb divinity and policy, religion and laws, and by that means bring utter ruin and destruction on both Church and State."

FIRE-STONE AND STAR-STONE

The Empress converts her subjects with two revolving chapels, one burning with fire-stone, one shining with star-stone.

1.46 When the Empress had thus finished her discourses and conferences with the societies of her *virtuosos* mentioned above, she considered privately the manner of their religion. Finding it very defective, she was troubled that so wise and knowledgeable a people should have no more knowledge of divine truth. So she consulted her own thoughts as to whether it was possible to convert them all to her own religion. To that end she resolved to build churches, and also to form a congregation of women, of which she intended to be the head herself, and to instruct them in the several points of her religion. No sooner had she begun this than the women, who generally had quick wits, subtle conceptions, clear understandings and solid judgments, became in a short time very devout and zealous sisters. For the Empress had an excellent gift for preaching and for instructing them in the articles of faith. By that means she not only converted them quickly but also won an extraordinary love from all her subjects throughout that world. But at last she pondered the inconstant nature of mankind, and feared that in time they would grow weary and desert the divine truth, following their own fancies and living according to their own desires. She began to be troubled that her labors and pains might come to so little, and so she studied every possible way to prevent it. Among other things, she called to mind an account the bird-men had once given her of a mountain that burned in flames of fire. At once she sent for the wisest and subtlest of her worm-men, and commanded them to discover the cause of that fire's eruption. They

did so. Having dived to the very bottom of the mountain, they informed Her Majesty that there was a certain sort of stone whose nature was such that, when wetted, it would grow extremely hot and break out into flaming fire until it became dry, and then it stopped burning. The Empress was glad to hear this news, and at once asked the worm-men to bring her some of that stone, but to be sure to keep it secret. She also sent for the bird-men and asked them whether they could not get her a piece of the sun-stone. They answered that it was impossible unless they spoiled or lessened the light of the world. "But," they said, "if it please Your Majesty, we can demolish one of the numerous stars of the sky, which the world will never miss."

1.47 The Empress was very well satisfied with this proposal. Having set these two sorts of men to work, she meanwhile built two chapels, one above the other. One she lined throughout with diamonds, roof, walls and pillars, but the other she resolved to line with the star-stone. The fire-stone she placed over the diamond lining, because fire has no power over diamonds; and when she wanted the chapel with the fire-stone to appear all in flames, she had water conveyed into it through artificial pipes. When the tap was turned, the water sprang out over the whole room as from a fountain, and as long as the fire-stone was wet, the chapel seemed to be all on fire.

1.48 The other chapel, which was lined with the star-stone, cast only a splendid and comforting light. Both chapels stood on pillars right in the middle of a round cloister, which was as dark as night, and there was no other light in them but what came from the fire-stone and the star-stone. Being open on every side, they gave everyone within the compass of the cloister a clear view into them. Besides, they were so ingeniously contrived that they both moved continually in a circle about their own centers, in opposite directions. In the chapel lined with the fire-stone the Empress preached sermons of terror to the wicked, and told them of the punishments for their sins: namely, that after this life they would be tormented in an everlasting fire. But in the other chapel, lined with the star-stone, she preached sermons of

comfort to those who repented of their sins and were troubled at their own wickedness. Nor did the heat of the flame hinder her in the least; for the fire-stone did not give off so great a heat that the Empress could not endure it. The water poured on the stone turned by its own self-motion into a flaming fire, brought about by the natural motions of the stone, and this made the flame weaker than if it had been fed by some other kind of fuel. The other chapel, where the star-stone was, cast a great light, yet it was entirely without heat, and the Empress appeared in it like an angel; and as that chapel was an emblem of Hell, so this was an emblem of Heaven. And thus the Empress, by art and her own ingenuity, not only converted the Blazing World to her own religion but kept them in constant belief, without force or bloodshed. She knew well that belief was not a thing to be forced or pressed on people, but to be instilled into their minds by gentle persuasion. In the same way she encouraged them in all their other duties and employments as well. For fear, though it makes people obey, does not last as long as love, nor is it as sure a means of keeping them to their duties.

THE IMMATERIAL SPIRITS

The fly-men summon spirits, who bring news of her old world and talk of Dee, Kelly and Jonson.

1.49 Last of all, when she saw that both Church and State were now in a well-ordered and settled condition, her thoughts turned back to the world she came from. She greatly desired to know its condition, yet she could devise no way of gaining any knowledge of it. At last, after much serious consideration, she concluded that it could not be done by any means other than the help of immaterial spirits. So she called a convocation of the most learned, witty and ingenious of all the sorts of men mentioned above, and asked them whether there were any immaterial spirits in their world. First she asked the worm-men whether they had perceived any within the earth. They answered Her Majesty that they had never known of any such creatures; “for

whatever dwells within the earth," they said, "is embodied and material." Then she asked the fly-men whether they had observed any in the air. "For you, having numerous eyes," she said, "will be better able to perceive them than any other creatures." They answered Her Majesty that the worm-men in the earth could not perceive spirits, since spirits were immaterial, but that they themselves perceived that such creatures did lodge in the vehicles of the air. Then the Empress asked whether they could speak to them, and whether they understood each other.[37] The fly-men answered that those spirits were always clothed in some sort of material garments. These garments were their bodies, made for the most part of air, and when occasion served, the spirits could put on any other sort of substance. Yet they could not put these substances into any form or shape they pleased. The Empress asked the fly-men whether it was possible for her to become acquainted with them and have some conferences with them. They answered that they truly believed she might. Thereupon the Empress commanded the fly-men to ask some of the spirits whether they would be pleased to pay her a visit. This they did. The spirits presented themselves to the Empress (in what shapes or forms I cannot exactly tell), and some few compliments passed between them. Then the Empress told the spirits that she did not doubt they knew she was a stranger in that world, and by what miraculous means she had arrived there. Since she greatly desired to know the condition of the world she came from, her request to the spirits was that they give her some information about it, especially about the parts of the world where she was born, bred and educated, and also about her particular friends and acquaintances. All this the spirits did, as she desired. At last the spirits had given the Empress a great many conferences and particular pieces of news, to her great satisfaction and content. She then inquired after the most famous students, writers and experimental philosophers in that world, and they gave her a full account of them. Among other

37 "Vehicles": in the spirit-theory of the period (e.g., the Cambridge Platonist Henry More), the subtle, airy bodies in which spirits are lodged.

things she asked whether anyone had yet found out the Jewish Kabbalah. "Several have attempted it," answered the spirits, "but those who came nearest (though they themselves denied it) were one Dr. Dee and one Edward Kelly, the one representing Moses and the other Aaron; for Kelly was to Dr.[38] Dee as Aaron to Moses. Yet in the end they proved mere cheats, and they were portrayed by one of their own countrymen, a famous poet named Ben Jonson, in a play called *The Alchemist*. There he represented Kelly by Captain Face and Dee by Dr. Subtle, and their two wives by Doll Common and the widow. By the Spaniard in the play he meant the Spanish ambassador, and by Sir Epicure Mammon a Polish lord." The Empress remembered that she had seen the play, and asked the spirits whom he meant by the name of Ananias. "Some zealous brethren," they answered, "in Holland, Germany and several other places."[39] Then she asked them who was meant by the Druggist. "Truly," answered the spirits, "we have forgotten, it being so long since it was written and acted." "What," replied the Empress, "can spirits forget?" "Yes," said the spirits, "for what is past is kept only in memory, if it is not recorded." "I believed," said the Empress, "that spirits had no need of memory or remembrance, and could not be subject to forgetfulness." "How could we give an account of things present if we had no memory," they answered, "and especially of things past and unrecorded, if we had no remembrance?" "By present knowledge and understanding," said the Empress. The spirits answered that present knowledge and understanding were of actions or things present, not past. "But," said the Empress, "you know what is to come without memory or remembrance; and therefore you may know what is past without memory and remembrance." They answered that their foreknowledge was only a prudent and subtle observation made by comparing things or actions past with those that are present,

38 The Kabbalah is the Jewish tradition of mystical interpretation of Scripture. John Dee (1527–1608/9), mathematician and astrologer, and Edward Kelley (1555–1597), his medium, claimed to converse with angels.

39 Jonson's *The Alchemist* (1610); these identifications of its characters are Cavendish's own. Dee and Kelley traveled to Poland with the nobleman Albrecht Łaski.

and that remembrance was nothing other than a repetition of things or actions past.

THE SPIRITS ON THE KABBALAH

The spirits answer questions on the Kabbalah, faith and reason, matter, Paradise and the mystery of numbers.

1.50 Then the Empress asked the spirits whether there was a threefold Kabbalah. They answered that Dee and Kelly made only a twofold Kabbalah, namely, of the Old and New Testaments, but others might make not only two or three but threescore Kabbalahs, if they pleased. The Empress asked whether it was a traditional or merely a scriptural Kabbalah, or whether it was a literal, philosophical, or moral one. "Some," they answered, "believed it merely traditional, others scriptural, some literal, and some metaphorical;[40] but the truth is," they said, "that it was partly one and partly the other: partly traditional, partly scriptural, partly literal, partly metaphorical." The Empress asked further whether the Kabbalah was a work only of natural reason, or of divine inspiration. "Many who write Kabbalahs," said the spirits, "claim divine inspiration. Whether it is so or not, it is not our place to judge. Only this we must confess: it is a work that requires a good wit and a strong faith, but not natural reason. For though natural reason is most persuasive, faith is the chief thing required in Kabbalists." "But," said the Empress, "is there not divine reason, as well as natural?" "No," they answered, "for there is only a divine faith, and as for reason, it is only natural. But you mortals are so puzzled about this divine faith and natural reason that you do not well know how to distinguish them, and confound them both. That is why you have so many divine philosophers who make a hodgepodge of reason and faith together." Then she asked whether pure natural philosophers were Kabbalists. They answered, "No; only your mystical or divine philosophers, the kind who study bey-

40 Henry More's *Conjectura Cabbalistica* (1653) gave a threefold (literal, philosophical, and moral) Kabbalistic reading of Genesis. Cavendish is teasing it here.

ond sense and reason." She inquired further whether there was any Kabbalah in God, or whether God was full of ideas. They answered that there could be nothing in God, nor could God be full of anything, either forms or figures, but of himself. For God is the perfection of all things, an inexpressible being, beyond the conception of any creature, natural or supernatural. "Then please tell me," said the Empress, "whether the Jewish Kabbalah, or any other, consists in numbers." The spirits answered, "No; for numbers are odd and different, and would make a disagreement in the Kabbalah." "But," she said again, "is it a sin, then, not to know or understand the Kabbalah?" "God is so merciful," they answered, "and so just, that he will never damn the ignorant and save only those who claim to know him and his secret counsels through their Kabbalahs. He loves those who adore and worship him with fear and reverence, and with a pure heart." She asked further which of these two Kabbalahs was most approved, the natural or the theological. "The theological," they answered, "is mystical and belongs only to faith, but the natural belongs to reason." Then she asked them whether divine faith was made out of reason. "No," they answered, "for faith proceeds only from a divine saving grace, which is a special gift of God." "How does it come about, then," she replied, "that men, even those of differing opinions, all have faith, more or less?" "A natural belief," they answered, "is not a divine faith." "But," the Empress went on, "how are you sure that God cannot be known?" "The many opinions you mortals have of God," they answered, "are sufficient witness of it." "Well then," replied the Empress, "leaving this inquisitive knowledge of God, please tell me whether you spirits give motion to natural bodies." "No," they answered. "On the contrary, natural material bodies give spirits motion. For we spirits, being incorporeal, have no motion except from our corporeal vehicles, so that we move by the help of our bodies, not the bodies by our help; pure spirits are immovable." "If this is so," replied the Empress, "how is it that you can move so suddenly over a vast distance?" They answered that some sorts of matter were purer and rarer than

others, and consequently lighter and more agile, and this was the reason for their quick and sudden motions. Then the Empress asked them whether they could speak without a body, or bodily organs. "No," they said, "nor could we have any bodily sense, only knowledge." She asked whether they could have knowledge without a body. "Not natural knowledge," they answered, "but a supernatural knowledge, which is far better than a natural one." Then she asked them whether they had a general or universal knowledge. They answered that single or particular created spirits have not; for no creature but God himself can have an absolute and perfect knowledge of all things. The Empress asked them further whether spirits had inward and outward parts. "No," they answered, "for parts belong only to bodies, not to spirits." Again she asked them whether their vehicles were living bodies. "They are self-moving bodies," they answered, "and therefore they must be living; for nothing can move itself unless it has life." "Then," she said, "it must necessarily follow that this living, self-moving body gives motion to the spirit, and not the spirit motion to the body that is its vehicle." "Quite right," they answered, "and we told you this before." Then the Empress asked them what forms of matter those vehicles were made of. They said they were of several different forms, some gross and dense, and others purer, rarer, and subtler. "If you are not material," said the Empress, "how can you be the generators of all creatures?" "We are no more the generators of material creatures," they answered, "than they are the generators of us spirits." Then she asked whether they ever left their vehicles. "No," they answered; "being incorporeal, we cannot leave or quit them, but our vehicles change into various forms and figures as occasion requires." Then the Empress asked the spirits to tell her whether man was a little world. They answered that if a fly or a worm was a little world, then man was one too. She asked again whether our forefathers had been as wise as men are at present, and had understood sense and reason as well as men do now. They answered that in former ages men had been as wise as they are in this present one,

indeed, wiser. "For," they said, "many in this age think their forefathers were fools, and thereby prove themselves to be fools." The Empress asked further whether there was any plastic power in nature. "Truly," said the spirits, "'plastic power' is a hard word, and signifies no more than the power of the corporeal, figurative motions of nature." After this the Empress asked the spirits to tell her where Paradise was: whether it was in the middle of the world, as a center of pleasure,[41] or whether it was the whole world, or a particular world by itself, a world of life and not of matter; or whether it was mixed, a world of living animal creatures. They answered that Paradise was not in the world she came from, but in the world she lived in at present. It was the very same place where she kept her court and where her palace stood, in the middle of the imperial city. The Empress asked further whether in the beginning, at the creation of the world, all beasts could speak. They answered that no beasts could speak, only those sorts of creatures that were fish-men, bear-men, worm-men, and the like, which could speak in the first age as well as they do now. She asked again whether they were any of those spirits that frightened Adam out of Paradise, or at least kept him from returning there. They answered that they were not. Then she wished to be told where Adam fled when he was driven out of Paradise. "Out of this world, of which you are now Empress," they said, "into the world you came from." "If this is so," replied the Empress, "then surely those Kabbalists who believe Paradise to be a world of life only, without matter, have their story badly wrong. For this world, though most pleasant and fruitful, is not a world of mere immaterial life, but a world of living, material creatures." "Without question they have," answered the spirits, "for not all Kabbalahs are true." Then the Empress asked, since the story of the creation of the world says that Eve was tempted by the serpent, whether the Devil was within the serpent, or whether the ser-

41 "Plastic power" (or "plastic nature") was a formative principle that the Cambridge Platonists Henry More and Ralph Cudworth held to shape living things. Cavendish puts it down to matter's own figure-making ("figurative") motions.

pent tempted her without the Devil. They answered that the Devil was within the serpent. "But how did it come about, then," she replied, "that the serpent was cursed?" They answered, "Because the Devil was in him. For are not those men in danger of damnation who have the Devil within them, persuading them to believe and act wickedly?" The Empress asked further whether light and the heavens were one and the same. They answered that mortals named the region that contains the shining natural orbs heaven. But the beatific heaven, the dwelling of the blessed angels and souls, was so far beyond it that it could not be compared to any natural creature. Then the Empress asked them whether all matter was fluid at first. They answered that matter was always as it is, and that some parts of matter were rare, some dense, some fluid, some solid, and so on. Nor was God bound to make all matter fluid at first. She asked further whether matter was immovable in itself. "We have already told you," they said, "that there is no motion but in matter. Were it not for the motion of matter, we spirits could not move, nor give you any answer to your many questions." After this the Empress asked the spirits whether the universe was made within the space of six days, or whether those six days meant so many decrees or commands of God. They answered her that the world was made by the all-powerful decree and command of God; but whether there were six decrees or commands, or fewer, or more, no creature was able to tell. Then she inquired whether there was no mystery in numbers. "No mystery," answered the spirits, "but reckoning or counting; for numbers are only marks of remembrance." "But what do you think of the number four," she said, "which Kabbalists make such a fuss about, and of the number ten, when they say that ten is all, and that all numbers are virtually contained in four?"[42] "We think," they answered, "that Kabbalists have nothing better to do than trouble their heads with such useless fancies. In nature there is no such thing as 'prime' or 'all' in numbers, nor is there any mystery in num-

42 An old Pythagorean idea: 1 + 2 + 3 + 4 = 10, so the first four numbers were said to "contain" ten, the perfect number.

bers except what man's fancy makes. What men call prime, or all, we do not know, because they do not agree in the number of their opinions." Then the Empress asked whether the number six was a symbol of matrimony, as being made up of male and female, for two times three is six. "If any number can be a symbol of matrimony," answered the spirits, "it is not six but two, if two may be allowed to be a number; for the act of matrimony is made up of two joined in one." She asked again what they said to the number seven: was it not an emblem of God, since Kabbalists say that it is neither begotten by any other number nor begets one? "There can be no emblem of God," answered the spirits, "for if we do not know what God is, how can we make an emblem of him? Nor is there any number in God, for God is perfection itself, but numbers are imperfect. As for the begetting of numbers, it is done by multiplication and addition, while subtraction is a kind of death to numbers." "If there is no mystery in numbers," replied the Empress, "then it is pointless to refer the creation of the world to certain numbers, as Kabbalists do." "The only mystery of numbers concerning the creation of the world," they answered, "is that as numbers multiply, so does the world." The Empress asked how far numbers multiplied. The spirits answered, "To infinity." "Why," she said, "infinity cannot be reckoned or numbered." "No more," they answered, "can the parts of the universe. God's creation is an infinite action, proceeding as it does from an infinite power, and so it could not stop at a finite number of creatures, however great." "But leaving the mystery of numbers," the Empress went on, "let me now ask you to tell me whether the suns and planets were generated by the heavens, or by ethereal matter." The spirits answered that the stars and planets were of the same matter as the heavens, the ether, and all other natural creatures; but whether they were generated by the heavens or the ether, they could not tell. "If they are," they said, "they are not like their parents. For the sun, stars, and planets are more splendid than the ether, and also more solid and constant in their motions. But suppose the stars and planets were generated by the heavens and the ethereal

matter: the question then would be, out of what are these generated or produced? If these were created out of nothing, and not generated out of something, then it is probable that the sun, stars, and planets were too. Nay, it is more probable of the stars and planets than of the heavens or the fluid ether, because the stars and planets seem further from mortality than the particular parts of the ether. For no doubt the parts of the ethereal matter change into various forms, which we do not perceive in the stars and planets." The Empress asked further whether they could tell her about the three principles of man according to the doctrine of the Platonists: first, the intellect, spirit, or divine light; second,[43] the soul of man herself; and third, the image of the soul, that is, her vital operation on the body. The spirits answered that they did not understand these three distinctions. To corporeal sense and reason, they seemed like three separate bodies, or three separate corporeal actions. "In any case," they said, "they are tangled conceptions of irregular fancies." "If you do not understand them," replied the Empress, "what are human creatures to do?"

SOULS, BODIES AND VEHICLES

The spirits say they have no figure or color, move only through their vehicles, and know little of souls.

"Many of your philosophers, both modern and ancient," answered the spirits, "try to go beyond sense and reason, and that makes them commit absurdities. No corporeal creature can go beyond sense and reason—no, not even we spirits, as long as we are in our corporeal vehicles." Then the Empress asked them whether there were any atheists in the world. The spirits answered that there were no more atheists than the Kabbalists make. She asked them further whether spirits were of a globular or round figure. They answered that figure belonged to body, but since they were immaterial, they had no figure. She asked

43 The threefold scheme of intellect, soul, and the soul's "image" or life-giving power goes back to Plotinus and was taken up by Henry More.

again whether spirits were not like water or fire. They answered that water and fire were material, even if they were the purest and most refined that could ever be, and even if they were above the heavens. "But we are no more like water or fire," said they, "than we are like earth; our vehicles, however, are of several forms, figures, and degrees of substance." Then she wanted to know whether their vehicles were made of air. "Yes," answered the spirits, "some of our vehicles are of thin air." "Then I suppose," replied the Empress, "that those airy vehicles are your corporeal summer suits." She asked further whether the spirits did not have ascending and descending motions, as other creatures do. They answered that, properly speaking, there was no ascent or descent in infinite nature, only in relation to particular parts. "And as for us spirits," said they, "we can neither ascend nor descend without corporeal vehicles; nor can our vehicles ascend or descend except according to their several shapes and figures, for there can be no motion without body." The Empress asked them further whether there was not a world of spirits, just as there is a world of material creatures. "No," they answered; "the word *world* implies a quantity or multitude of corporeal creatures, and since we are immaterial, we can make no world of spirits." Then she asked to be told when spirits were made. "We do not know," they answered, "how and when we were made, nor are we very curious about it. Indeed, even if we did know, it would be of no benefit, either to us or to you mortals." The Empress replied that Kabbalists and divine philosophers said that men's rational souls were immaterial, and needed corporeal vehicles just as much as spirits did. "If this is so," answered the spirits, "then you are hermaphrodites of nature;[44] but your Kabbalists are mistaken, for they take the purest and subtlest parts of matter for immaterial spirits." Then the Empress asked whether, when the souls of mortals left their bodies, they went to heaven or hell, or whether they remained in airy vehicles. "God's justice and mercy," they answered, "are

44 That is, creatures made of two opposite natures at once, part immaterial and part material.

perfect, not imperfect. But if you mortals will have vehicles for your souls, and a place between heaven and hell, it must be purgatory, which is a place of purification; and for that work fire is more fitting than air. So the vehicles of the souls in purgatory cannot be airy, but fiery. At this rate there can be only four places for human souls to be in, namely heaven, hell, purgatory, and this world. But as for vehicles, they are only fancies, not real truths." Then the Empress asked them where heaven and hell were. "Your Savior Christ," answered the spirits, "has told you that there is a heaven and a hell, but he did not tell you what they are or where they are; so it is too great a presumption for you mortals to inquire after it. If you only strive to get into heaven, that is enough, though you do not know where or what it is; for it is beyond your knowledge and understanding." "I am satisfied," replied the Empress, and asked further whether there were any figures or characters in the soul. They answered that where there was no body, there could be no figure. Then she asked them whether spirits could be naked, and whether they were of a dark or a light color. "As for our nakedness," answered the spirits, "that is a very odd question, and we do not know what you mean by a naked spirit, for you judge of us as of corporeal creatures. And as for color," said they, "it depends on our vehicles; for color belongs to body, and just as there is no body that is colorless, so there is no color that is bodiless." Then the Empress asked to be told whether all souls were made at the first creation of the world. "We know no more," answered the spirits, "about the origin of human souls than we know about ourselves." She asked further whether human bodies were not burdensome to human souls. They answered that bodies made souls active, since they gave them motion; and if action was troublesome to souls, then bodies were troublesome too. She asked again whether souls chose their bodies. They answered that the Platonists believed the souls of lovers lived in the bodies of their beloved. "But surely," said they, "if there is a multitude of souls in a world of matter, they cannot be short of bodies; for as soon as a soul is parted from one body, it enters into

another, and since souls have no motion of their own, they must necessarily be clothed or embodied in the nearest parts of matter." "If this is so," replied the Empress, "then please tell me whether all matter is ensouled." The spirits answered that they could not tell that exactly. But if it was true that matter had no motion except what came from a spiritual power, and that all matter was moving, then no soul could leave a body without necessarily entering another ensouled body, and then there would be two immaterial substances in one body. The Empress asked whether it was not possible for there to be two souls in one body. "As for immaterial souls," answered the spirits, "it is impossible; for there cannot be two immaterials in one inanimate body, since, being bodiless, they lack parts and place. But there may be numerous material souls in one composite body, because every material part has a material natural soul. For nature is simply one infinite, self-moving, living, and self-knowing body, consisting of the three degrees of inanimate, sensitive, and rational matter, so intermixed that no part of nature, even an atom, can be without any of these three degrees. The sensitive is the life, the rational the soul, and the inanimate part the body of infinite nature." The Empress was very well satisfied with this answer, and asked further whether souls did not give life to bodies. "No," they answered, "but spirits and divine souls have a life of their own, which cannot be divided, since it is purer than a natural life; for spirits are incorporeal, and therefore indivisible." "But when the soul is in its vehicle," said the Empress, "then it seems to me she is like the sun, and the vehicle like the moon." "No," they answered; "rather the vehicle is like the sun, and the soul like the moon; for the soul has motion from the body, as the moon has light from the sun." Then the Empress asked the spirits whether it was an evil spirit that tempted Eve and brought all the mischiefs upon mankind, or whether it was the serpent. They answered that spirits could not commit actual evils. The Empress said they might do it by persuasion. They answered that persuasions were actions. But the Empress, not content with this answer, asked whether there was

not a supernatural evil. The spirits answered that there was a supernatural good, which was God; but they knew of no supernatural evil that was equal to God. Then she wanted to know whether evil spirits were counted among the beasts of the field. They answered that many beasts of the field were harmless creatures, and very useful to man; and though some were considered fierce and cruel, they mostly exercised their cruelty on other creatures for no other purpose than to get food and satisfy their natural appetite. "But certainly," said they, "you men are more cruel to one another than evil spirits are to you. And as for their dwelling in desolate places, since we have no communion with them, we can give you no certain account of it." "But what do you think of good spirits?" said the Empress. "May they not be compared to the fowls of the air?" They answered that there were many cruel and ravenous fowls in the air, just as there were fierce and cruel beasts on earth; so the good are always mixed with the bad. She asked further whether the fiery vehicles were a heaven, or a hell, or at least a purgatory to the souls. They answered that if the souls were immaterial, they could not burn, and then fire would do them no harm; and though hell was believed to be an undying and unquenchable fire, heaven was no fire. The Empress replied that heaven was a light. "Yes," said they, "but not a fiery light." Then she asked whether the different shapes and sorts of vehicles made souls and other immaterial spirits miserable or blessed. "The vehicles," they answered, "make them neither better nor worse; for though some vehicles may sometimes have power over others, those others may in turn regain some power over them, according to the various advantages and disadvantages of particular natural parts." The Empress asked further whether animal life came out of the spiritual world and returned there again. The spirits answered that they could not tell exactly. But if it were so, then animal lives must certainly leave their bodies behind them; otherwise the bodies would make the spiritual world a mixed world, that is, partly material and partly immaterial. "But the truth is," said they, "that spirits, being immater-

ial, cannot properly make a world; for a world belongs to material, not to immaterial, creatures." "If this is so," replied the Empress, "then surely there can be no world of lives and forms without matter?" "No," answered the spirits, "nor a world of matter without lives and forms; for natural lives and forms can no more be immaterial than matter can be immovable. And therefore natural lives, forms, and matter are inseparable." Then the Empress asked whether the first man fed on the best sorts of the fruits of the earth, and the beasts on the worst. The spirits answered that unless the beasts of the field were kept out of cultivated fields and gardens, they would pick and choose the best fruits just as men do. "And you may plainly see it," said they, "in squirrels and monkeys, how they are the best choosers of nuts and apples; and how birds pick and feed on the most delicious fruits, and worms on the best roots and most savory herbs. From this you may see that those creatures live and feed better than men do, unless you will say that artificial cookery is better and more wholesome than natural food." Again, the Empress asked whether the first man gave names to all the various sorts of fishes in the sea and in fresh waters. "No," answered the spirits, "he was an earthly, not a watery, creature, and therefore could not know the various sorts of fishes." "Why," replied the Empress, "he was no more an airy creature than he was a watery one, and yet he gave names to the various sorts of fowls and birds of the air." "Fowls," they answered, "are partly airy and partly earthly creatures, not only because they resemble beasts and men in their flesh, but because their resting and dwelling places are on earth; for they build their nests, lay their eggs, and hatch their young not in the air but on the earth." Then she asked whether the first man gave names to all the various sorts of creatures that live on the earth. "Yes," they answered, "to all those that were presented to him, or that he had knowledge of—that is, to all the principal sorts, but not to every particular one. For of mankind," said they, "there were only two at first, and as they increased, so did their names." "But," said the Empress, "who gave the names to the various sorts of fish?" "The descend-

ants of mankind," they answered. Then she asked whether there were not more kinds of creatures now than at the first creation. They answered that there were neither more nor fewer kinds of creatures then than there are now; but there are, without question, more particular sorts of creatures now than there were then. She asked again whether all the creatures that were in Paradise were also in Noah's ark. They answered that the principal kinds had been there, but not all the particular ones. Then she very much wanted to know how it came about that both spirits and men fell from a blessed state into as miserable a state and condition as they are in now. The spirits answered, "By disobedience." The Empress asked where this sin of disobedience came from. But the spirits begged the Empress not to ask them any such questions, because they went beyond their knowledge. Then she begged the spirits to pardon her presumption; "For," said she, "it is the nature of mankind to be inquisitive." "A natural desire for knowledge," answered the spirits, "is not blameworthy, so long as you do not go beyond what your natural reason can comprehend." "Then I'll ask no more," said the Empress, "for fear of committing some error; but there is one thing I cannot help telling you." "What is that?" said the spirits. "I have a great desire," answered the Empress, "to make a Kabbalah." "What kind of Kabbalah?" asked the spirits.

THE DUCHESS BECOMES THE EMPRESS'S SCRIBE

The spirits vanish and return, recommend the Duchess as scribe, and she talks the Empress out of a Kabbalah.

The Empress answered, "The Jewish Kabbalah." No sooner had the Empress declared her mind than the spirits immediately vanished from her sight. This startled the Empress so much that she fell into a trance, in which she lay for some while. At last, when she had come to herself again, she grew very thoughtful, and considering what might be the cause of this strange misfortune, she supposed at first that perhaps the spirits were tired of hearing and answering her questions; But on reflection she real-

ized that spirits could not be tired, and so she decided this was not the true cause of their disappearance. At last, after much debate with her own thoughts, she came firmly to believe that the spirits had committed some fault in their answers, and that as punishment they had been condemned to the lowest and darkest vehicles. This belief became so fixed in her mind that it put her into a very melancholy humor. She then sent for both her fly- and worm-men and told them the cause of her sadness. "It is not so much the vanishing of those spirits that makes me melancholy," she said, "as the thought that I should be the cause of their miserable condition, and that those harmless spirits should, for my sake, sink down into the black and dark abyss of the earth." The worm-men comforted the Empress. They told her that the earth was not so horrid a dwelling as she imagined. "For," they said, "not only all minerals and vegetables but several sorts of animals can testify that the earth is a warm, fruitful, quiet, safe, and happy habitation. And though they lack the light of the sun, they are not in the dark. There is light even within the earth, and by it the creatures that dwell there can see." This account settled Her Majesty's mind a little. Still, she wanted to know the truth: where those spirits were, and in what condition. So she commanded both the fly- and worm-men to use all their labor and industry to find them. At once the worm-men descended into the earth, and the fly-men ascended into the air. After a short time the worm-men returned. They told the Empress that when they went into the earth they asked every creature they met whether any of them had perceived such-and-such spirits. At last they came to the very center of the earth, and there they were reliably informed that those spirits had stayed there for some time. In the end, however, the spirits had gone on to the antipodes, on the other side of the terrestrial globe, diametrically opposite to their own side. The fly-men confirmed the worm-men's report and assured Her Majesty that it was entirely true. "For," they said, "we have gone round the earth, and just as we came to the antipodes we met those spirits, in a very good condition. We told them that Your Majesty was

much troubled by their sudden departure and feared they would be buried in the darkness of the earth. The spirits answered us that they were sorry to have caused Your Majesty such sadness and trouble, and asked us to tell Your Majesty that they feared no darkness, for their vehicles were made of the same sort of substance as cats' eyes, glow-worms' tails, and rotten wood, which carry their light along with them. They also asked us to say that they were ready to do Your Majesty whatever service they could in making your Kabbalah." The Empress was exceedingly glad at this report, and rewarded both her fly- and worm-men generously.[45]

1.51 Some time later, when the spirits had refreshed themselves in their own vehicles, they sent one of their nimblest spirits to ask the Empress whether she would like a scribe, or whether she would write the Kabbalah herself. The Empress received their offer with all civility and told them that she wanted a spiritual scribe. The spirits answered that they could dictate but not write, unless they put on a hand or an arm, or else the whole body of a man. The Empress replied, "How can spirits arm themselves with gauntlets of flesh?" "Just as a man can arm himself with a gauntlet of steel," they answered. "If that is so," said the Empress, "then I will have a scribe." Then the spirits asked her whether she would have the soul of a living man or of a dead one. "Why," said the Empress, "can a soul leave a living body and wander or travel abroad?" "Yes," they answered, "for according to Plato's doctrine there is a conversation of souls, and the souls of lovers live in the bodies of their beloved." "Then," she answered, "I will have the soul of some famous ancient writer, such as Aristotle, Pythagoras, Plato, Epicurus, or the like." The spirits said that those famous men were very learned, subtle, and ingenious writers. But they were so wedded to their own opinions that they would never have the patience to be scribes. "Then," she said, "I'll have the soul of one of the most famous modern writers, such as Galileo, Gassendi,

45 Rotten wood can glow in the dark because of luminous fungi ("foxfire"), a familiar curiosity to seventeenth-century naturalists.

Descartes, Helmont, Hobbes, H. More, etc." The spirits answered that they were fine, ingenious writers, but so self-conceited that they would scorn to be scribes to a woman. "But," they said, "there is a lady, the Duchess of Newcastle. Although she is not one of the most learned, eloquent, witty, and ingenious writers, she is a plain and rational one, for the principle of her writings is sense and reason. Without question she will be ready to do you all the service she can."[46] "Then I will choose that lady for my scribe," said the Empress, "and the Emperor will have no reason to be jealous, since she is one of my own sex." "In truth," said the spirit, "husbands have reason to be jealous of Platonic lovers, for they are very dangerous. They are not only very intimate and close, but subtle and insinuating." "You say well," replied the Empress, "so I pray you, send me the Duchess of Newcastle's soul." The spirit did so. When she came to wait on the Empress, at her first arrival the Empress embraced her and greeted her with a spiritual kiss. Then she asked her whether she could write. "Yes," answered the Duchess's Soul, "but not so legibly that just any reader could understand it, unless he were taught to know my characters. My letters are more like characters than well-formed letters." The Empress said, "You were recommended to me by an honest and ingenious spirit." "Surely," answered the Duchess, "the spirit knows nothing of my handwriting." "The truth is," said the Empress, "he did not mention your handwriting,[47] but he told me that you write sense and reason. If only you can write in such a way that one of my secretaries can learn your hand, they will copy it out fair and legible." The Duchess answered that she had no doubt it could easily be learned in a short time. "But," she said to the Empress, "what is it that Your Majesty would have written?" She answered, "The Jewish Kabbalah." "Then your only way to do

46 The leading natural philosophers of Cavendish's day: Galileo Galilei, Pierre Gassendi, René Descartes, Jan Baptista van Helmont, Thomas Hobbes, and Henry More. She argued with several of them in her *Philosophical Letters* (1664). The Duchess is Cavendish herself.

47 "Characters" here means shorthand symbols or ciphers. Cavendish's handwriting was notoriously hard to read, and her works were copied out by secretaries.

that," said the Duchess, "is to have the soul of some famous Jew. Indeed, if Your Majesty pleases, I do not doubt that you could have the soul of Moses as easily as that of anyone else." "That cannot be," replied the Empress, "for no mortal knows where Moses is."[48] "But human souls are immortal," said the Duchess. "However, if that is too difficult to obtain, you may have the soul of one of the chief rabbis or sages of the tribe of Levi, who will instruct you truly in that mystery. Otherwise Your Majesty will be apt to make mistakes and, a thousand to one, will commit gross errors." "No," said the Empress, "for I shall be instructed by spirits." "Alas!" said the Duchess. "In many cases spirits are as ignorant as mortals. No created spirits have general or absolute knowledge. They cannot know the thoughts of men, much less the mysteries of the great Creator, unless he is pleased to inspire them with the gift of divine knowledge." "Then I pray you," said the Empress, "give me your counsel in this matter." The Duchess answered, "If Your Majesty will be pleased to listen to my advice, I would ask you to let that work alone. It will be of no advantage either to you or to your people, unless you were of the Jewish religion. And even if you were, the common interpretation of holy Scripture would be more instructive, and more easily believed, than your mystical way of interpreting it. If the mystical way had been better and more advantageous for the salvation of the Jews, surely Moses would have saved later ages that labor by giving his own explanation, for he was not only a wise man but a very honest, zealous, and religious one. Therefore the best way," she said, "is to believe the literal sense of Scripture along with people in general. Not everyone should make interpretations according to his own fancy; that work should be left to the learned, or to those who have nothing else to do. Nor do I think," she said, "that God will damn those who are ignorant of it, or let them be lost for want of a mystical interpretation of Scripture." "Then," said the Empress, "I'll leave Scripture alone and make a philosophical Kabbalah." The Duch-

48 An allusion to Deuteronomy 34:6, which says that no one knows the place of Moses's burial.

ess told her that sense and reason would teach her as much about nature as could be known. As for numbers, they were infinite, and to add nonsense to the infinite would breed confusion, especially in human understanding. "Then," replied the Empress, "I'll make a moral Kabbalah." "The only thing in morality," answered the Duchess, "is simply to fear God and to love one's neighbor, and that needs no further interpretation." "But then I'll make a political Kabbalah," said the Empress.[49] The Duchess answered that the chief and only foundation of government was simply reward and punishment, and that it required no further Kabbalah. "But," she said, "if Your Majesty is resolved to make a Kabbalah, I would advise you instead to make a poetical or romance Kabbalah. In it you may use metaphors, allegories, similitudes, etc., and interpret them as you please." At that the Empress thanked the Duchess and, embracing her soul, told her she would take her counsel. She also made her her favorite and kept her for some time in that world. In this way the Duchess came to know all that happened in that rich, populous, and happy world, and so could give this account of it. After some time the Empress gave her leave to return to her husband and kindred in her native world, on condition that her soul should visit her now and then, which it did. And truly their meetings produced such an intimate friendship between them that they became Platonic lovers, although they were both women.

WORLDS WITHIN THE MIND

The Duchess longs to rule a world, and the spirits tell her anyone can create one inside the head.

1.52 Once, when the Duchess's Soul was with the Empress, she seemed very sad and melancholy. The Empress was much troubled at this and asked her the reason for her melancholy humor. "Truly," the Duchess said to the Empress (for between dear friends there is no concealment, since they are like several

49 Kabbalistic interpretation often worked through number symbolism, assigning numerical values to letters and words.

parts of one united body), "my melancholy comes from an extreme ambition." The Empress asked what the height of her ambition was. The Duchess answered that neither she herself nor any creature in the world could know the height, depth, or breadth of her ambition. "But," she said, "my present desire is to be a great princess." The Empress replied, "So you are, for you are a princess of the fourth or fifth degree. A duke or duchess is the highest title or honor that a subject can attain, being next to a king's title. As for the name of prince or princess, it belongs to all who are adopted to the crown, so that those who can add a crown to their arms are princes. Therefore duke is a title above prince. For example, the Duke of Savoy, the Duke of Florence, and the Duke of Lorraine are not called princes but dukes, and so are kings' brothers, this being the higher title."[50] "That is true," answered the Duchess, "except for kings' eldest sons, who are created princes." "Yes," replied the Empress, "but no sovereign makes a subject equal to himself, and kings' eldest sons are partly equal to their fathers. And although some dukes are sovereigns, I never heard that a prince is a sovereign by his title, because the title of prince is more a title of honor than of sovereignty. As I said before, it belongs to all who are adopted to the crown." "Well," said the Duchess, "setting this dispute aside, my ambition is that I would dearly like to be as you are, that is, empress of a world, and I shall never be at peace until I am one." "I love you so well," replied the Empress, "that I wish with all my soul you had the fulfillment of your ambitious desire, and I shall not fail to give you my best advice on how to achieve it. The best informants are the immaterial spirits, and they will soon tell you whether it is possible to obtain your wish." "But," said the Duchess, "I have little acquaintance with them. I never knew any before the time you sent for me." "They know you," replied the Empress, "for they told me about you, and they were the means and instrument of your coming here. So I'll confer with them and ask whether there is not another world of which you

50 Cavendish's husband, William Cavendish, had been created Duke of Newcastle in 1665. "Adopted to the crown" means connected by right to the royal line.

may be empress, as I am of this one." No sooner had the Empress said this than some immaterial spirits came to visit her. She asked them whether there were only three worlds in all, namely the Blazing World she was in, the world she came from, and the world where the Duchess lived. The spirits answered that there were more worlds than there were stars visible in these three worlds. Then the Empress asked whether it was not possible that her dearest friend, the Duchess of Newcastle, might be empress of one of them. "Although there are numerous worlds, indeed infinite ones," answered the spirits, "none is without government." "But is none of these worlds so weak," she said, "that it could be taken by surprise or conquered?" The spirits answered that Lucian's world of lights had for some time been burning low in its snuff. In recent years, however, one Helmont had got hold of it. Since becoming its emperor he had so strengthened its immortal parts with mortal outworks that for the present it was impregnable.[51] "If there is such an infinite number of worlds," said the Empress, "I am sure that not only my friend the Duchess but anyone else might obtain one." "Yes," answered the spirits, "if those worlds were uninhabited; but they are as populous as this one Your Majesty governs." "Why," said the Empress, "it is not possible to conquer a world." "No," answered the spirits, "but for the most part conquerors seldom enjoy their conquest, for being more feared than loved, they most commonly come to an untimely end." "If you will only direct me," said the Duchess to the spirits, "to the world that is easiest to conquer, Her Majesty will assist me with the means, and I will trust to fate and fortune. I would rather die in the adventure of noble achievements than live in obscure and sluggish security, since by the one I may live in glorious fame, and by the other I am buried in oblivion." The spirits answered that the lives of fame were like other lives: some lasted long, and some died soon. "That's true," said the Duchess, "but even the

51 In Lucian's *True History* the travelers visit a city of lamps. A "snuff" is a candle's charred wick, and "in a snuff" also meant in a huff. Helmont is probably van Helmont, whose theories Cavendish criticized.

shortest-lived fame lasts longer than the longest life of a man." "But," replied the spirits, "if occasion does not serve you, you must content yourself to live without such achievements as may gain you fame. But we wonder," the spirits went on, "that you desire to be Empress of a terrestrial world, when you can create yourself a celestial world if you please." "What," said the Empress, "can any mortal be a creator?" "Yes," answered the spirits, "for every human creature can create an immaterial world, fully inhabited by immaterial creatures and populous with immaterial subjects such as we are, and all this within the compass of the head or skull. Indeed, not only that: he may create a world of whatever fashion and government he likes, and give its creatures such motions, figures, forms, colors, perceptions, etc., as he pleases, and make whirlpools, lights, pressures and reactions, etc., as he thinks best.[52] Indeed, he may make a world full of veins, muscles, and nerves, and have all of these move by one jolt or stroke. He may also alter that world as often as he pleases, or change it from a natural world to an artificial one. He may make a world of ideas, a world of atoms, a world of lights, or whatever his fancy leads him to. And since it is in your power to create such a world, what need do you have to venture life, reputation, and tranquility to conquer a gross material world? You can enjoy no more of a material world than a particular creature is able to enjoy, and that is only a small part, considering the compass of such a world. You may plainly observe this in your friend the Empress here. Although she possesses a whole world, she enjoys only a part of it, and she is not so well acquainted with it that she knows all the places, countries, and dominions she governs. The truth is, a sovereign monarch has the general trouble, but the subjects enjoy all the delights and pleasures in parts. It is impossible for a kingdom, or even a country, to be enjoyed by one person at once, unless he takes the pains to travel into every part and endures the inconveniences of going from one place to another. Therefore, since glory,

52 The "whirlpools" are Descartes's vortices, and the "pressures and reactions" are Hobbes's; both philosophers reappear below.

delight, and pleasure live only in other men's opinions, and can neither add tranquility to your mind nor give ease to your body, why should you desire to be Empress of a material world and be troubled with the cares that attend government, when by creating a world within yourself you may enjoy it all, both in whole and in parts, without control or opposition? You may make whatever world you please, alter it when you please, and enjoy as much pleasure and delight as a world can afford you." "You have converted me from my ambitious desire," said the Duchess to the spirits, "so I'll take your advice. I'll reject and despise all the worlds outside me and create a world of my own." The Empress said, "If I make such a world, then I shall be mistress of two worlds, one within me and the other outside me." "That Your Majesty may," said the spirits, and with that they left these two ladies to create two worlds within themselves. The ladies also parted from each other until they had brought their worlds to perfection.

MAKING WORLDS

The Duchess tries worlds after Thales, Pythagoras, Plato, Epicurus, Aristotle, Descartes and Hobbes, then makes her own.

The Duchess of Newcastle was the more earnest and industrious in making her world because she had none at present. First she resolved to frame it according to the opinion of Thales, but she found herself so troubled with daemons that they would not let her have her own way. Instead they forced her to obey their orders and commands,[53] and since she was unwilling to do that, she left off making a world that way and began to frame one according to Pythagoras's doctrine. But in creating it she was so puzzled with numbers, and with how to order and compose the several parts, that, having no skill in arithmetic, she was forced to give up making that world too.[54] Then she intended to create a

53 Thales of Miletus (6th century BC), the earliest Greek philosopher, was reported to have said that all things are full of gods, or daemons.

54 Pythagoras and his followers held that numbers are the principles of all things.

world according to the opinion of Plato, but she found more trouble and difficulty in that than in the two former ones. The numerous ideas had no motion except what was derived from her mind, from which they flowed and issued. That made it a far harder business for her to impart motion to them than puppet-players have in giving motion to every separate puppet, so much so that her patience could not endure the trouble those ideas caused her.[55] So she annihilated that world too, and resolved to make one according to the opinion of Epicurus. No sooner had she begun it than the infinite atoms made such a mist that it quite blinded the perception of her mind. Nor was she able to make a *vacuum* as a receptacle for those atoms, or a place into which they might retire. So, partly for want of that, and partly for want of good order and method, the confusion of those atoms produced such strange and monstrous figures as frightened her more than they delighted her. They caused such a chaos in her mind that it was almost dissolved.[56] At last, having with much ado cleansed and cleared her mind of these dusty and misty particles, she tried to create a world according to Aristotle's opinion. But she remembered that her mind, as most of the learned hold, was immaterial, and that according to Aristotle's principle nothing can be made out of nothing,[57] so she was forced to give up that work as well. Then she fully resolved to take no more patterns from the ancient philosophers and to follow the opinions of the moderns instead. To that end she tried to make a world according to Descartes's opinion. But when she had made the ethereal globules and set them moving by a strong and lively imagination, her mind grew so dizzy with their extraordinarily swift whirling that it almost put her into a

55 Plato's Ideas (or Forms) are the eternal patterns of which sensible things are copies.

56 Epicurus (341–270 BC) taught that the world is made of atoms moving in an infinite void.

57 "Nothing comes from nothing" was the ancient maxim. An immaterial mind would therefore have no matter from which to make a world.

swoon,[58] for her thoughts, from their constant tottering, staggered as if they had all been drunk. So she dissolved that world and began to make another according to Hobbes's opinion. But when all the parts of this imaginary world came to press and drive each other, they seemed like a pack of wolves worrying sheep, or like so many dogs hunting hares.[59] And when she found a reaction equal to those pressures, her mind was so squeezed together that her thoughts could move neither forward nor backward. This caused such a horrible pain in her head that, even after she had dissolved that world, she could not without much difficulty settle her mind and free it from the pain those pressures and reactions had caused in it.

1.53 At last, when the Duchess saw that no patterns would help her in framing her world, she resolved to make a world of her own invention. This world was composed of sensitive and rational self-moving matter. In fact it was composed only of the rational, which is the subtlest and purest degree of matter. For just as the sensitive matter moved and acted both for the perceptions and for the consistency of the body, so this degree of matter, at the same point of time, moved to the creation of the imaginary world (for though the degrees are mixed, the several parts may move several ways at once). Once made, this world appeared so curious and full of variety, so well ordered and so wisely governed, that it cannot possibly be expressed in words. Nor can words express the delight and pleasure the Duchess took in making this world-of-her-own.

1.54 Meanwhile the Empress was also making and dissolving several worlds in her own mind, and was so puzzled that she could not settle on any of them. So she sent for the Duchess, who was ready to wait on the Empress and brought her beloved world along with her. She invited the Empress's Soul to observe its frame, order, and government. Her Majesty was so ravished

58 René Descartes (1596–1650) explained the heavens by vortices of fine matter, including tiny "globules" of a second element.

59 Thomas Hobbes (1588–1679) explained sensation and motion by the pressure of bodies on one another and the reaction they meet.

with the perception of it that her soul desired to live in the Duchess's world. But the Duchess advised her to make another such world in her own mind. "For," she said, "Your Majesty's mind is full of rational corporeal motions, and the rational motions of my mind shall assist you, by the help of sensitive expressions, with the best instructions they are able to give you."

1.55 Persuaded in this way by the Duchess to make an imaginary world of her own, the Empress followed her advice. She quite finished it, framed all kinds of creatures proper and useful for it, strengthened it with good laws, and beautified it with arts and sciences. After that she had nothing else to do, unless she dissolved her imaginary world or made some alterations in the Blazing World she lived in, and she could hardly do that, since it was so well ordered that it could not be improved. It was governed without secret and deceiving policy. There were no ambitious factions, malicious detractions, civil dissensions or homebred quarrels, divisions in religion, foreign wars, etc. Instead, all the people lived in peaceful society, united tranquility, and religious conformity.

VISITING THE DUCHESS'S WORLD

The two souls survey the nations of the Duchess's world, a London theater and the royal court.

She desired to see the world the Duchess came from, and to observe there the several sovereign governments, laws, and customs of its various nations. The Duchess used every means she could to divert her from that journey, telling her that the world she came from was very much disturbed with factions, divisions, and wars, but the Empress would not be persuaded out of her design. Lest the Emperor or any of his subjects should learn of her travels and obstruct her plan, she sent for some of the spirits she had formerly conversed with. She asked whether one of them could supply the place of her soul in her body while she was gone traveling into another world. They answered yes, they

could. “For not only one,” they said, “but many spirits may enter into your body, if you please.” The Empress replied that she wanted only one spirit to be viceroy of her body in her soul’s absence. It must be an honest and ingenious spirit, and, if possible, a female spirit. The spirits told her that there was no difference of sexes among them. “But,” they said, “we will choose an honest and ingenious spirit, and one that will so resemble your soul that neither the Emperor nor any of his subjects, not even the most divine, will know whether it is your own soul or not.” The Empress was very glad of this. After the spirits had gone, she asked the Duchess how her body was supplied in the absence of her soul. The Duchess answered Her Majesty that in her soul’s absence her body was governed by her sensitive and rational corporeal motions. Thus those two female souls traveled together, as lightly as two thoughts, into the Duchess’s native world. Remarkably, in a moment they viewed all its parts and all the actions of all the creatures in it. The Empress’s Soul especially took much notice of the various actions of human creatures in all the nations and parts of that world. She wondered that, for all there were so many different nations, governments, laws, religions, opinions, etc., they should still so generally agree in being ambitious, proud, self-conceited, vain, prodigal, deceitful, envious, malicious, unjust, revengeful, irreligious, factious, etc. She also marveled that not a single state, kingdom, or commonwealth was content with its own share, but each tried to encroach upon its neighbors. Their greatest glory was in plunder and slaughter, and yet their victories were less than their expenses and their losses more than their gains, while being overcome was in a manner their utter ruin. But what she wondered at most was that they should prize or value dirt more than men’s lives, and vanity more than tranquility. “For the emperor of a world,” she said, “enjoys only a part, not the whole, so that his pleasure consists in the opinions of others.” “It is strange to me,” answered the Duchess, “that you should say this, being yourself Empress of a world, and not only of a world, but of a peaceable, quiet, and obedient one.” “That’s

true," replied the Empress, "but although it is a peaceable and obedient world, governing it is more a trouble than a pleasure, for order cannot exist without industry, contrivance, and direction. Besides, the magnificent state that great princes keep, or ought to keep, is troublesome." "Then from Your Majesty's discourse," said the Duchess, "I perceive that the greatest happiness in all worlds consists in moderation." "No doubt of it," replied the Empress. These two souls then visited all the various places, congregations, and assemblies, both of religion and of state, the courts of judicature, and the like, in the various nations. Afterward the Empress said that of all the monarchs of the several parts of that world, she had observed that the Grand Seignior was the greatest, for his word was law and his power absolute.[60] But the Duchess begged the Empress to pardon her for being of another mind. "For," she said, "he cannot alter Muhammad's laws and religion, so the law and the church govern the Emperor, and not the Emperor them." "But," replied the Empress, "he has power in some particulars. For example, he can place and displace subjects in their particular offices in church and state. Having that, he commands both church and state, and no one dares oppose him." "That is true," said the Duchess, "but if it pleases Your Majesty, we will go into the part of the world I came from to wait on Your Majesty, and there you shall see as powerful a monarch as the Grand Seignior. Though his dominions are not as large, they are much stronger. His laws are easy and safe, and he governs so justly and wisely that his subjects are the happiest people of all the nations or parts of that world." "This monarch," said the Empress, "I have a great mind to see." Then they both went, and in a short time arrived in his dominions. As they came into the capital city, the Empress's Soul noticed many gallants going into a house, and she asked the Duchess's Soul what house that was. She told her it was one of the theaters where comedies and tragedies were acted. The Empress asked whether they were real. "No," said the Duchess, "they are feigned." Then the Empress wanted to go into the

60 The Grand Seignior was the usual European title for the Ottoman sultan.

theater. When she had seen the play that was acted, the Duchess asked her how she liked that recreation. "I like it very well," said the Empress, "but I observe that the actors make a better show than the spectators, and the scenery a better one than the actors. The music and dancing are more pleasant and agreeable than the play itself. For I see that the scenery stands for wit, the dancing for humor, and the music is the chorus." "I am sorry," replied the Duchess, "to hear Your Majesty say so; for if the wits of this part of the world heard you, they would condemn you." "What," said the Empress, "would they condemn me for preferring a natural face to a painted signpost, or a natural humor to an artificial dance, or music to a true and profitable narrative?" "As for narrative," replied the Duchess, "our poets scorn it and banish it to the chimney corner, as fitter for old women's tales than for theaters." "Why," said the Empress, "do your poets' actions not match their judgments? Their plays are made from old stories, either Greek or Roman, or of some newfound world." The Duchess answered Her Majesty that it was true that all or most of their plays were taken from old stories. But they had new actions, and these, joined to old stories and combined with new prologues, scenes, music, and dancing, made new plays.

1.56 After this, both souls went to the court, where the whole royal family was together, attended by the chief nobles of their dominions, and it made a very magnificent show. When the Soul of the Empress looked at the King and Queen, she seemed lost in amazement. The Duchess's Soul saw this and asked the Empress how she liked the King, the Queen, and the whole royal family.[61] She answered that among all the monarchs she had seen in that world, she had not found so much majesty and affability mixed so exactly together that neither overshadowed or eclipsed the other. As for the Queen, she said that virtue sat triumphant in her face and piety dwelt in her heart, and that the whole royal family seemed endowed with a divine splendor; but when she had heard the King speak, she believed that Mercury and Apollo had been his celestial instructors. "And my dear lord and hus-

61 The King and Queen are Charles II of England and Catherine of Braganza.

band," added the Duchess, "has been his earthly governor." But after a short stay at court the Duchess's Soul grew very melancholy, and the Empress asked the cause of her sadness.[62]

AT WELBECK

At the Duke's house the Empress watches him ride and fence, and three souls share his body.

She told her that she had an extreme desire to converse with the soul of her noble lord and dear husband, and that she could not bear to stay any longer. The Empress asked the Duchess to be patient only until the King, the Queen, and the royal family had retired, and then she would keep her company to her lord and husband's Soul, who was living at that time in the country some 112 miles away. She did so, and these two souls went toward the part of the kingdom where the Duke of Newcastle was.

1.57 But there is one thing I have forgotten all this while. Although thoughts are the natural language of souls, souls cannot travel without vehicles, and so they use whatever language the nature and properties of their vehicles require. The vehicles of these two souls were made of the purest and finest sort of air, in human shape. This purity and fineness was the reason why no human creature could see or hear them. Had they been made of some coarser sort of air, the sound of that air's language would have been as perceptible as the blowing of Zephyrus.[63]

1.58 And now to return to my story. The Empress's and the Duchess's Souls were traveling into Nottinghamshire (for that was where the Duke lived), and as they passed through Sherwood Forest, the Empress's Soul was greatly delighted with it, since it was a dry, level, wooded place, very pleasant to travel in, both in winter and summer; for it is never very muddy or dusty. At last they arrived at Welbeck, a house where the Duke lived, surrounded on all sides by woods so thick and full that the

62 Mercury was the god of eloquence and Apollo the god of wisdom and poetry. Newcastle was appointed governor (tutor) to the young Prince Charles in 1638.
63 Zephyrus was the gentle west wind of classical myth.

Empress took great pleasure and delight in it. She told the Duchess she had never seen more woodland in so small a space in any part of the kingdom she had passed through.[64] "The truth is," she said, "there seems to be more wood on the seas than on the land"—she meant the ships. The Duchess told her the reason was that there had been a long civil war in that kingdom, in which most of the best timber trees and principal palaces were ruined and destroyed. "And my dear lord and husband," she said, "has lost half his woods by it, besides many houses, lands, and movable goods, so that the total loss to his own estate came to more than half a million pounds." "I wish," said the Empress, "he had some of the gold that is in the Blazing World to repair his losses." The Duchess most humbly thanked Her Imperial Majesty for her kind wishes. "But," she said, "wishes will not repair his ruins. However, God has given my noble lord and husband great patience, with which he bears all his losses and misfortunes." At last they entered the Duke's house, a dwelling more useful than magnificent. When the Empress saw it, she said, "Has the Duke no other house but this?" "Yes," answered the Duchess, "some five miles from here he has a very fine castle called Bolsover." "Then I wish to see that place," said the Empress. "Alas," replied the Duchess, "it is only a bare house, stripped of all its furniture."[65] "Still," said the Empress, "I may see the manner of its structure and building." "That you may," replied the Duchess. While they were talking in this way, the Duke came out of the house into the courtyard to see his manège horses. When the Duchess's Soul saw him, she was so overjoyed that her aerial vehicle became as radiant as if the sun had lit it. From this we may see that the passions of souls or spirits can alter their bodily vehicles.[66] Then these two ladies' spirits went close to him, but he could not perceive them. After the Empress had watched that art of manège, she was very pleased with it

64 Welbeck Abbey in Nottinghamshire, the Cavendish family seat.
65 Bolsover Castle in Derbyshire, another Cavendish house.
66 Manège is the art of training horses in formal riding; Newcastle was a celebrated horseman and wrote a treatise on it (1658).

and praised it as a noble pastime, an exercise fit and proper for noble and heroic persons. When the Duke had gone back into the house, the two Souls followed him. There the Empress saw that he went on to practice with the sword and was such an excellent and unparalleled master of it, and she was as pleased with that exercise as with the former. But the Duchess's Soul was troubled that her dear lord and husband took such violent exercise before a meal, for fear he would overheat himself. Without any thought for the Empress's Soul, she left her aerial vehicle and entered into her lord. When the Empress's Soul saw this, she did the same, and then the Duke had three souls in one body. Had there been just a few more such souls, the Duke would have been like the Grand Seignior in his *seraglio*—only it would have been a Platonic seraglio. But the Duke's Soul was wise, honest, witty, obliging, and noble, and his conversation gave such delight and pleasure to the Empress's Soul that these two souls fell in love with each other. The Duchess's Soul noticed this and grew jealous at first. But then she considered that no adultery could be committed among Platonic lovers, and that Platonism was divine, since it was derived from divine Plato, and she cast that idea of jealousy out of her mind.[67] The conversation of these three souls was so pleasant that it cannot be expressed. The Duke's Soul entertained the Empress's Soul with scenes, songs, music, witty talk, pleasant recreations, and all kinds of harmless amusements, so that the time passed faster than they expected. At last a spirit came and told the Empress that although neither the Emperor nor any of his subjects knew her soul was absent, the Emperor's Soul was so sad and melancholy for want of his own beloved Soul that the whole imperial court had noticed it.

FORTUNE ON TRIAL

Prudence and Honesty plead the Duke's case against Fortune before Truth, and Fortune leaves in a passion.

He therefore advised the Empress's Soul to return to the Blazing World, into her own body that she had left there. Both the Duke's and the Duchess's Souls were very sorry about this. They wished that, if it had been possible, the Empress's Soul could have stayed longer with them, but seeing it could not be otherwise, they resigned themselves. Before the Empress returned to the Blazing World, however, the Duchess asked a favor of her: namely, that she would be pleased to make peace between her noble lord and Fortune. "Why," said the Empress, "are they enemies?" "Yes," answered the Duchess, "and they have been enemies ever since I have been his wife. Indeed, I have heard my lord say that she has crossed him in everything ever since he could remember." "I am sorry for that," replied the Empress, "but I cannot talk with Fortune without the help of an immaterial spirit, and that cannot be done in this world. I have no fly- or bird-men here to send into the region of the air, where for the most part the spirits dwell." The Duchess said she would ask her lord to send an attorney or lawyer to plead his cause. "Fortune will bribe them," replied the Empress, "and so the Duke may well lose his case. So the best way will be for the Duke to choose a friend on his side and let Fortune choose another, and see whether by this means it is possible to settle the difference." The Duchess said, "They will never come to an agreement unless there is a judge or umpire to decide the case." "A judge," replied the Empress, "is easy to find, but an impartial judge is so difficult to get that I doubt we shall find one at all. There is none to be had either in nature or in hell, but only from heaven, and how to get such a divine and celestial judge I cannot tell. Nevertheless, if you will go with me into the Blazing World, I'll try what can be done." "It is my duty," said the Duchess, "to wait on

67 The seraglio was the Ottoman sultan's palace and harem.

Your Majesty, and I shall do it most willingly, for I have no other interest to consider." Then the Duchess spoke to the Duke about the difference between him and Fortune, and told him she wished they might be friends. The Duke answered that for his part he had always sought her friendship with great diligence, but had never yet been able to obtain it, for she had always been his enemy. "However," he said, "I'll try, and send my two friends, Prudence and Honesty, to plead my cause." Then these two friends went with the Duchess and the Empress into the Blazing World (for it should be noted that they are somewhat like spirits, because they are immaterial, although their actions are corporeal). After they arrived there, the Empress refreshed herself and rejoiced with the Emperor. Then she sent her fly-men for some of the spirits and asked their help in settling the difference between Fortune and the Duke of Newcastle. But they told Her Majesty that Fortune was so inconstant that, although she might perhaps promise to hear their cause pleaded, it was a thousand to one whether she would ever have the patience to do it. Nevertheless, at Her Majesty's request, they tried their utmost, and at last persuaded Fortune so far that she chose Folly and Rashness as her friends. But they could not agree on a judge, until at last, with much difficulty, they decided that Truth should hear and decide the cause. So, with everything prepared and the time appointed, both the Empress's and the Duchess's Souls went to hear them plead. When all the immaterial company had assembled, Fortune, standing on a golden globe, made the following speech:

1.59 Noble friends, we are met here to hear a cause pleaded concerning the difference between the Duke of Newcastle and myself. I am willing to yield to it at the persuasion of the Empress's ambassadors, the immaterial spirits. Even so, it would have been fitting for the Duke's Soul to be present as well, to speak for herself. But since she is not here, I shall declare myself to his wife and his friends, and also to my own friends—especially the Empress, to whom I shall chiefly direct my speech. First, I wish Your Imperial Majesty to know that this

Duke, who complains or exclaims so much against me, has always been my enemy. For he has preferred Honesty and Prudence to me, and slighted all my favors. And not only that: he fought against me, and preferred his innocence to my power. "His friends Honesty and Prudence," he said most scornfully, "are more to be regarded than inconstant Fortune, who is only a friend to fools and knaves." Your Majesty may judge for yourself whether, for this neglect and scorn, I have not just reason to be his enemy.

1.60 When Fortune had ended her speech, the Duchess's Soul rose from her seat and spoke to the immaterial assembly as follows:

1.61 Noble friends, by your leave, I think it fitting to answer Lady Fortune on behalf of my noble lord and husband, since he is not here himself. You have heard her complaint about the choice my lord made of his friends, and about the neglect and disrespect he seemed to show her. Give me leave to answer. First, as to the choice of his friends, he has proved himself a wise man in it. And as for the disrespect and rudeness her Ladyship accuses him of, I dare say he is so much a gentleman that I am confident he never in all his life slighted, scorned, or disrespected any of the female sex. On the contrary, he was such a servant and champion of women that he ventured life and estate in their service. But being of an honest as well as an honorable nature, he could not trust Fortune with what he valued above his life, namely his reputation, because Fortune did not side with those who were honest and honorable, but renounced them. And since he could not be on both sides, he chose the side that agreed with his conscience, his nature, and his education. For this choice Fortune not only declared herself his open enemy but fought him in several battles, and many times hand to hand. At last, being a powerful princess and, as some believe, a deity, she overcame him and cast him into banishment. There she kept him in great misery, ruined his estate, and took most of his friends from him. Even when she favored many who were

against her, she still frowned on him.[68] He endured all this with the greatest patience, and with such respect for Lady Fortune that he never in the least tried to offend any of her favorites. He was only sorry that he, an honest man, could find no favor at her court. And since he never injured any of those she favored, neither was he an enemy to her Ladyship. He always gave her the respect and worship that belonged to her power and dignity, and he is still ready at any time to serve her honestly and prudently. He only begs that her Ladyship will be his friend in the future, as she has been his enemy in the past.

1.62 As soon as the Duchess's speech was ended, Folly and Rashness jumped up, and both spoke so thick and fast at once that neither the assembly nor they themselves could understand each other. At this Fortune was somewhat embarrassed, and commanded them either to speak one at a time or be silent. But Prudence told her Ladyship that she should command them to speak wisely as well as singly; otherwise, she said, it would be best for them not to speak at all. Fortune resented this very much, and told Prudence she was too bold. Then she commanded Folly to declare what she wanted to make known. But Folly's speech was so foolish, and mixed with such nonsense, that no one knew what to make of it. Besides, it was so tedious that Fortune told her to be silent, and commanded Rashness to speak for her. Rashness began like this:

1.63 Great Fortune, the Duchess of Newcastle has proved herself, as report says, a very proud and ambitious lady. She has presumed to answer you herself in this noble assembly without your command, in a speech in which she not only contradicted you but preferred Honesty and Prudence to you, saying that her lord was ready to serve you honestly and prudently. That presumption is beyond all pardon. And if you allow Honesty and Prudence to be above you, no one will admire, worship, or serve

68 William Cavendish, Duke of Newcastle, commanded the Royalist forces in the north during the English Civil War. After the defeat at Marston Moor (1644) he went into exile on the Continent, where his estates were confiscated, until the Restoration of 1660.

you; you will be forced to serve yourself, and will be despised, neglected, and scorned by all. From a deity you will become a miserable, dirty, begging mortal in a churchyard porch or at a nobleman's gate. Therefore, to prevent such disasters, fling as many misfortunes and neglects on the Duke and Duchess of Newcastle, and on their two friends, as your power allows. Otherwise Prudence and Honesty will be the chief and only moral deities of mortals.

1.64 When Rashness had ended her speech, Prudence rose and declared herself in this manner:

1.65 Beautiful Truth, great Fortune, and the rest of you, my noble friends, I have come a great and long journey on behalf of my dear friend the Duke of Newcastle. I have come not to make more wounds but, if possible, to heal those already made. Nor do I presume to be a deity. My only request is that you be pleased to accept my offering, for I am a humble and devout supplicant. And since no offering is more acceptable to the gods than the offering of peace, to that end I wish to make an agreement between Fortune and the Duke of Newcastle.

1.66 So she spoke. As she was going on, up jumped Honesty (for she does not always have as much discretion as she ought) and interrupted Prudence.

1.67 I did not come here, she said, to hear Fortune flattered, but to hear the cause between Fortune and the Duke decided. Nor did I come here to speak rhetorically and eloquently, but to put the case plainly and truly. And I'll have you know that the Duke, whose cause we are arguing, was and is my foster son. For I, Honesty, brought him up from childhood, and made a lasting friendship between him and Gratitude, Charity, and Generosity. I sent him to school to Prudence, who taught him wisdom and instructed him in the rules of Temperance, Patience, Justice, and the like. Then I put him into the University of Honor, where he learned all honorable qualities, arts, and sciences. Afterward I sent him to travel through the world of actions, and made Observation his tutor. In those travels he formed a friendship with Experience. All this made him fit for Heaven's blessings

and Fortune's favors. But she hates all who have merit and deserving, and so she became his inveterate enemy and did him all the mischief she could. Then the God of Justice opposed Fortune's malice and pulled him out of the ruins she had cast on him. For this God's favorites were the Duke's champions, so that to be an enemy to the Duke would be to be an enemy to the God of Justice. In short, the true cause of Fortune's malice toward this Duke is that he would never flatter her; for I, Honesty, commanded him not to, since otherwise he would be forced to follow all her inconstant ways and obey all her unjust commands, which would bring great reproach on him. On the other hand, Prudence advised him not to despise Fortune's favors, for that would obstruct and hinder his worth and merit. And he, to obey the advice and counsel of us both, neither flattered nor despised her. He was always humble and respectful to her, as far as honor, honesty, and conscience would allow. All this I refer to Truth's judgment, and I await her final sentence.

1.68 Fortune thought Honesty's plain speech very rude. She would not listen to Truth's judgment, but went off in a passion. At this both the Empress and the Duchess were extremely troubled that their efforts had had no better effect. But Honesty scolded the Duchess, and said she deserved to be punished for desiring Fortune's favors so much: "For it appears," she said, "that you mistrust the gods' blessings." At this the Duchess wept. She answered Honesty that she neither mistrusted the gods' blessings nor relied on Fortune's favors, but only wished that her lord might have no powerful enemies. The Empress was much troubled to see her weep, and angrily told Honesty that she lacked the discretion of Prudence. "For though you are praised," she said, "you are apt to commit many indiscreet actions unless Prudence is your guide." At this rebuke Prudence smiled, and Honesty was somewhat abashed, but they soon became very good friends. After the Duchess's Soul had stayed some time with the Empress in the Blazing World, she begged leave to return to her lord and husband. The Empress granted it on condition that she would come and visit her as often as she

conveniently could, and she promised to do the same for the Duchess.

THE DUCHESS'S ADVICE

Before leaving, the Duchess advises the Empress to dissolve the quarreling societies and restore the old government.

1.69 So the Duchess's Soul took her leave of the Empress, and also of the spirits, who very courteously promised her that in time they would try to make peace and agreement between Fortune and the Duke. Then she returned with Prudence and Honesty into her own world. But just as she was about to depart, the Empress sent for her and asked to have a little more conversation with her before she went; which the Duchess most willingly granted Her Majesty. When she came to wait on her, the Empress told the Duchess that the Duchess was her dear Platonic friend, whose just and impartial judgment she had always greatly esteemed. For that reason she could not refrain from asking her advice, before she left, about the government of the Blazing World. For, she said, this world was very well and wisely ordered and governed at first, when I became its Empress; yet the nature of women delights greatly in change and variety, and so, after I had received absolute power from the Emperor, I somewhat altered the form of government from what I found. But now that I see the world is not as quiet as it was at first, I am much troubled by it— especially because there are such continual quarrels and divisions among the worm-, bear-, and fly-men, the ape-men, the Satyrs, the spider-men, and all others of those sorts, that I fear they will break out into open rebellion and cause great disorder and the ruin of the government. I therefore desire your advice and help as to how I may order it to the best advantage, so that this world may be made peaceful, quiet, and happy, as it was before. The Duchess answered that she had heard from Her Imperial Majesty how well and happily the world had been governed when the Empress first came to rule it. She would therefore advise Her Majesty to reintroduce

the same form of government that had been there before: that is, to have only one sovereign, one religion, one law, and one language, so that the whole world might be like one united family, without divisions— indeed, like God and his blessed saints and angels. Otherwise, she said, it may in time prove as unhappy, indeed as miserable, a world as the one I came from. In that world there are more sovereigns than worlds, more pretended governors than government, more religions than gods, and more opinions in those religions than truths; more laws than rights, and more bribes than acts of justice; more policies than necessities, and more fears than dangers; more covetousness than riches, more ambitions than merits, more services than rewards, more languages than wit, more controversy than knowledge, more reports than noble actions, and more gifts given out of partiality than according to merit. All this, she said, is a great misery, indeed a curse. Your blessed Blazing World has never known it, and probably never will, unless Your Imperial Majesty alters its government from what it was when you began to govern it. And since Your Majesty complains so much of the factions of the bear-, fish-, fly-, ape-, and worm-men, the Satyrs, the spider-men, and the like, and of their perpetual disputes and quarrels, I would advise Your Majesty to dissolve all their societies. For it is better to be without their intelligence than to have an unquiet and disorderly government. The truth is, she said, that wherever there is learning there is usually also controversy and quarreling. For there are always some who want to know more and be wiser than others. Some think their arguments come nearer the truth and are more rational than others'. Some are so wedded to their own opinions that they will never yield to reason. And others find that their opinions are not firmly grounded in reason, yet for fear of incurring some disgrace by changing them, they maintain them against all sense and reason. This must breed factions in their schools, which at last break out into open wars and sometimes bring utter ruin on a state or government. The Empress told the Duchess that she would gladly follow her advice, but she thought it would be an eternal dis-

grace to her to alter her own decrees, acts, and laws. The Duchess answered that, far from being a disgrace, it would rather be to Her Majesty's eternal honor to return from a worse course to a better. It would show and declare her to be more than ordinarily wise and good: so wise as to perceive her own errors, and so good as not to persist in them, which few do. For this, she said, you will win a glorious fame in this world and eternal glory hereafter, and I shall pray for it as long as I live. Upon this advice, the Empress's Soul embraced and kissed the Duchess's Soul with an immaterial kiss, and shed immaterial tears because she was forced to part from her. She had found her to be no flattering parasite but a true friend. And in truth, such was their Platonic friendship that these two loving souls often met and rejoiced in each other's conversation.

The Second Part

The Empress leads the fleets of the Blazing World to save her native country; the Epilogue, where Cavendish claims to be "Authoress of a whole World."

THE SECOND PART OF THE DESCRIPTION OF THE NEW BLAZING-WORLD

Her native country is under attack, and the Duchess devises ships that swim underwater, armed with fire-stones.

2.1 The Empress, having now ordered and settled her government to the best advantage and quiet of her Blazing World, lived and reigned most happily and blessedly. She often received visits from the immaterial spirits, who gave her intelligence of all such things as she wanted to know and they were able to tell her. One time they told her how the world she came from was embroiled in a great war, and that most parts or nations of it were making war against the kingdom that was her native country, where all her friends and relations lived. At this the Empress was extremely troubled, so much so that the Emperor saw her grief in her tears. When he asked the cause, she told him that she had received intelligence from the spirits that the part of the world she came from, her native country, was likely to be destroyed by numerous enemies who were making war against it. The Emperor, deeply affected by this bad news, and especially by the trouble it caused the Empress, tried to comfort her as much as he possibly could. He told her that she might have all the assistance the Blazing World was able to give. She answered that if there were any possibility of transporting forces out of the Blazing World into the world she came from, she would not

fear its ruin so much. "But," she said, "since there is no likelihood of accomplishing any such thing, I don't know how to show my readiness to serve my native country." The Emperor asked whether the spirits that had given her intelligence of this war could not assist her against those enemies with all their power and forces. She answered that spirits could not arm themselves, nor make any use of artificial arms or weapons, for their vehicles were natural bodies, not artificial ones. "Besides," she said, "the violent and strong actions of war will never agree with immaterial spirits; for immaterial spirits cannot fight, nor dig trenches, build fortifications, and the like." "But," said the Emperor, "their vehicles can. Especially if those vehicles are men's bodies, they may be useful in all the actions of war." "Alas," replied the Empress, "that will never do. For first," she said, "it will be difficult to get enough dead bodies for their vehicles to make up a whole army, much less to make many armies to fight so many different nations. Indeed, even if this could be done, it is still not possible to find so many dead and undecayed bodies in one nation; and transporting them out of other nations would be a thing of great difficulty and unlikelihood. But suppose," she said, "all these difficulties could be overcome; there is still one obstruction or hindrance that cannot be avoided in any way. For even if those dead and undecayed bodies had all died in the same minute, before they could rendezvous and be put into a posture of war, to make a great and formidable army, they would stink and decay. And when they came to fight, they would molder into dust and ashes, and so leave the purer immaterial spirits naked. Indeed, even if it were possible to preserve those dead bodies from stinking and decaying, the souls of such bodies would not allow immaterial spirits to rule and direct them. They would enter and govern them themselves, as their rightful owners. This would produce a war between those immaterial souls and the immaterial spirits in material bodies, and all this would keep them from doing any service in the actions of war against the enemies of my native country." "You speak reason," said the Emperor, "and I wish with

all my soul I could suggest some manner or way by which you might be able to help it. But since you have told me of your dear Platonic friend the Duchess of Newcastle, and of her good and profitable counsels, I would ask you to send for her soul and confer with her about this business."

2.2 The Empress was very glad of the Emperor's proposal, and immediately sent for the soul of the said Duchess, which in a minute waited on Her Majesty. Then the Empress declared to her the grief and sadness of her mind, and how much she was troubled and afflicted at the news the immaterial spirits had brought her. She asked the Duchess, if possible, to assist her with the best counsel she could, so that she might show the greatness of the love and affection she bore her native country. Whereupon the Duchess promised Her Majesty to do what lay in her power. Since it was a business of great importance, she asked for some time to consider it. "For," she said, "great affairs require deep consideration." The Empress willingly allowed her this. After the Duchess had considered for a little while, she asked the Empress to send some of her sirens or mermen to see what passages they could find out of the Blazing World into the world she came from. "For," she said, "if there is a passage for a ship to come out of that world into this one, then surely a ship may also pass through the same passage out of this world into that one." So the mermen, or fish-men, were sent out. Being many in number, they used all their industry and swam in several directions. At last, having found the passage, they returned to the Empress and told her this: just as their Blazing World had only one emperor, one government, one religion, and one language, so there was only one passage into that world, and it was so small that no vessel bigger than a packet-boat could go through. Nor was that passage always open; sometimes it was completely frozen up. At this report both the Empress and the Duchess seemed somewhat troubled, fearing that this might be a hindrance or obstruction to their design.

2.3 At last the Duchess asked the Empress to send for her shipwrights and all her architects, who were Giants. When they had

been called, the Duchess told them how some people in her own world had been so ingenious as to devise ships that could swim under water, and asked whether they could do the same. The Giants answered that they had never heard of that invention. Nevertheless, they would try what might be done by art, and spare no labor or industry to find it out. In the meantime, while the Empress and the Duchess were both in serious counsel, after many debates the Duchess asked for only a few ships to transport some of the bird-, worm-, and bear-men. "Alas!"[1] said the Empress, "what can such sorts of men do in the other world? Especially so few? They will soon be destroyed, for a musket will kill numbers of birds at one shot." The Duchess said, "I ask Your Majesty to have just a little patience and rely on my advice, and you will not fail to save your own native country, and in a manner become mistress of all that world you came from." The Empress, who loved the Duchess as her own soul, did so. The Giants returned soon after and told Her Majesty that they had found out the art the Duchess had mentioned, of making ships that could swim under water, at which the Empress and the Duchess were both very glad. When the ships were ready, the Duchess told the Empress that it was necessary for Her Majesty to go herself, in body as well as in soul. "But I," she said, "can only wait on Your Majesty in a spiritual manner, that is, with my soul." "Your soul," said the Empress, "shall live with my soul in my body; for I will want only your counsel and advice." Then the Duchess said, "Your Majesty must command a great number of your fish-men to attend your ships. For you know that your ships are not made for cannons, and are therefore of no use in war. They can drive forward with the help of your engines, and your fish-men can draw them whichever way they please with chains or ropes, to make them go forward or fly back; but still they cannot fight. And though your ships are made of gold and cannot be shot through, but only bruised and battered, the enemy will still attack and board them, and take them as prizes.

1 Cavendish likely has in mind the Dutch inventor Cornelis Drebbel, who demonstrated a rowed submarine in the Thames in the 1620s.

Therefore your fish-men must serve you instead of cannons." "But how," said the Empress, "can the fish-men serve me against an enemy without cannons and all sorts of arms?" "That is the reason," answered the Duchess, "that I want numbers of fish-men, for they shall destroy all your enemies' ships before they can come near you." The Empress asked in what manner that could be done. "Like this," answered the Duchess. "Your Majesty must send a number of worm-men to the burning mountains (for you have a good store of them in the Blazing World), who must get a great quantity of the fire-stone, whose property, as you know, is that it burns as long as it is wet. Since the ships in the other world are all made of wood, they may by this means all be set on fire. And if you can only destroy their ships and stop their navigation, you will be mistress of all that world, because most parts of it cannot live without navigation." "Besides," she said, "the fire-stone will serve you instead of lights or torches. For you know that the world you are going into is dark at night (especially if there is no moonshine, or if the moon is overshadowed by clouds), and not as full of blazing stars as this world is, whose stars give as great a light in the absence of the sun as the sun does when it is present. That world has only little blinking stars, which make more shadow than light, and are only able to draw up vapors from the earth, but not to rarefy or clarify them, or convert them into clear air."

2.4 This advice of the Duchess was highly approved and joyfully embraced by the Empress, who immediately sent her worm-men to get a good quantity of the fire-stone mentioned. She also commanded numbers of fish-men to attend her under water, bird-men to attend her in the air, and bear- and worm-men to attend her in the ships, according to the Duchess's advice. And indeed the bear-men were as useful to her as the North Star. But the bird-men would often rest on the decks of the ships; nor would the Empress, being of a sweet and noble nature, allow them to tire or weary themselves with long flights. For though on land they often flew from one country into another, they still rested in some woods or on some ground,

especially at night, when it was their time to sleep. And so the Empress was forced to take a great many ships along with her, both to transport those various sorts of her loyal and useful subjects and to carry provisions for them. Besides, she was so wearied by the petitions of several others of her subjects who wanted to wait on Her Majesty that she could not possibly refuse them all; for some would rather choose to be drowned than not offer their duty to her.[2]

INTO THE OLD WORLD

The golden fleet passes beneath the ice, and the Empress appears to her countrymen clothed in light.

2.5 So, after everything had been made fit and ready, the Empress began her journey. I cannot properly say she set sail, because in some parts, as in the passage between the two worlds (which was only short), the ships were drawn under water by the fish-men with golden chains. So they had no need of sails there, nor of any other arts, except to keep water from entering the ships, and to give or make as much air as would serve for breathing or respiration for the land animals that were in the ships. The Giants had contrived this so skillfully that those inside found no inconvenience at all. After they had passed the Icy Sea, the golden ships appeared above water and went on until they came near the kingdom that was the Empress's native country. There the bear-men, through their telescopes, discovered a great number of ships, well rigged and manned, which had surrounded that whole kingdom.

2.6 Before she came in sight of the enemy, the Empress sent some of her fish- and bird-men to bring her intelligence of their fleet. Hearing their number, their station, and their posture, she gave orders that when night came her bird-men should carry in their beaks some of the fire-stones mentioned, with their tops wetted, and that the fish-men should carry them likewise and hold them out of the water. For the stones were cut in the form

2 The 1668 text prints "we was," evidently a misprint for "she was."

of torches or candles, and, being many thousands, they made a terrible show; it looked as if all the air and sea were flaming fire. And all who were on the sea, or near it, truly believed that the time of Judgment, or the Last Day, had come, which made them all fall down and pray.

2.7 At daybreak the Empress ordered those lights to be put out. The enemy's naval forces then saw nothing but a number of ships without sails, guns, arms, or any other instruments of war, which seemed to move through the water by themselves, without any help or assistance. This sight threw them into great amazement. Nor could they tell that those ships were made of gold, because the Empress had had them all painted black, or some dark color, so that the natural color of the gold could not be seen through the artificial color of the paint—no, not even with the best telescopes. All this threw the enemy fleet into such fright at night, and such wonder in the morning and by day, that they did not know what to judge or make of them. They knew neither what ships they were nor which side they belonged to, so that they were powerless to move.

2.8 Meanwhile the Empress, recognizing the flags of her own country, sent a letter to their general and the other chief commanders. In it she let them know that she was a great and powerful princess and had come to help them against their enemies, and so she asked them to declare when they wanted her help and assistance.

2.9 Thereupon a council was called and the matter debated. But there were so many conflicting and differing opinions that they could not quickly decide what answer to send the Empress. This angered her so much that she resolved to return to her Blazing World without giving her countrymen any help. But the Duchess of Newcastle begged Her Majesty to calm her temper. "For," she said, "great councils are usually slow, because many men have many different opinions. Besides, every councillor, striving to be the wisest, makes long speeches and raises many doubts, which cause delays." "If I had long-winded councillors," replied the Empress, "I would hang them, because they give

more words than advice." The Duchess answered that Her Majesty should not be angry, but should consider the differences between this world and her Blazing World. "For," she said, "they are not alike. There are grosser and duller understandings in this one than in the Blazing World."

2.10 At last a messenger came out, who thanked the Empress for her kind offer but also asked to know where she came from, and how, and in what way her help could be of service to them. The Empress answered that she was not obliged to tell them where she came from. "But as for the manner of my assistance," she said, "I will appear to your navy in a splendid light, surrounded with fire." The messenger asked at what time they should expect her. "I'll be with you," answered the Empress, "at about one o'clock at night." The messenger returned with this report, which made the poor councillors and seamen alike very afraid. Yet they longed for the time when they would see this strange sight.

2.11 When the appointed hour came, the Empress appeared in garments made of the star-stone. She was borne, or held up, above the water on the heads and backs of the fish-men, so that she seemed to walk on the surface of the water. The bird- and fish-men carried the fire-stones, lit, both in the air and above the waves.

2.12 When her countrymen saw this from a distance, their hearts began to tremble. But as she came somewhat nearer, she left her torches behind and appeared only in her garments of light, like an angel or some deity, and they all knelt down before her and worshipped her with complete submission and reverence. But the Empress would come no nearer than the distance at which her voice could be heard by all, because she did not want any of her equipment to be seen, only its splendor. When she had come close enough for her voice to be heard and understood by everyone, she made the following speech:

2.13 Dear countrymen—for so you are, although you do not know me—I am a native of this kingdom. Hearing that most of this world had resolved to make war on it and sought to destroy

it, or at least to weaken its naval force and power, I have made a voyage out of another world to lend you my help against your enemies. I do not come to strike bargains with you, or to put my own interest before your safety. Rather, I intend to make you the most powerful nation in this world, and therefore I have chosen to give up my own tranquility, riches, and pleasure rather than let you be ruined and destroyed. All the return I ask is your grateful acknowledgment, and to make known my power, love, and loyalty to my native country. For although I am now a great and absolute princess, and Empress of a whole world, I acknowledge that I was once a subject of this kingdom, which is only a small part of this world. And so I want you to believe without doubt that I will destroy all your enemies before the coming night—I mean those who trouble you by sea. If you have any by land, rest assured that I will also help you against them, and make you triumph over all who seek your ruin and destruction.

2.14 After this declaration by the Empress, the general and all the commanders in their various ships returned their humble and heartfelt thanks to Her Majesty for so great a favor, and she took her leave and went back to her own ships. But, good Lord! what different opinions and judgments this produced in the minds of her countrymen! Some said she was an angel; others, that she was a sorceress. Some believed she was a goddess; others said the Devil was deceiving them in the shape of a fine lady.

VICTORY AT SEA

The fish-men burn the enemy fleets, and the Empress makes every nation pay tribute to the King of ESFI.

2.15 The next morning, when the navies were to fight, the Empress appeared on the surface of the water dressed in her imperial robes, which were all of diamonds and carbuncles. In one hand she held a shield made of a single whole carbuncle, and in the other a spear made of a single whole diamond. On her head she wore a cap of diamonds, and right at the top of the crown was a star made of the star-stone mentioned earlier. A

half-moon made of the same stone was set on her forehead. All her other garments were of various kinds of precious jewels. Having given her fish-men directions on how to destroy the enemies of her native country, she proceeded to carry out her plan. The fish-men were to carry the fire-stones in cases of diamond (for the diamonds of the Blazing World surpass the diamonds of this world in splendor as far as the best diamonds of this world surpass pebbles). They were not to uncase or uncover those fire-stones until they were right under the enemy ships or close alongside them, and then they were to wet them and set the ships on fire. No sooner was this done than the whole enemy fleet was in flames; and when the fire reached the place where the gunpowder was, it immediately blew them up, so that all the enemy's various navies were destroyed in a short time. When her countrymen saw this, they all cried out with one voice that she was an angel sent from God to deliver them out of the hands of their enemies. Nor would she return to the Blazing World until she had forced all the rest of that world to submit to that same nation.

2.16 Meanwhile, the general of all their naval forces sent word to their sovereign to inform him of their miraculous deliverance and victory, and of the Empress's plan to make him the most powerful monarch in all that world. After a short time the Empress herself sent to the sovereign of that nation to ask in what way she could be of service to him. He returned her many thanks, both for her help against his enemies and for her kind offer to do him further service for the good and benefit of his nations (for he was king over several kingdoms). He sent her word that although she had partly destroyed his enemies by sea, they were still so powerful that they hindered the trade and commerce of his dominions. To this the Empress replied that she would burn and sink all ships that would not pay him tribute. She immediately sent to all the neighboring nations that had any trade by sea, asking them to pay tribute to the king and sovereign of the nation where she was born. But they refused with great scorn. At this she immediately ordered her fish-men

to destroy all foreign ships trading on the seas, which they did according to the Empress's command. When the neighboring nations and kingdoms saw her power, their affairs and plans were thrown into such disorder that they did not know what to do. At last they sent to the Empress and asked to negotiate with her, but they could get no other terms than to submit and pay tribute to the said king and sovereign of her native country. Otherwise, she was resolved to ruin all their trade and commerce by burning their ships. The negotiation was long, but in the end they could obtain nothing, so that at last they were forced to submit. By this the king of the nations mentioned became absolute master of the seas, and consequently of that world, because, as I mentioned before, the various nations of that world could not well live without trade and commerce by sea as well as by land.

2.17 But after a short time those neighboring nations, finding themselves so enslaved that they could hardly peep out of their own dominions without paying a costly tribute, all agreed to join their forces again against the king and sovereign of those dominions. When the Empress received word of this, she sent out her fish-men to destroy, as they had done before, what remained of all their naval power, so that they were soon forced to submit again. The exceptions were some nations that could live without foreign trade, and some whose trade and commerce was carried on purely by land; these would in no way become tributaries of the said king. The Empress sent them word that if they did not submit to him, she intended to set fire to all their towns and cities and reduce them by force to what they would not yield willingly. But they rejected and scorned Her Majesty's message, which provoked her anger so much that she resolved to send her bird- and worm-men there. Their orders were to begin with the smaller towns and set them on fire (for she was unwilling to do more damage than she had to), and, if the people still remained obstinate in their resolve, to destroy their greater cities as well. The only difficulty was how to transport the worm-men conveniently to those places. But they asked Her

Majesty simply to set them down on any part of the ground of those nations, and said that they could travel within the earth as easily and nimbly as men travel on its surface. The Empress did as they asked.

2.18 But before the bird- and worm-men set out, the Empress ordered the bear-men to look through their telescopes and see which towns and cities would not submit. Having full information about this, she instructed the bird- and bear-men which towns they should begin with;[3] meanwhile she sent to all the princes and sovereigns of those nations to let them know that she would give them a proof of her power and check their obstinacy by burning some of their smaller towns, and that if they still persisted in their obstinate resolve, she would turn their smaller loss into total ruin. She also ordered her bird-men to make their flight at night, so as not to be seen. At last, when the bird- and worm-men reached the appointed places, the worm-men laid fire-stones under the foundation of every house, and the bird-men placed some on the rooftops, so that whether by rain or by other moisture within the earth, the stones could not fail to catch fire. Meanwhile the bird-men, having learned a few words of the people's language, told them that the next time it rained, their towns would all be on fire; at which they were amazed to hear men speaking in the air. At the same time, though, they laughed to hear them say that rain would set their towns on fire, knowing that the effect of water was to quench fire, not to produce it.

2.19 At last a rain came, and suddenly all their houses appeared to be in flames; and the more water was poured on them, the more they flamed and burned. This struck such fright and terror into all the neighboring cities, nations, and kingdoms that, for fear the same should happen to them, they and all the other parts of that world granted the Empress's desire and submitted to the monarch and sovereign of her native country, the King of

3 "Bear-men" is as printed in 1668; the sense requires the worm-men.

ESFI—[4] all except one. That one seldom or never had any rain, only dews, which a great fire would soon use up, and so it scorned her power. The Empress, wishing to make it submit like the rest, knew that every year it was watered by a flowing tide that lasted some weeks. And although their houses stood high off the ground, they were built on supports that were fixed into the ground. So she commanded both her bird-men and worm-men to lay some of the fire-stones at the bottom of those supports. When the tide came in, all their houses were on fire, and the fire so rarefied the water that the tide was soon turned into vapor, and this vapor again into air. This destroyed their houses and also left their whole country barren that year, and it forced them to submit, as the rest of the world had done.

THE EMPRESS'S FAREWELL

The princes of the world gather in a great circle; she dazzles them and sinks away beneath the sea.

2.20 Thus the Empress not only saved her native country but made it the absolute monarchy of all that world. The effects of both her power and her beauty kindled a great desire in all the greatest princes to see her. Hearing that she had resolved to return to her own Blazing World, they all begged the favor of being allowed to wait on Her Majesty before she went. The Empress sent word that she would be glad to grant their requests. Since she had no other place to receive them, she asked them to come out into the open sea with their ships and form a fairly large circle; then her own ships would meet them and close up the circle, and she would present herself to the view of all who came to see her. This answer was joyfully received by all those princes, who came, some sooner and some later, each according to the distance of his country and the length of the voyage. When they had all met in the form and manner just described, the Empress appeared on the surface of

4 ESFI stands for England, Scotland, France, and Ireland, the kingdoms named in the English royal title; the King is Charles II.

the water in her imperial robes. In part of her hair, near her face, she had placed some of the star-stone, which added such luster and glory to it that everyone present was filled with wonder. They believed her to be some celestial creature, or rather an uncreated goddess, and they all had a desire to worship her; for surely, they said, no mortal creature can have such splendid and transcendent beauty, nor can anyone have so great a power as she has—to walk on the waters, and to destroy whatever she pleases, not only whole nations but a whole world.

2.21 The Empress told her own countrymen, who also served as her interpreters to the other princes present, that she would give them an entertainment at the darkest time of night. When that time came, the fire-stones were lit, and they made both air and sea look like one bright, shining flame. This threw all the spectators into such extreme fright that they truly believed they would all be destroyed. Seeing this, the Empress had all the lights of the fire-stones put out, and showed herself only in her garments of light. The bird-men carried her on their backs into the air, and there she appeared as glorious as the sun. Then she was set down on the sea again, and at once there was heard the most melodious and sweetest concert of voices that was ever heard out of the sea, made by the fish-men. This concert was answered by another, made by the bird-men in the air, so that it seemed as if sea and air were speaking and answering each other in singing dialogues, or in the manner of those plays that are performed by singing voices.

2.22 But when day was about to break, the Empress ended her entertainment, and in full daylight all the princes saw her go into the ship that carried the prince and monarch of her native country, the King of ESFI. She had several conferences with him, assured him that her help would be ready whenever he required it, and told him as well that she lacked no intelligence. Then she went out again onto the waters, and from the middle of the circle formed by the ships present she asked them to draw somewhat nearer so that they could hear her speak. When this was done, she declared herself as follows:

2.23 Great, heroic, and famous monarchs, I have come here to assist the King of ESFI against his enemies. He has been unjustly attacked by many different nations that would gladly take away his hereditary rights and prerogatives over the Narrow Seas. Heaven was much displeased at this injustice, and for the injuries he received from his enemies it rewarded him with absolute power, so that he has now become the head monarch of all this world. You may envy that power, but you can in no way hinder him; for all who try to resist his power will get only loss for their labor, and no victory for their profit.[5] So my advice to you all is to pay him tribute justly and truly, so that you may live peacefully and happily and be rewarded with the blessings of heaven —which I wish you from my soul.

2.24 After the Empress had finished her speech to the princes of the various nations of that world, she asked their ships to fall back. When this was done, her own fleet came into the circle without any visible help from sails or tide. Once she had boarded her own ship, the whole fleet immediately sank to the bottom of the sea, leaving all the spectators in deep amazement. She would not allow any of her ships to come above the water until she arrived in the Blazing World.

THE VOYAGE HOME

The souls talk of riches and singularity; the Emperor shows off his jeweled stables and asks for plays.

2.25 During the voyage both the Empress's Soul and the Duchess's Soul were very gay and merry, and sometimes they would talk very seriously with each other. Among their other conversations, the Duchess said she wondered greatly at one thing. Her Majesty had found a passage out of the Blazing World into the world she came from, yet she had not enriched the part of that world where she was born, or at least her own family, though

5 The Narrow Seas were the English Channel and the southern North Sea, where England claimed sovereignty; the claim was a cause of the Anglo-Dutch wars of Cavendish's day.

she had enough to enrich the whole world. The Empress's Soul answered that she loved her native country and her own family as much as any creature could, and that this was exactly why she would not enrich them. "For," she said, "not only particular families or nations but the whole world has such a nature that much gold and a great store of riches drive them mad, so much so that they try to destroy each other for the sake of gold or riches." "The reason for that," said the Duchess, "is that they have too little gold and riches, which makes them so eager to have it." "No," replied the Empress's Soul, "their individual covetousness is beyond all the wealth of the richest world; and the more riches they have, the more covetous they are, for their covetousness is infinite. But," she said, "I wish a passage could be found out of the Blazing World into the world you came from, and I would gladly give you as much riches as you desired." The Duchess's Soul humbly thanked Her Majesty for her great favor. She told her that she was not covetous and wanted no more wealth than her lord and husband had had before the civil wars. "Nor," she said, "would I want it for my own sake, but for the sake of my lord's posterity." "Well," said the Empress, "I'll command my fish-men to use all their skill and industry to find a passage into the world your lord and husband is in." "I truly believe," answered the Duchess, "that no passage will be found into that world. But if there were one, I would not petition Your Majesty for gold and jewels, only for the elixir that grows in the midst of the golden sands, to preserve life and health. Without a passage, though, it is impossible to carry any of it away; for whatever is material cannot travel as immaterial beings, such as souls and spirits, do. Nor do souls need anything to revive them or prolong their lives, since they are unalterable. If souls were like bodies, my soul might have had the benefit of that natural elixir that grows in your Blazing World." "I earnestly wish," said the Empress, "that a passage might be found; then neither your lord nor you would lack wealth or long life. Indeed, I love you so well that I would make you as great and powerful a monarchess as I am of the Blazing World." The Duchess's Soul humbly

thanked Her Majesty, and told her that she acknowledged and valued her love above all things in nature.

2.26 After this conversation they had many other conferences, which for brevity's sake I'll refrain from recounting. At last, after several other questions, the Empress's Soul asked the Duchess why, when she was joined to her body, she took such delight in being singular in dress, behavior, and conversation.[6] The Duchess's Soul answered that she admitted it was extravagant, and beyond what was usual and ordinary. But her ambition was such that she would not be like others in anything, if it were possible. "I try," she said, "to be as singular as I can, for imitating others shows only a mean nature. And though I do not like to be imitated, if I can possibly avoid it, still, rather than imitate others, I would choose to be imitated by others. My nature is such that I would rather appear worse in singularity than better in the fashion." "If you were not a great lady," replied the Empress, "you would never pass in the world for a wise lady; for the world would say your singularities are vanities." The Duchess's Soul answered that she did not care at all what this or any other age thought of her vanities. "But," she said, "neither this present age nor any future age can or will truly say that I am not virtuous and chaste; for I am confident that all who were or are acquainted with me, and all the servants I ever had, will or can declare upon their oaths that my actions were nothing but virtuous. And certainly no one, even of the lowest rank, is without spies and witnesses. That is all the more true of those of the nobler sort, who are seldom or never without attendants, so that their faults (if they have any) will easily be known, and as easily spread abroad. Therefore happy are those natures that are honest, virtuous, and noble—happy not only for themselves but for their families." "But," said the Empress, "if you glory so much in your honesty and virtue, how is it that you plead for dishonest and wicked people in your writings?" The Duchess answered that it was only to show her wit, not her nature.

6 Cavendish was notorious in London for her extravagant, self-designed clothes and unconventional manners.

2.27 At last the Empress arrived in the Blazing World. When she came to her imperial palace, you can sooner imagine the Emperor's joy at her safe return than expect me to describe it. He loved her more than his own soul, and there was no love lost, for the Empress matched his affection with no less love for him. After their time of rejoicing together, the Duchess's Soul begged leave to return to her noble lord. But the Emperor asked her, before she left, to see how he had used his time in the Empress's absence. He had built stables and riding-houses, and wished to have horses trained in the manège, like those the Duke of Newcastle had, according to the Empress's account.[7] The Emperor asked the Duchess about the form and structure of her lord and husband's stables and riding-house. The Duchess answered His Majesty that they were only plain and ordinary. "But," she said, "if my lord had wealth, I am sure he would not spare it in making his buildings as noble as they could be made." Then the Emperor showed the Duchess the stables he had built, which were most stately and magnificent. Among them was one double stable that held a hundred horses on each side. The main building was of gold, lined with various kinds of precious materials. The roof was arched with agates, the walls were lined with carnelian, the floor was paved with amber, and the mangers were of mother-of-pearl. The pillars, and also the middle aisle or walk of the stables, were of crystal, and the front and gate were of turquoise, most neatly cut and carved. The riding-house was lined with sapphires, topazes, and the like. The floor was all of golden sand, so finely sifted that it was extremely soft and not in the least harmful to the horses' feet, and the door and frontispiece were of emeralds, intricately carved.

2.28 After viewing these glorious and magnificent buildings, which delighted the Duchess's Soul very much, she resolved to take her leave. But the Emperor asked her to stay a little while longer, for they both loved her company so much that they were unwilling to have her leave so soon. Several conferences and discussions passed between them. Among other things, the

7 A riding-house was an indoor riding school for training horses in the manège.

Emperor asked her advice on how to set up a theater for plays. The Duchess confessed her ignorance of this art. She told His Majesty that she knew nothing about building theaters or scenery, except what she had gathered by an immaterial observation when she was with the Empress's Soul in the chief city of E. and went into one of their theaters. The Empress could give His Majesty as full an account of that as she could herself. But both the Emperor and Empress told the Duchess that she could give directions for making plays. The Duchess answered that she had as little skill in shaping a play in the fashionable manner as she had in painting or making a scene for show.[8] "But you have made plays," replied the Empress. "Yes," answered the Duchess, "I intended them as plays. But the wits of the present time condemned them as unfit to be staged or acted, because they were not made according to the rules of art. Yet I dare say the descriptions are as good as any they have written." The Emperor asked whether the proper business of plays was not to describe the various humors, actions, and fortunes of mankind. "It is," answered the Duchess.[9] "Why then," replied the Emperor, "the natural humors, actions, and fortunes of mankind are not done by the rules of art." "But," said the Duchess, "it is the art and method of our wits to despise all descriptions of wit, humor, actions, and fortunes that are made without such artificial rules." The Emperor asked, "Are those plays good that are made so methodically and artificially?" The Duchess answered that they were good according to the judgment of the age, or the fashion of the nation, but not according to her judgment. "For truly," she said, "in my opinion their plays will prove a nursery of whining lovers, and not an academy or school for wise, witty, noble, and well-behaved men." "But I," replied the Emperor, "want a theater that may make men wise, and I will have descriptions that are natural, not artificial." "If Your Majesty is

8 E. is England, and its chief city London.

9 Cavendish had published a volume of *Plays* in 1662. The "rules of art" are the neoclassical rules of dramatic construction, such as the unities of time, place, and action.

of that opinion," said the Duchess's Soul, "then my plays may be acted in your Blazing World, though they cannot be acted in the Blinking World of Wit. The next time I come to visit Your Majesty, I shall try to arrange Your Majesty's theater so that it presents such plays as my wit is capable of making." Then the Empress told the Duchess that she loved a foolish verse added to a wise play. The Duchess answered that no world in nature had creatures better suited to that than the Blazing World. "For," she said, "the lice-men, the bird-men, the spider- and fox-men, the ape-men and Satyrs appear extraordinarily pleasant in a verse."

2.29 At this, both the Emperor and Empress begged the Duchess's Soul to stay with them until she had arranged their theater and made plays and verses fit for them, since that was the only sort of recreation they lacked. But the Duchess's Soul begged their Majesties to give her leave to go to her native world, for she longed to be with her dear lord and husband. She promised that after a short time she would return. This was granted, though with great reluctance, and she took her leave with all civility and respect and so departed from their Majesties.

THE DUCHESS AT HOME

Back in her body, the Duchess tells the Duke and her friends about the Blazing World and its pastimes.

2.30 After the Duchess returned to her own body, she entertained her lord with accounts of foreign parts, whenever he was pleased to hear that kind of talk. He was never displeased, though, to hear of the Empress's kind praises of him, or of the descriptions of his character she had been pleased to give the Emperor. Among other things, she told him everything that had passed between the Empress and the various monarchs of the world she had gone to with the Empress. She also told him how the Empress had subdued them, so that they paid tribute and homage to the monarch of the nation or kingdom to which she owed both her birth and her education. She also told her lord about the magnificent stables and riding-houses the Emperor

had built, and about the fine horses in the Blazing World. They came in various shapes and sizes, and their shapes were perfect in each kind. They were of many different colors with fine markings, as if they had been painted by art, and their coats or skins had a far greater gloss and smoothness than satin. "If only there were a passage out of the Blazing World into this one," she said, "you would have not only some of those horses, but also the kind of materials the Emperor has, to build your stables and riding-houses with, and so much gold that I should never grudge your noble and generous gifts." The Duke answered her with a smile that he was sorry there was no passage between those two worlds. "But," he said, "I have always found an obstruction to my good fortunes."

2.31 Once the Duchess happened to be talking about the Empress of the Blazing World with some of her acquaintances, who asked her what pastimes and recreations Her Majesty most delighted in. The Duchess answered that she spent most of her time studying natural causes and effects, which was her chief delight and pastime, and that she sometimes loved to talk with the most learned persons of that world. She added that, to please the Emperor and his nobles, who were all of the royal race, the Empress often went out to take the air. She seldom went in the daytime and always at night, if it could be called night. For, she said, the nights there are as light as days, because of the numerous blazing stars, which are very splendid. Their light is only whiter than the sun's light. And as the sun's light is hot, so their light is cool. It is not as cool as our twinkling starlight, nor is their sunlight as hot as ours; it is more temperate. And the part of the Blazing World where the Empress lives is always clear. It is never subject to storms, tempests, fogs, or mists, but has only refreshing dews that nourish the earth. Its air is sweet and temperate, and, as I said before, there is as much light in the sun's absence as in its presence, which makes the time we call night more pleasant there than the day. Sometimes the Empress goes out by water in barges, sometimes by land in chariots, and sometimes on horseback. Her royal chari-

ots are very glorious. The body is one whole green diamond. The four small pillars that hold up the top cover are four white diamonds, cut in that shape. The top or roof of the chariot is one whole blue diamond, and at the four corners are great sprays of rubies. The seat is made of cloth of gold, stuffed with finely ground ambergris. The chariot is drawn by twelve unicorns, whose trappings are all chains of pearl. As for her barges, they are made only of gold. Her guard of state consists of Giants, since she needs no guard for security, there being no rebels or enemies. But they seldom attend their Majesties when they go out, because their extraordinary height and size block the view. When she is on the water, her entertainment is the music of the fish- and bird-men. On land she has horse races and foot races, for the Empress takes great delight in arranging race matches with the Emperor and the nobility. Some races are between the fox- and ape-men, whom the Satyrs sometimes try to outrun, and some are between the spider-men and the lice-men. There are also various flying matches between the different sorts of bird-men and the different sorts of fly-men, and swimming matches between the different sorts of fish-men. The Emperor, Empress, and their nobles also take great delight in collations, for the Blazing World has the most delicious fruits of every sort. Some of them were never seen or tasted in this world, and they are the most tempting kinds of fruit. When their collations are over, they dance. If they are on the water, they dance on the water, for so many fish-men lie there, so close and thick together, that the dancers can dance very evenly and easily on their backs without any fear of drowning.[10] Their music, both vocal and instrumental, suits the different places where they are. On the water they use water instruments, such as shells filled with water and moved by art, which make a very sweet and delightful harmony. The dances they dance on the water are mostly what we in this world call *swimming dances,* in which they do not lift their feet high. On lawns or plains they have wind instruments, but much better than those in our world.

10 A collation was a light meal or banquet of fruit, sweets, and wine.

When they dance in the woods, they have horn instruments. These are a sort of wind instrument too, but of a different fashion from the others. In their houses they have instruments somewhat like our viols, violins, theorbos, lutes, citterns, guitars, harpsichords, and the like, but so far beyond them that the difference can hardly be expressed. And just as their places of dancing and their music differ, so does their manner or way of dancing.[11] In these and similar recreations the Emperor, the Empress, and the nobility pass their time.

THE EPILOGUE TO THE READER

Cavendish claims to be authoress of a whole world and invites readers to make worlds of their own.

Epil.1 From this poetical description you may see that my ambition is to be not only Empress but Authoress of a whole world. The worlds I have made, both the Blazing World and the other Philosophical World mentioned in the first part of this *Description,* are framed and composed of the purest parts of matter, that is, the rational parts, which are the parts of my mind.[12] This creation was achieved more easily and more quickly than the conquests of the two famous monarchs of the world, Alexander and Caesar. Nor have I made as many disturbances, or caused as many dissolutions of particulars, otherwise called deaths, as they did. For I have destroyed only a few men in a little boat, who died from extreme cold. Even that was done by the hand of justice, which was obliged to punish their crime of carrying off a young and beautiful lady.[13] I take more delight and glory in forming those worlds than Alexander or Caesar ever did in conquering this terrestrial world. I have made my Blazing World a peaceable world, allowing it only one religion, one language,

11 The theorbo was a large long-necked lute, and the cittern a wire-strung instrument rather like a small guitar.

12 For Cavendish the mind is itself made of the finest, self-moving "rational" matter, so the worlds she imagines are, in her terms, real material creations.

13 She refers to the opening episode, in which the Lady's kidnappers freeze to death as their boat is driven toward the pole.

and one government. Yet I could make another world as full of factions, divisions, and wars as this one is full of peace and tranquility, and the rational figures of my mind might show as much courage in fighting as Hector and Achilles had, and be as wise as Nestor, as eloquent as Ulysses, and as beautiful as Helen. But since I value peace above war, wit above policy, and honesty above beauty, instead of the figures of Alexander, Caesar, Hector, Achilles, Nestor, Ulysses, Helen, and the rest, I chose instead the figure of honest Margaret Newcastle, which I would not now exchange for this whole terrestrial world. If anyone likes the world I have made and is willing to be my subject, they may imagine themselves my subjects, and then they are, in their minds, fancies, or imaginations. But if they cannot bear to be subjects, they may create worlds of their own and govern themselves as they please. But let them take care not to prove unjust usurpers and rob me of mine. As for the Philosophical World, I am Empress of it myself. As for the Blazing World, it already has an Empress, who rules it with great wisdom and conduct, and that Empress is my dear Platonic friend. I shall never be so unjust, treacherous, and unworthy toward her as to disturb her government, much less to depose her from her imperial throne for the sake of anyone else. I would rather create another world for another friend.